

LAMPIRAN A

Tabel A.1 Data GDP (Gross Domestic Product).

no	Quarter	GDP	no	Quarter	GDP
1	1	2872,8	45	1	3860,5
2	2	2860,3	46	2	3844,4
3	3	2896,6	47	3	3864,5
4	4	2873,7	48	4	3803,1
5	1	2942,9	49	1	3756,1
6	2	2947,4	50	2	3771,1
7	3	2966	51	3	3754,4
8	4	2980,8	52	4	3759,6
9	1	3037,3	53	1	3783,5
10	2	3089,7	54	2	3886,5
11	3	3125,8	55	3	3944,4
12	4	3175,5	56	4	4012,1
13	1	3253,3	57	1	4089,5
14	2	3267,6	58	2	4144
15	3	3264,3	59	3	4166,4
16	4	3289,1	60	4	4194,2
17	1	3259,4	61	1	4221,8
18	2	3267,6	62	2	4254,8
19	3	3239,1	63	3	4309
20	4	3226,4	64	4	4333,5
21	1	3154	65	1	4390,5
22	2	3190,4	66	2	4387,7
23	3	3249,9	67	3	4412,6
24	4	3292,5	68	4	4427,1
25	1	3356,7	69	1	4460
26	2	3369,2	70	2	4515,3
27	3	3381	71	3	4559,3
28	4	3416,3	72	4	4625,5
29	1	3466,4	73	1	4655,3
30	2	3525	74	2	4704,8
31	3	3574,4	75	3	4734,5
32	4	3567,2	76	4	4779,7
33	1	3591,8	77	1	4809,8
34	2	3707	78	2	4832,4
35	3	3735,6	79	3	4845,6
36	4	3779,6	80	4	4859,7
37	1	3780,8	81	1	4880,8
38	2	3784,3	82	2	4900,3
39	3	3807,5	83	3	4903,3
40	4	3814,6	84	4	4855,1

Lanjutan Tabel A.1 Data GDP (Groos Domestic Product).

no	Quarter	GDP	no	Quarter	GDP
41	1	3830,8	85	1	4824
42	2	3732,6	86	2	4840,7
43	3	3733,5	87	3	4862,7
44	4	3808,5	88	4	4868

Tabel A.2 Data Sekunder data waktu antar kerusakan equipment dari segi mekanik pada sub sistem granulasi di PT Petrokimia Gresik

Tanggal	Waktu antar kerusakan (jam)	Tanggal	Waktu antar kerusakan (jam)
05/01/2004	72	01/12/2004	120
12/01/2004	168	09/12/2004	192
20/01/2004	192	14/12/2004	120
22/01/2004	48	16/12/2004	48
27/01/2004	120	22/12/2004	144
18/02/2004	528	29/12/2004	168
20/02/2004	48	05/01/2005	168
25/02/2004	120	10/01/2005	120
03/03/2004	168	27/01/2005	408
04/03/2004	24	31/01/2005	96
06/03/2004	48	02/02/2005	48
08/03/2004	48	08/02/2005	144
11/03/2004	72	14/02/2005	144
12/03/2004	24	15/02/2005	24
25/03/2004	312	02/03/2005	360
31/03/2004	144	09/03/2005	168
02/04/2004	48	07/04/2005	696
13/04/2004	264	13/04/2005	144
16/04/2004	72	12/05/2005	696
20/04/2004	96	19/05/2005	168
21/04/2004	24	08/06/2005	480
23/04/2004	48	22/06/2005	336
06/05/2004	312	18/07/2005	624
12/05/2004	144	27/07/2005	216
19/05/2004	168	13/10/2005	187
04/06/2004	384	17/10/2005	96
09/06/2004	120	26/10/2005	216
23/06/2004	336	29/10/2005	72
01/07/2004	192	22/11/2005	576

Lanjutan Tabel A.2 Data Sekunder data waktu antar kerusakan equipment dari segi mekanik pada sub sistem granulasi di PT Petrokimia Gresik

Tanggal	Waktu antar kerusakan (jam)	Tanggal	Waktu antar kerusakan (jam)
27/07/2004	120	14/12/2005	528
12/08/2004	384	05/01/2006	144
13/08/2004	24	11/01/2006	144
30/08/2004	408	16/01/2006	120
01/09/2004	48	09/02/2006	576
22/09/2004	504	17/02/2006	192
04/10/2004	288	20/02/2006	72
06/10/2004	48	27/02/2006	168
18/10/2004	288	28/02/2006	24
25/10/2004	168	02/03/2006	48
28/10/2004	72	08/03/2006	144
26/11/2004	696	10/03/2006	48

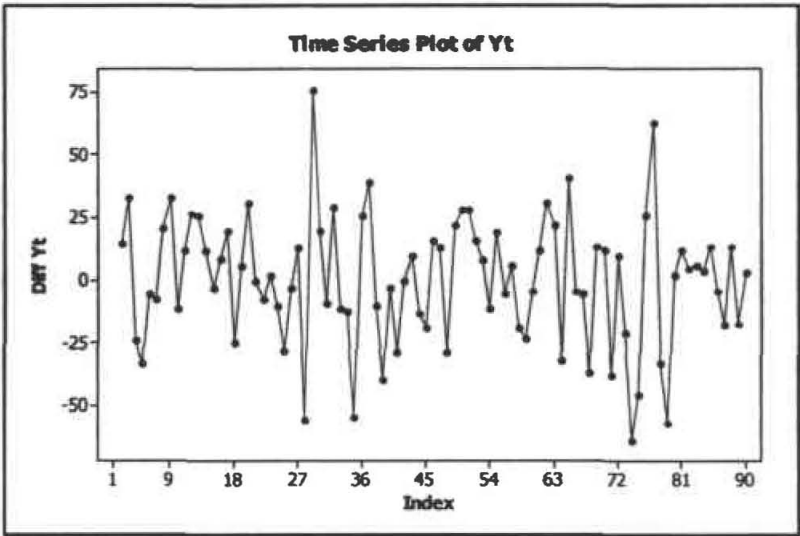
LAMPIRAN B

Tabel B.1 Hasil difference Data Simulasi Y_t untuk kasus 2

t	Y_t	Diff Y_t	t	Y_t	Diff Y_t
1	774	*	46	837	16
2	789	15	47	850	13
3	822	33	48	821	-29
4	798	-24	49	843	22
5	765	-33	50	871	28
6	760	-5	51	899	28
7	753	-7	52	915	16
8	774	21	53	923	8
9	807	33	54	912	-11
10	796	-11	55	931	19
11	808	12	56	926	-5
12	835	27	57	932	6
13	861	26	58	913	-19
14	873	12	59	890	-23
15	870	-3	60	886	-4
16	879	9	61	898	12
17	899	20	62	929	31
18	874	-25	63	951	22
19	880	6	64	919	-32
20	911	31	65	960	41
21	911	0	66	956	-4
22	904	-7	67	951	-5
23	906	2	68	914	-37
24	896	-10	69	928	14
25	868	-28	70	940	12
26	865	-3	71	902	-38
27	878	13	72	912	10
28	822	-56	73	891	-21
29	898	76	74	827	-64
30	918	20	75	781	-46
31	909	-9	76	807	26
32	938	29	77	870	63
33	927	-11	78	837	-33
34	915	-12	79	780	-57
35	860	-55	80	782	2
36	886	26	81	794	12
37	925	39	82	799	5
38	915	-10	83	805	6
39	875	-40	84	809	4
40	872	-3	85	823	14
41	843	-29	86	819	-4
42	843	0	87	801	-18

Lanjutan Tabel B.1 Hasil difference Data Simulasi Y_t

t	Y_t	Diff Y_t	t	Y_t	Diff Y_t
43	853	10	88	815	14
44	840	-13	89	798	-17
45	821	-19	90	801	3



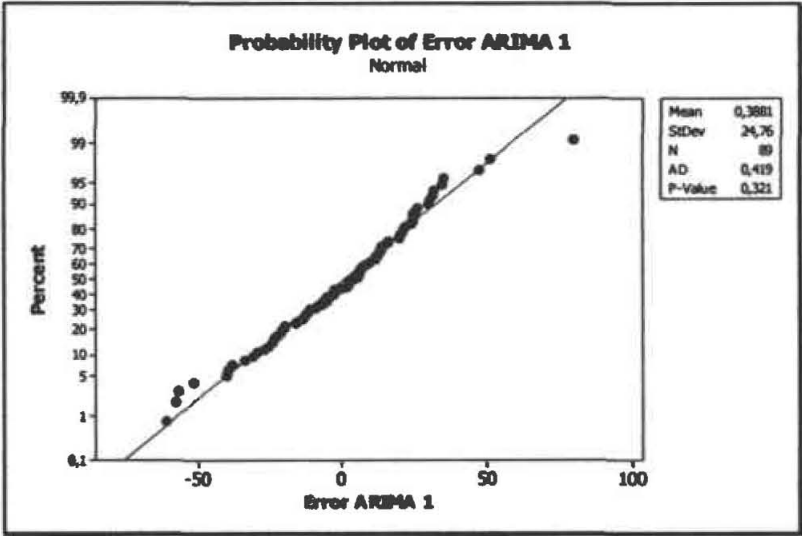
Gambar B.1 *Time Series Plot* Data Simulasi Y_t untuk kasus 2 setelah di *difference* dengan Orde 1

Tabel B.2 Hasil Pengujian Kerandoman Error Model ARIMA $(0, 1, 0) (1, 0, 0)^2$ pada kasus 2

Lag	12	24	36	48
Chi-Square	5	16,2	28,9	44,4
DF	11	23	35	47
P-value	0,932	0,847	0,757	0,580
Kesimpulan	Random	Random	Random	Random

Tabel B.3 Hasil Pengujian Kerandoman Error Model ARIMA $(0, 1, 0) (0, 0, 1)^2$ pada kasus 2

Lag	12	24	36	48
Chi-Square	4,9	15,2	28	42,5
DF	11	23	35	47
P-value	0,935	0,888	0,794	0,657
Kesimpulan	Random	Random	Random	Random



Gambar B.2 Normality Test untuk Error ARIMA (0, 1, 0) (1, 0, 0)²

Tabel B.4 Hasil difference Data Simulasi Y_t untuk kasus 3

t	Y _t	Diff Y _t	t	Y _t	Diff Y _t
1	1495	*	46	1323	9
2	1492	-3	47	1329	6
3	1489	-3	48	1333	4
4	1498	9	49	1317	-16
5	1495	-3	50	1303	-14
6	1499	4	51	1285	-18
7	1501	2	52	1276	-9
8	1520	19	53	1266	-10
9	1510	-10	54	1268	2
10	1493	-17	55	1261	-7
11	1497	4	56	1256	-5
12	1496	-1	57	1242	-14
13	1494	-2	58	1250	8
14	1481	-13	59	1252	2
15	1473	-8	60	1243	-9
16	1482	9	61	1242	-1
17	1467	-15	62	1235	-7
18	1455	-12	63	1232	-3
19	1448	-7	64	1216	-16
20	1446	-2	65	1229	13
21	1444	-2	66	1229	0
22	1428	-16	67	1215	-14
23	1424	-4	68	1210	-5
24	1415	-9	69	1224	14
25	1415	0	70	1195	-29
26	1400	-15	71	1194	-1
27	1392	-8	72	1195	1

Lanjutan Tabel B.4 Hasil difference Data Simulasi Y_t untuk kasus 3

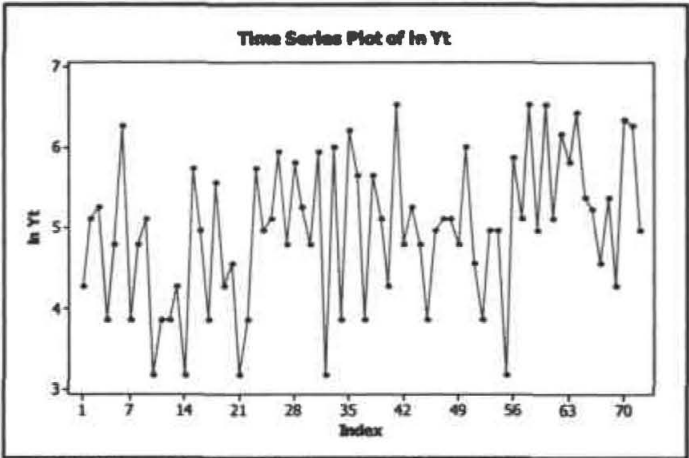
t	Y_t	Diff Y_t	t	Y_t	Diff Y_t
28	1388	-4	73	1191	-4
29	1384	-4	74	1175	-16
30	1383	-1	75	1170	-5
31	1378	-5	76	1163	-7
32	1376	-2	77	1167	4
33	1377	1	78	1158	-9
34	1380	3	79	1153	-5
35	1383	3	80	1155	2
36	1376	-7	81	1156	1
37	1363	-13	82	1158	2
38	1347	-16	83	1156	-2
39	1338	-9	84	1168	12
40	1326	-12	85	1174	6
41	1346	20	86	1156	-18
42	1344	-2	87	1160	4
43	1322	-22	88	1163	3
44	1332	10	89	1166	3
45	1314	-18	90	1148	-18

Tabel B.5 Hasil Transformasi Data Waktu antar Kerusakan untuk data Sekunder

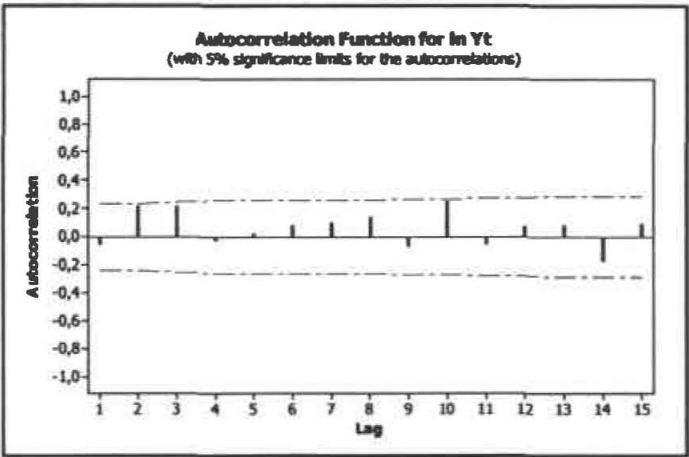
t	Y_t	$\ln Y_t$	t	Y_t	$\ln Y_t$
1	72	4,276666	38	288	5,66296
2	168	5,123964	39	168	5,123964
3	192	5,257495	40	72	4,276666
4	48	3,871201	41	696	6,54535
5	120	4,787492	42	120	4,787492
6	528	6,269096	43	192	5,257495
7	48	3,871201	44	120	4,787492
8	120	4,787492	45	48	3,871201
9	168	5,123964	46	144	4,969813
10	24	3,178054	47	168	5,123964
11	48	3,871201	48	168	5,123964
12	48	3,871201	49	120	4,787492
13	72	4,276666	50	408	6,011267
14	24	3,178054	51	96	4,564348
15	312	5,743003	52	48	3,871201
16	144	4,969813	53	144	4,969813
17	48	3,871201	54	144	4,969813
18	264	5,575949	55	24	3,178054
19	72	4,276666	56	360	5,886104
20	96	4,564348	57	168	5,123964
21	24	3,178054	58	696	6,54535
22	48	3,871201	59	144	4,969813
23	312	5,743003	60	696	6,54535
24	144	4,969813	61	168	5,123964

Lanjutan Tabel B.5 Hasil Transformasi Data Waktu antar Kerusakan untuk data Sekunder

t	Yt	ln Yt	t	Yt	ln Yt
25	168	5,123964	62	480	6,173786
26	384	5,950643	63	336	5,817111
27	120	4,787492	64	624	6,43615
28	336	5,817111	65	216	5,375278
29	192	5,257495	66	187	5,231109
30	120	4,787492	67	96	4,564348
31	384	5,950643	68	216	5,375278
32	24	3,178054	69	72	4,276666
33	408	6,011267	70	576	6,356108
34	48	3,871201	71	528	6,269096
35	504	6,222576	72	144	4,969813
36	288	5,66296	73	144	4,969813
37	48	3,871201			



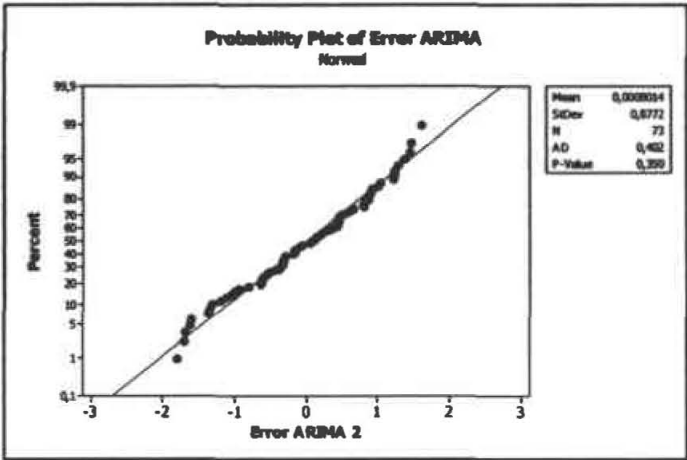
Gambar B.3 Time Series Plot untuk Data Waktu antar Kerusakan $\ln Y_t$ untuk data Sekunder



Gambar B.4 ACF (Autocorrelation Function) Data Waktu antar Kerusakan $\ln Y_t$ untuk data Sekunder

Tabel B.6 Hasil pengujian Kerandoman *error* Model
ARIMA (0, 0, 0) (0, 0, 1)² pada data Sekunder

Lag	12	24	36	48
Chi-Square	14,1	27,3	39,3	54,8
DF	10	22	34	46
P-value	0,168	0,201	0,244	0,174
Kesimpulan	Random	Random	Random	Random



Gambar B.5 Normality test error ARIMA (0, 0, 0) (0, 0, 1)² untuk data
Sekunder

LAMPIRAN C

Tabel C.1 Hasil Perhitungan untuk Data kasus 1

t	Y _t	Y _{C_t}	t	Y _t	Y _{C_t}
1	460	460	46	472	22945
2	533	993	47	519	23464
3	483	1476	48	531	23995
4	523	1999	49	472	24467
5	519	2518	50	496	24963
6	467	2985	51	523	25486
7	536	3521	52	506	25992
8	477	3998	53	496	26488
9	497	4495	54	513	27001
10	544	5039	55	488	27489
11	493	5532	56	499	27988
12	491	6023	57	490	28478
13	496	6519	58	516	28994
14	524	7043	59	466	29460
15	475	7518	60	514	29974
16	525	8043	61	504	30478
17	499	8542	62	508	30986
18	485	9027	63	537	31523
19	514	9541	64	469	31992
20	533	10074	65	525	32517
21	465	10539	66	500	33017
22	504	11043	67	493	33510
23	507	11550	68	526	34036
24	495	12045	69	482	34518
25	484	12529	70	510	35028
26	470	12999	71	485	35513
27	521	13520	72	507	36020
28	531	14051	73	521	36541
29	458	14509	74	492	37033
30	494	15003	75	473	37506
31	504	15507	76	529	38035
32	494	16001	77	494	38529
33	484	16485	78	479	39008
34	481	16966	79	510	39518
35	530	17496	80	495	40013
36	516	18012	81	512	40525
37	468	18480	82	497	41022
38	553	19033	83	473	41495
39	468	19501	84	500	41995
40	533	20034	85	518	42513
41	471	20505	86	482	42995
42	472	20977	87	487	43482
43	514	21491	88	521	44003

Lanjutan Tabel C.1 Hasil Perhitungan untuk Data kasus 1

t	Y_t	Y_{C_t}	t	Y_t	Y_{C_t}
44	521	22012	89	488	44491
45	461	22473	90	470	44961

Tabel C.2 Data Hasil Perhitungan untuk Transformasi $\ln$ dan $Y^{*}_{C_t}$ dengan Data pada kasus 1

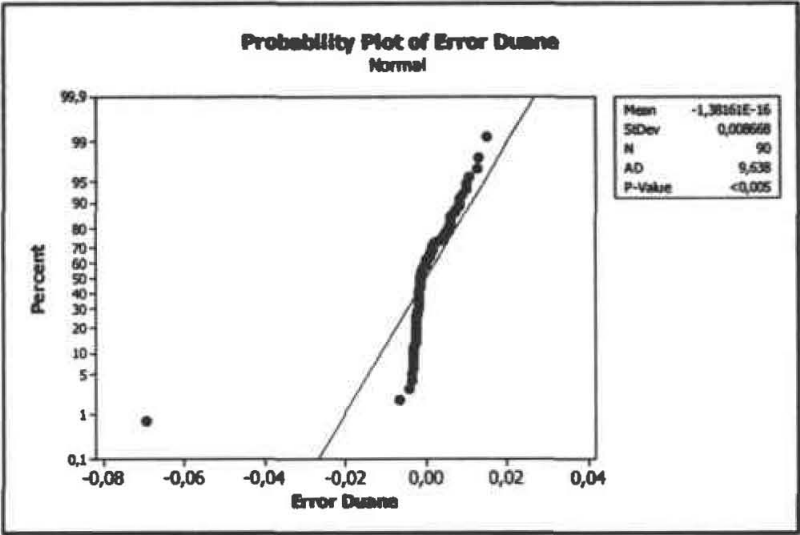
t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
1	460	460	0,0000	6,131226	492,75	*
2	533	993	0,693147	6,900731	985,5	492,75
3	483	1476	1,098612	7,297091	1478,25	492,75
4	523	1999	1,386294	7,600402	1971	492,75
5	519	2518	1,609438	7,83122	2463,75	492,75
6	467	2985	1,791759	8,001355	2956,5	492,75
7	536	3521	1,94591	8,1665	3449,25	492,75
8	477	3998	2,079442	8,29355	3942	492,75
9	497	4495	2,197225	8,410721	4434,75	492,75
10	544	5039	2,302585	8,524963	4927,5	492,75
11	493	5532	2,397895	8,618305	5420,25	492,75
12	491	6023	2,484907	8,703341	5913	492,75
13	496	6519	2,564949	8,782476	6405,75	492,75
14	524	7043	2,639057	8,859789	6898,5	492,75
15	475	7518	2,70805	8,925055	7391,25	492,75
16	525	8043	2,772589	8,992557	7884	492,75
17	499	8542	2,833213	9,05275	8376,75	492,75
18	485	9027	2,890372	9,107975	8869,5	492,75
19	514	9541	2,944439	9,163354	9362,25	492,75
20	533	10074	2,995732	9,217713	9855	492,75
21	465	10539	3,044522	9,262838	10347,75	492,75
22	504	11043	3,091042	9,309552	10840,5	492,75
23	507	11550	3,135494	9,354441	11333,25	492,75
24	495	12045	3,178054	9,396405	11826	492,75
25	484	12529	3,218876	9,435801	12318,75	492,75
26	470	12999	3,258097	9,472628	12811,5	492,75
27	521	13520	3,295837	9,511925	13304,25	492,75
28	531	14051	3,332205	9,550449	13797	492,75
29	458	14509	3,367296	9,582524	14289,75	492,75
30	494	15003	3,401197	9,616005	14782,5	492,75
31	504	15507	3,433987	9,649047	15275,25	492,75
32	494	16001	3,465736	9,680406	15768	492,75
33	484	16485	3,496508	9,710206	16260,75	492,75
34	481	16966	3,526361	9,738967	16753,5	492,75
35	530	17496	3,555348	9,769728	17246,25	492,75
36	516	18012	3,583519	9,798793	17739	492,75
37	468	18480	3,610918	9,824444	18231,75	492,75
38	553	19033	3,637586	9,85393	18724,5	492,75
39	468	19501	3,663562	9,878221	19217,25	492,75

Lanjutan Tabel C.2 Data Hasil Perhitungan untuk Transformasi $\ln$ dan Y^{c_T} dengan Data pada kasus 1

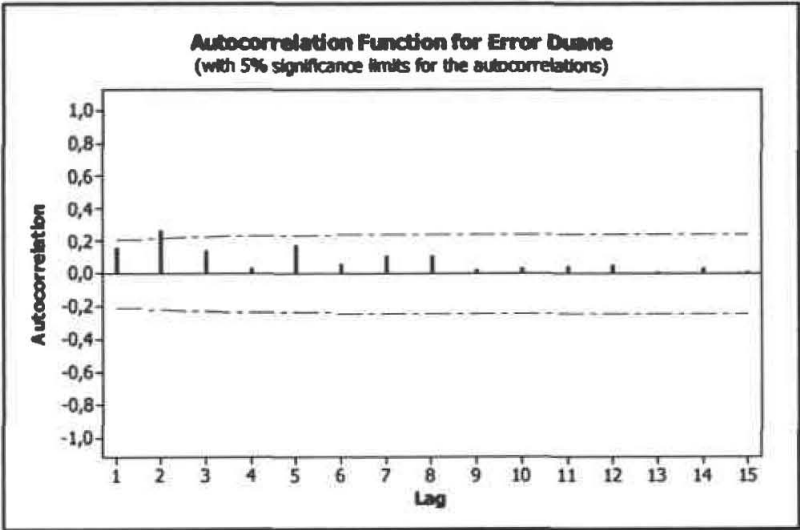
t	Y_t	Y_{c_t}	$\ln t$	$\ln Y_{c_t}$	$\hat{Y}_{c_t}$	$\hat{Y}_t$
40	533	20034	3,688879	9,905186	19710	492,75
41	471	20505	3,713572	9,928424	20202,75	492,75
42	472	20977	3,73767	9,951182	20695,5	492,75
43	514	21491	3,7612	9,97539	21188,25	492,75
44	521	22012	3,78419	9,999343	21681	492,75
45	461	22473	3,806662	10,02007	22173,75	492,75
46	472	22945	3,828641	10,04086	22666,5	492,75
47	519	23464	3,850148	10,06322	23159,25	492,75
48	531	23995	3,871201	10,0856	23652	492,75
49	472	24467	3,89182	10,10508	24144,75	492,75
50	496	24963	3,912023	10,12515	24637,5	492,75
51	523	25486	3,931826	10,14588	25130,25	492,75
52	506	25992	3,951244	10,16554	25623	492,75
53	496	26488	3,970292	10,18445	26115,75	492,75
54	513	27001	3,988984	10,20363	26608,5	492,75
55	488	27489	4,007333	10,22154	27101,25	492,75
56	499	27988	4,025352	10,23953	27594	492,75
57	490	28478	4,043051	10,25689	28086,75	492,75
58	516	28994	4,060443	10,27484	28579,5	492,75
59	466	29460	4,077537	10,29079	29072,25	492,75
60	514	29974	4,094345	10,30809	29565	492,75
61	504	30478	4,110874	10,32476	30057,75	492,75
62	508	30986	4,127134	10,34129	30550,5	492,75
63	537	31523	4,143135	10,35847	31043,25	492,75
64	469	31992	4,158883	10,37324	31536	492,75
65	525	32517	4,174387	10,38952	32028,75	492,75
66	500	33017	4,189655	10,40478	32521,5	492,75
67	493	33510	4,204693	10,4196	33014,25	492,75
68	526	34036	4,219508	10,43517	33507	492,75
69	482	34518	4,234107	10,44924	33999,75	492,75
70	510	35028	4,248495	10,4639	34492,5	492,75
71	485	35513	4,26268	10,47765	34985,25	492,75
72	507	36020	4,276666	10,49183	35478	492,75
73	521	36541	4,290459	10,50619	35970,75	492,75
74	492	37033	4,304065	10,51956	36463,5	492,75
75	473	37506	4,317488	10,53226	36956,25	492,75
76	529	38035	4,330733	10,54626	37449	492,75
77	494	38529	4,343805	10,55917	37941,75	492,75
78	479	39008	4,356709	10,57152	38434,5	492,75
79	510	39518	4,369448	10,58451	38927,25	492,75
80	495	40013	4,382027	10,59696	39420	492,75
81	512	40525	4,394449	10,60967	39912,75	492,75
82	497	41022	4,406719	10,62186	40405,5	492,75

Lanjutan Tabel C.2 Data Hasil Perhitungan untuk Transformasi $\ln$ dan Y^{c_T} dengan Data pada kasus 1

t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
83	473	41495	4,418841	10,63333	40898,25	492,75
84	500	41995	4,430817	10,64531	41391	492,75
85	518	42513	4,442651	10,65757	41883,75	492,75
86	482	42995	4,454347	10,66884	42376,5	492,75
87	487	43482	4,465908	10,6801	42869,25	492,75
88	521	44003	4,477337	10,69201	43362	492,75
89	488	44491	4,488636	10,70304	43854,75	492,75
90	470	44961	4,49981	10,71355	44347,5	492,75



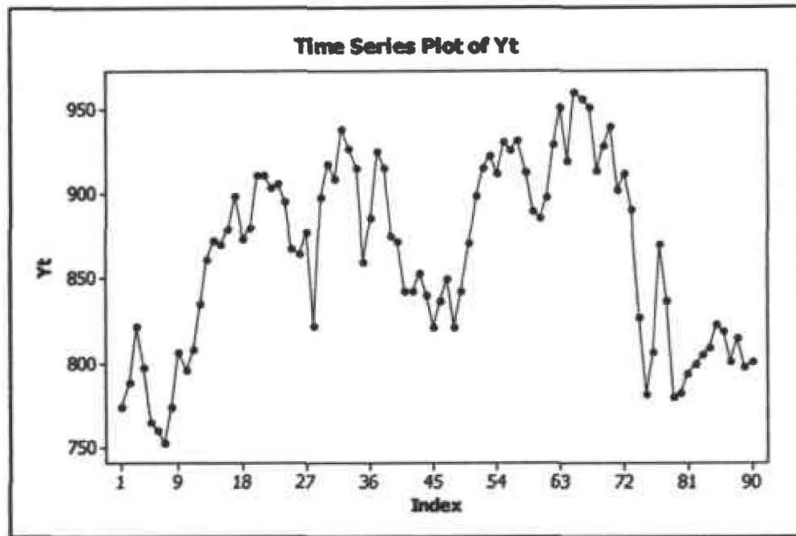
Gambar C.1 Normality test untuk Error Duane dengan Data pada kasus 1



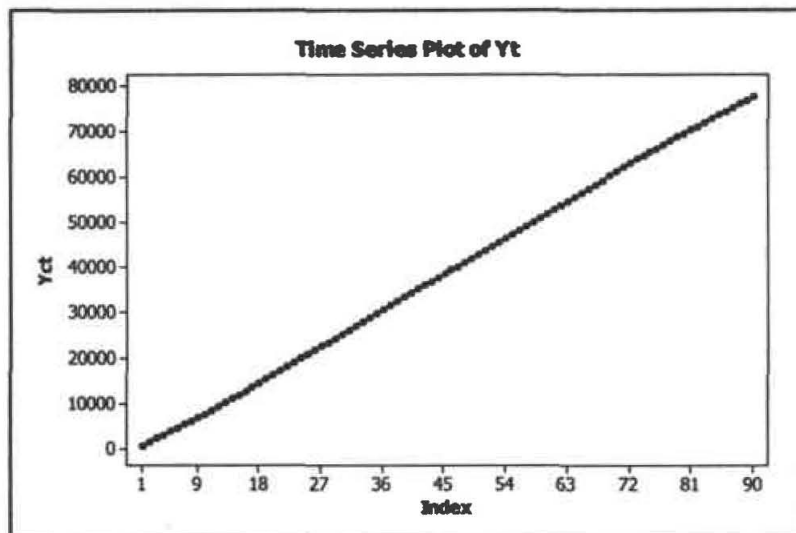
Gambar C.2 ACF (Auto Correlation Function) untuk Error Dune dengan Data pada kasus 1

Tabel C.3 Hasil Perhitungan Data untuk kasus 2

t	Y_t	Y_{C_t}	t	Y_t	Y_{C_t}
1	774	774	46	837	39453
2	789	1563	47	850	40303
3	822	2385	48	821	41124
4	798	3183	49	843	41967
5	765	3948	50	871	42838
6	760	4708	51	899	43737
7	753	5461	52	915	44652
8	774	6235	53	923	45575
9	807	7042	54	912	46487
10	796	7838	55	931	47418
11	808	8646	56	926	48344
12	835	9481	57	932	49276
13	861	10342	58	913	50189
14	873	11215	59	890	51079
15	870	12085	60	886	51965
16	879	12964	61	898	52863
17	899	13863	62	929	53792
18	874	14737	63	951	54743
19	880	15617	64	919	55662
20	911	16528	65	960	56622
21	911	17439	66	956	57578
22	904	18343	67	951	58529
23	906	19249	68	914	59443
24	896	20145	69	928	60371
25	868	21013	70	940	61311
26	865	21878	71	902	62213
27	878	22756	72	912	63125
28	822	23578	73	891	64016
29	898	24476	74	827	64843
30	918	25394	75	781	65624
31	909	26303	76	807	66431
32	938	27241	77	870	67301
33	927	28168	78	837	68138
34	915	29083	79	780	68918
35	860	29943	80	782	69700
36	886	30829	81	794	70494
37	925	31754	82	799	71293
38	915	32669	83	805	72098
39	875	33544	84	809	72907
40	872	34416	85	823	73730
41	843	35259	86	819	74549
42	843	36102	87	801	75350
43	853	36955	88	815	76165
44	840	37795	89	798	76963
45	821	38616	90	801	77764



Gambar C.3 Plot Y_t versus T dengan Data pada kasus 2



Gambar C.4 Plot Y_{c_t} versus T dengan Data pada kasus 2

Tabel C.4 Data Hasil Perhitungan untuk Transformasi $\ln$ dan $Y^{\wedge}c_t$ dengan Data pada kasus 2

t	Y_t	Y_{c_t}	$\ln t$	$\ln Y_{c_t}$	$\hat{Y}_{c_t}$	$\hat{Y}_t$
1	774	774	0,0000	6,651572	742,48	*
2	789	1563	0,693147	7,354362	1526,708	784,2279
3	822	2385	1,098612	7,776954	2327,506	800,7984
4	798	3183	1,386294	8,065579	3139,259	811,7527
5	765	3948	1,609438	8,280964	3959,256	819,9968
6	760	4708	1,791759	8,457018	4785,883	826,627
7	753	5461	1,94591	8,605387	5618,065	832,1817
8	774	6235	2,079442	8,737934	6455,031	836,9667
9	807	7042	2,197225	8,859647	7296,204	841,1728

Lanjutan Tabel C.4 Data Hasil Perhitungan untuk Transformasi $\ln$ dan Y^{c_T} dengan Data pada kasus 2

t	Y_t	Y_{c_t}	$\ln t$	$\ln Y_{c_t}$	$\hat{Y}_{c_t}$	$\hat{Y}_t$
10	796	7838	2,302585	8,966739	8141,131	844,9273
11	808	8646	2,397895	9,064852	8989,451	848,3193
12	835	9481	2,484907	9,157045	9840,865	851,4139
13	861	10342	2,564949	9,243969	10695,12	854,26
14	873	11215	2,639057	9,325007	11552,02	856,8951
15	870	12085	2,70805	9,39972	12411,37	859,3489
16	879	12964	2,772589	9,469932	13273,01	861,6452
17	899	13863	2,833213	9,536979	14136,82	863,8034
18	874	14737	2,890372	9,598117	15002,66	865,8394
19	880	15617	2,944439	9,656115	15870,42	867,7666
20	911	16528	2,995732	9,712811	16740,02	869,5962
21	911	17439	3,044522	9,766464	17611,36	871,3379
22	904	18343	3,091042	9,817003	18484,36	872,9998
23	906	19249	3,135494	9,865214	19358,95	874,589
24	896	20145	3,178054	9,910711	20235,06	876,1119
25	868	21013	3,218876	9,952897	21112,63	877,5737
26	865	21878	3,258097	9,993237	21991,61	878,9793
27	878	22756	3,295837	10,03258	22871,94	880,3329
28	822	23578	3,332205	10,06807	23753,58	881,6384
29	898	24476	3,367296	10,10545	24636,48	882,899
30	918	25394	3,401197	10,14227	25520,6	884,1179
31	909	26303	3,433987	10,17744	26405,9	885,2977
32	938	27241	3,465736	10,21248	27292,34	886,441
33	927	28168	3,496508	10,24594	28179,89	887,5499
34	915	29083	3,526361	10,27791	29068,51	888,6265
35	860	29943	3,555348	10,30705	29958,19	889,6727
36	886	30829	3,583519	10,33621	30848,88	890,6902
37	925	31754	3,610918	10,36577	31740,56	891,6805
38	915	32669	3,637586	10,39418	32633,2	892,6452
39	875	33544	3,663562	10,42061	33526,79	893,5854
40	872	34416	3,688879	10,44628	34421,29	894,5025
41	843	35259	3,713572	10,47048	35316,69	895,3975
42	843	36102	3,73767	10,4941	36212,96	896,2716
43	853	36955	3,7612	10,51746	37110,09	897,1256
44	840	37795	3,78419	10,53993	38008,05	897,9606
45	821	38616	3,806662	10,56142	38906,82	898,7774
46	837	39453	3,828641	10,58287	39806,4	899,5767
47	850	40303	3,850148	10,60418	40706,76	900,3594
48	821	41124	3,871201	10,62435	41607,89	901,126
49	843	41967	3,89182	10,64464	42509,76	901,8773
50	871	42838	3,912023	10,66518	43412,38	902,6139
51	899	43737	3,931826	10,68595	44315,71	903,3363
52	915	44652	3,951244	10,70665	45219,76	904,0452
53	923	45575	3,970292	10,72711	46124,5	904,7409
54	912	46487	3,988984	10,74693	47029,92	905,424

Lanjutan Tabel C.4 Data Hasil Perhitungan untuk Transformasi $\ln$ dan Y^{c_T} dengan Data pada kasus 2

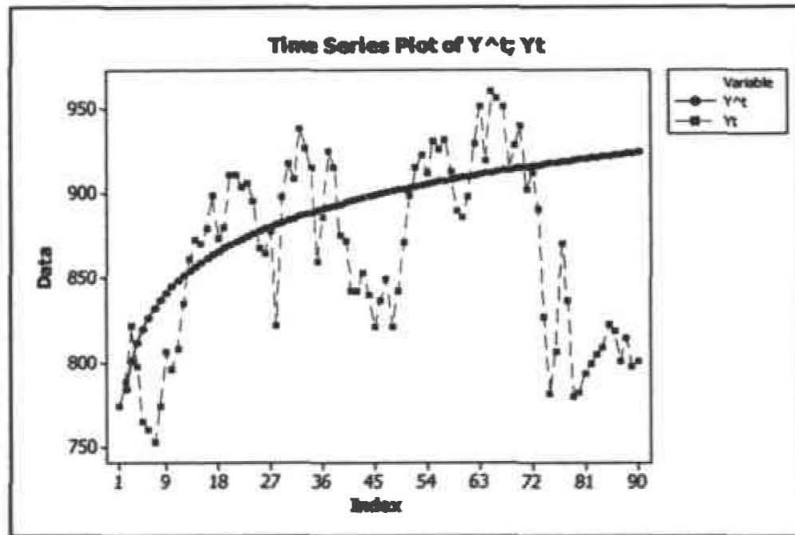
t	Y_t	Y_{c_t}	$\ln t$	$\ln Y_{c_t}$	$\hat{Y}_{c_t}$	$\hat{Y}_t$
55	931	47418	4,007333	10,76676	47936,02	906,095
56	926	48344	4,025352	10,7861	48842,77	906,7542
57	932	49276	4,043051	10,80519	49750,17	907,4022
58	913	50189	4,060443	10,82355	50658,21	908,0392
59	890	51079	4,077537	10,84113	51566,88	908,6657
60	886	51965	4,094345	10,85833	52476,16	909,282
61	898	52863	4,110874	10,87546	53386,05	909,8884
62	929	53792	4,127134	10,89288	54296,54	910,4853
63	951	54743	4,143135	10,9104	55207,61	911,0729
64	919	55662	4,158883	10,92705	56119,26	911,6516
65	960	56622	4,174387	10,94415	57031,48	912,2215
66	956	57578	4,189655	10,9609	57944,26	912,7831
67	951	58529	4,204693	10,97728	58857,6	913,3365
68	914	59443	4,219508	10,99277	59771,48	913,8819
69	928	60371	4,234107	11,00826	60685,9	914,4197
70	940	61311	4,248495	11,02371	61600,85	914,95
71	902	62213	4,26268	11,03832	62516,33	915,473
72	912	63125	4,276666	11,05287	63432,31	915,9889
73	891	64016	4,290459	11,06689	64348,81	916,4979
74	827	64843	4,304065	11,07972	65265,81	917,0003
75	781	65624	4,317488	11,0917	66183,31	917,4961
76	807	66431	4,330733	11,10392	67101,29	917,9856
77	870	67301	4,343805	11,11693	68019,76	918,4689
78	837	68138	4,356709	11,12929	68938,71	918,9461
79	780	68918	4,369448	11,14067	69858,13	919,4175
80	782	69700	4,382027	11,15196	70778,01	919,8832
81	794	70494	4,394449	11,16328	71698,35	920,3432
82	799	71293	4,406719	11,17455	72619,15	920,7979
83	805	72098	4,418841	11,18578	73540,4	921,2471
84	809	72907	4,430817	11,19694	74462,09	921,6912
85	823	73730	4,442651	11,20817	75384,22	922,1303
86	819	74549	4,454347	11,21921	76306,78	922,5643
87	801	75350	4,465908	11,2299	77229,78	922,9935
88	815	76165	4,477337	11,24066	78153,2	923,418
89	798	76963	4,488636	11,25108	79077,03	923,8378
90	801	77764	4,49981	11,26143	80001,29	924,2531

Tabel C.5 Hasil Regresi untuk Data pada kasus 2

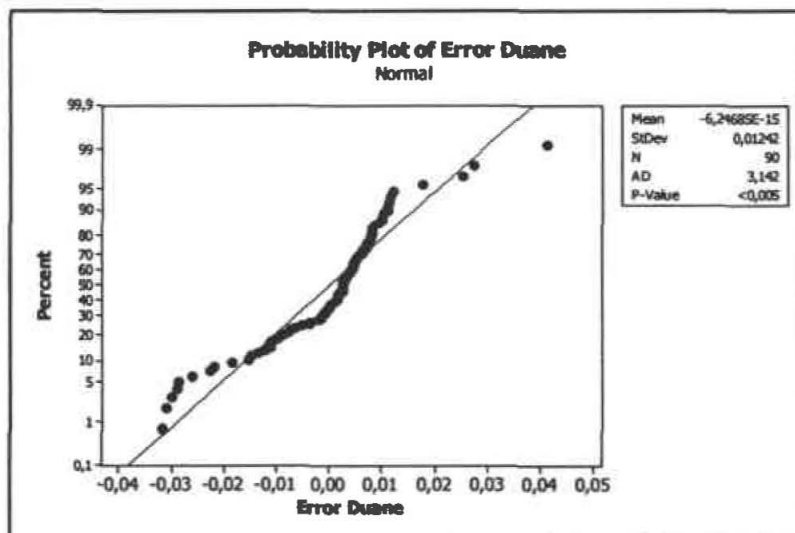
Persamaan Regresi :

$$Y_{c_T} = 6,61 + 1,04 \ln T$$

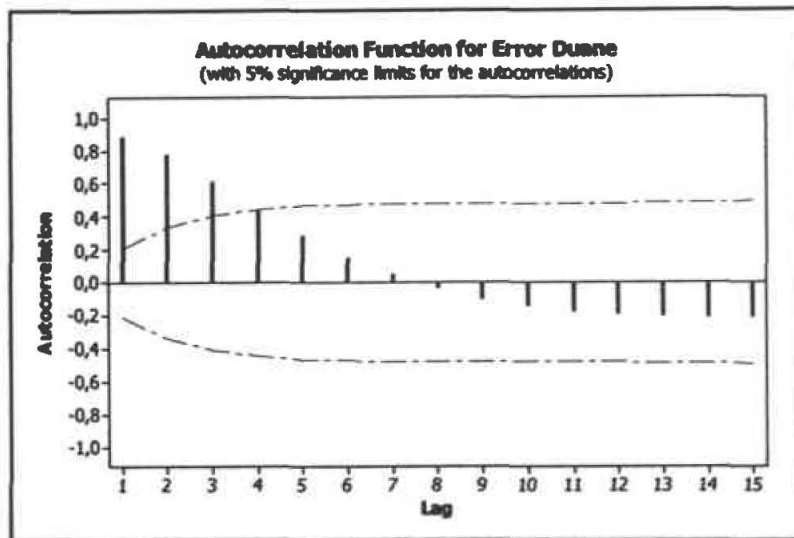
Predictor	Coef	SE Coef	T	P
$\ln b$	6,61051	0,00524	1261,47	0,000
$\ln T$	1,03686	0,00143	722,65	0,000



Gambar C.5 Plot $\hat{Y}_T$ Duane, Y_T versus T dengan data pada kasus 2



Gambar C.6 Normality test untuk Error Duane dengan Data pada kasus 2



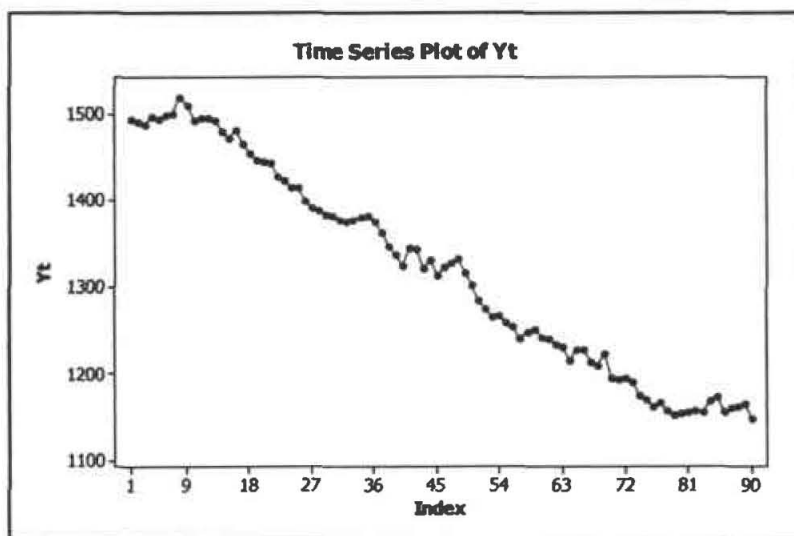
Gambar C.7 ACF (Auto Correlation Function) untuk Error Dune dengan Data pada kasus 2

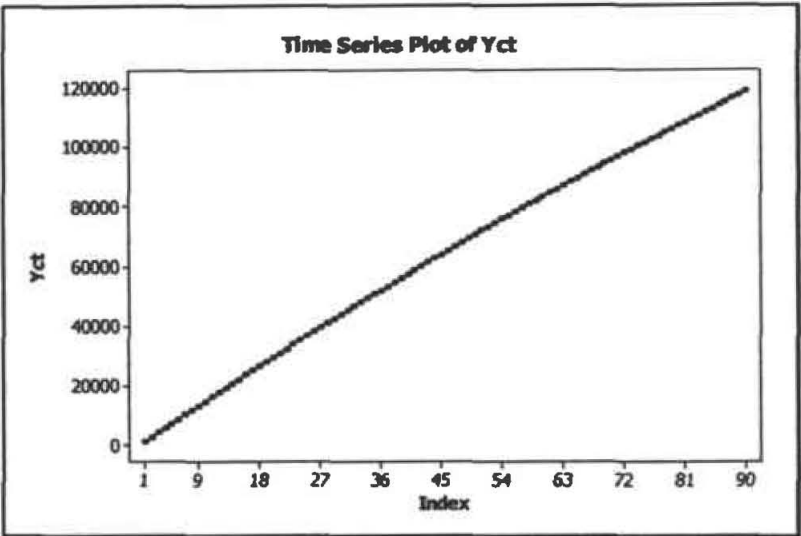
Tabel C.6 Hasil Perhitungan Data untuk kasus 3

t	Y_t	Y_{Ct}	t	Y_t	Y_{Ct}
1	1495	1495	46	1323	65429
2	1492	2987	47	1329	66758
3	1489	4476	48	1333	68091
4	1498	5974	49	1317	69408
5	1495	7469	50	1303	70711
6	1499	8968	51	1285	71996
7	1501	10469	52	1276	73272
8	1520	11989	53	1266	74538
9	1510	13499	54	1268	75806
10	1493	14992	55	1261	77067
11	1497	16489	56	1256	78323
12	1496	17985	57	1242	79565
13	1494	19479	58	1250	80815
14	1481	20960	59	1252	82067
15	1473	22433	60	1243	83310
16	1482	23915	61	1242	84552
17	1467	25382	62	1235	85787
18	1455	26837	63	1232	87019
19	1448	28285	64	1216	88235
20	1446	29731	65	1229	89464
21	1444	31175	66	1229	90693
22	1428	32603	67	1215	91908
23	1424	34027	68	1210	93118
24	1415	35442	69	1224	94342
25	1415	36857	70	1195	95537
26	1400	38257	71	1194	96731
27	1392	39649	72	1195	97926

Lanjutan Tabel C.6 Hasil Perhitungan Data untuk kasus 3

t	Y_t	Y_{C_t}	t	Y_t	Y_{C_t}
28	1388	41037	73	1191	99117
29	1384	42421	74	1175	100292
30	1383	43804	75	1170	101462
31	1378	45182	76	1163	102625
32	1376	46558	77	1167	103792
33	1377	47935	78	1158	104950
34	1380	49315	79	1153	106103
35	1383	50698	80	1155	107258
36	1376	52074	81	1156	108414
37	1363	53437	82	1158	109572
38	1347	54784	83	1156	110728
39	1338	56122	84	1168	111896
40	1326	57448	85	1174	113070
41	1346	58794	86	1156	114226
42	1344	60138	87	1160	115386
43	1322	61460	88	1163	116549
44	1332	62792	89	1166	117715
45	1314	64106	90	1148	118863

Gambar C.8 Plot Y_t versus T dengan Data pada kasus 3



Gambar C.9 Plot Y_{ct} versus T dengan Data pada kasus 3

Tabel C.7 Data Hasil Perhitungan untuk Transformasi $\ln$ dan $\hat{Y}^{c_T}$ dengan Data pada kasus 3

t	Y_t	Y_{ct}	$\ln t$	$\ln Y_{ct}$	$\hat{Y}_{ct}$	$\hat{Y}_t$
1	1495	1495	0,000000	7,309881	1619,71	*
2	1492	1497	0,693147	8,002025	3150,838	1531,12789
3	1489	1500	1,098612	8,406485	4650,222	1499,383913
4	1498	1504	1,386294	8,695172	6129,356	1479,134321
5	1495	1509	1,609438	8,918516	7593,613	1464,25701
6	1499	1515	1,791759	9,101418	9046,122	1452,509353
7	1501	1522	1,945910	9,256174	10488,93	1442,81222
8	1520	1530	2,079442	9,391745	11923,5	1434,562411
9	1510	1539	2,197225	9,510371	13350,89	1427,388422
10	1493	1549	2,302585	9,615272	14771,93	1421,045228
11	1497	1560	2,397895	9,710449	16187,29	1415,362736
12	1496	1572	2,484907	9,797293	17597,51	1410,21808
13	1494	1585	2,564949	9,877092	19003,03	1405,519632
14	1481	1599	2,639057	9,950371	20404,23	1401,197256
15	1473	1614	2,708050	10,018288	21801,42	1397,196079
16	1482	1630	2,772589	10,082261	23194,9	1393,472373
17	1467	1647	2,833213	10,141796	24584,89	1389,990732
18	1455	1665	2,890372	10,197537	25971,61	1386,722088
19	1448	1684	2,944439	10,250087	27355,25	1383,64229
20	1446	1704	2,995732	10,299946	28735,98	1380,731052
21	1444	1725	3,044522	10,347372	30113,95	1377,971177
22	1428	1747	3,091042	10,392160	31489,3	1375,347958
23	1424	1770	3,135494	10,434910	32862,15	1372,84872
24	1415	1794	3,178054	10,475653	34232,61	1370,462465
25	1415	1819	3,218876	10,514801	35600,79	1368,17959
26	1400	1845	3,258097	10,552082	36966,78	1365,991658
27	1392	1872	3,295837	10,587821	38330,68	1363,89122

Lanjutan Tabel C.7 Data Hasil Perhitungan untuk Transformasi $\ln$ dan Y^{AC_T} dengan Data pada kasus 3

t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
28	1388	1900	3,332205	10,622229	39692,55	1361,871666
29	1384	1929	3,367296	10,655399	41052,47	1359,927102
30	1383	1959	3,401197	10,687480	42410,53	1358,052255
31	1378	1990	3,433987	10,718454	43766,77	1356,242384
32	1376	2022	3,465736	10,748454	45121,26	1354,493213
33	1377	2055	3,496508	10,777601	46474,06	1352,800873
34	1380	2089	3,526361	10,805984	47825,23	1351,161852
35	1383	2124	3,555348	10,833642	49174,8	1349,572951
36	1376	2160	3,583519	10,860421	50522,83	1348,031249
37	1363	2197	3,610918	10,886259	51869,36	1346,534072
38	1347	2235	3,637586	10,911153	53214,44	1345,078965
39	1338	2274	3,663562	10,935283	54558,11	1343,663671
40	1326	2314	3,688879	10,958635	55900,39	1342,286107
41	1346	2355	3,713572	10,981795	57241,34	1340,94435
42	1344	2397	3,737670	11,004397	58580,97	1339,636617
43	1322	2440	3,761200	11,026142	59919,33	1338,361257
44	1332	2484	3,784190	11,047583	61256,45	1337,116734
45	1314	2529	3,806662	11,068293	62592,35	1335,901619
46	1323	2575	3,828641	11,088721	63927,07	1334,714579
47	1329	2622	3,850148	11,108829	65260,62	1333,554369
48	1333	2670	3,871201	11,128600	66593,04	1332,419825
49	1317	2719	3,891820	11,147757	67924,35	1331,309856
50	1303	2769	3,912023	11,166356	69254,57	1330,223439
51	1285	2820	3,931826	11,184366	70583,73	1329,159613
52	1276	2872	3,951244	11,201934	71911,85	1328,117475
53	1266	2925	3,970292	11,219064	73238,95	1327,096175
54	1268	2979	3,988984	11,235933	74565,04	1326,094911
55	1261	3034	4,007333	11,252430	75890,16	1325,112925
56	1256	3090	4,025352	11,268597	77214,31	1324,149502
57	1242	3147	4,043051	11,284330	78537,51	1323,203968
58	1250	3205	4,060443	11,299918	79859,79	1322,275681
59	1252	3264	4,077537	11,315291	81181,15	1321,364035
60	1243	3324	4,094345	11,330324	82501,62	1320,468455
61	1242	3385	4,110874	11,345122	83821,21	1319,588394
62	1235	3447	4,127134	11,359623	85139,93	1318,723334
63	1232	3510	4,143135	11,373882	86457,8	1317,872782
64	1216	3574	4,158883	11,387759	87774,84	1317,036267
65	1229	3639	4,174387	11,401592	89091,05	1316,213342
66	1229	3705	4,189655	11,415235	90406,46	1315,403582
67	1215	3772	4,204693	11,428543	91721,06	1314,606578
68	1210	3840	4,219508	11,441623	93034,88	1313,821942
69	1224	3909	4,234107	11,454682	94347,93	1313,049305
70	1195	3979	4,248495	11,467269	95660,22	1312,28831
71	1194	4050	4,262680	11,479689	96971,76	1311,53862
72	1195	4122	4,276666	11,491967	98282,56	1310,799908

Lanjutan Tabel C.7 Data Hasil Perhitungan untuk Transformasi ln dan Y^{c_T} dengan Data pada kasus 3

t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
73	1191	4195	4,290459	11,504056	99592,63	1310,071864
74	1175	4269	4,304065	11,515841	100902	1309,35419
75	1170	4344	4,317488	11,527440	102210,6	1308,6466
76	1163	4420	4,330733	11,538837	103518,6	1307,94882
77	1167	4497	4,343805	11,550144	104825,8	1307,260587
78	1158	4575	4,356709	11,561239	106132,4	1306,581648
79	1153	4654	4,369448	11,572166	107438,3	1305,911759
80	1155	4734	4,382027	11,582992	108743,6	1305,250687
81	1156	4815	4,394449	11,593713	110048,2	1304,598208
82	1158	4897	4,406719	11,604337	111352,1	1303,954104
83	1156	4980	4,418841	11,614832	112655,5	1303,318168
84	1168	5064	4,430817	11,625325	113958,1	1302,690198
85	1174	5149	4,442651	11,635762	115260,2	1302,070003
86	1156	5235	4,454347	11,645934	116561,7	1301,457393
87	1160	5322	4,465908	11,656038	117862,5	1300,852191
88	1163	5410	4,477337	11,666067	119162,8	1300,254222
89	1166	5499	4,488636	11,676022	120462,4	1299,663319
90	1148	5589	4,499810	11,685727	121761,5	1299,079319

Tabel C.8 Hasil Regresi untuk Data pada kasus 3

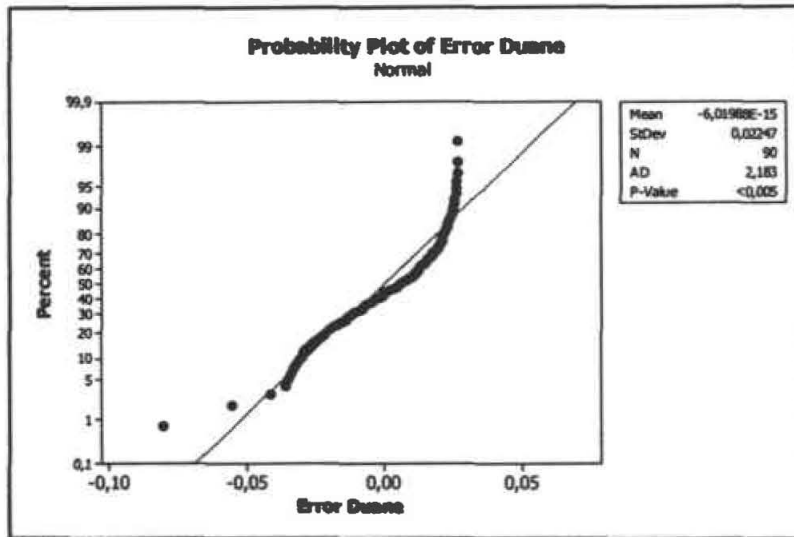
Persamaan Regresi :

$$Y_{C_T} = 7,39 + 0,962 \ln T$$

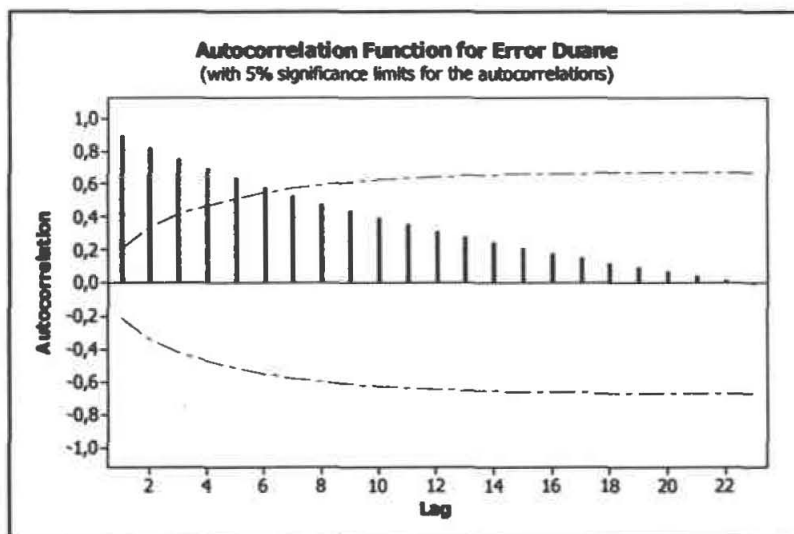
Predictor	Coef	SE Coef	T	P
$\ln b$	7,391	0,00948	779,92	0,000
$\ln T$	0,9625	0,0026	370,94	0,000



Gambar C.10 Plot $\hat{Y}_T$ Duane , Y_T versus T dengan data pada kasus 3



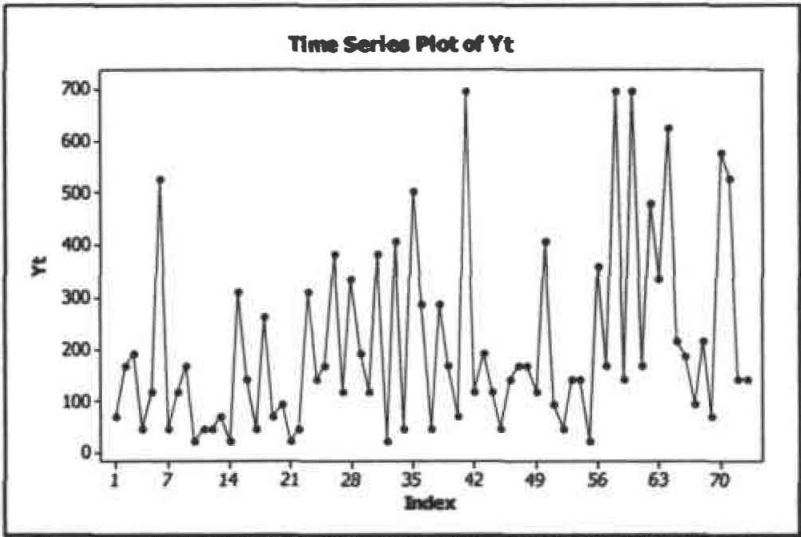
Gambar C.11 Normality test untuk Error Duane dengan Data pada kasus 3



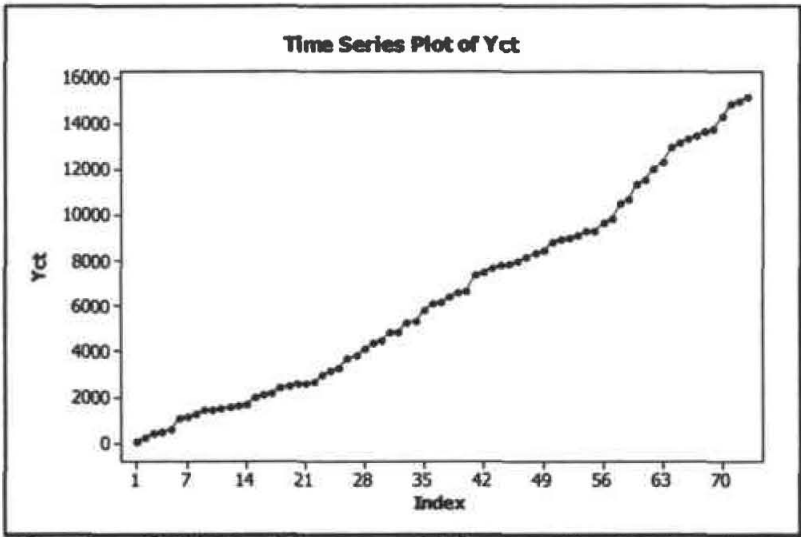
Gambar C.12 ACF (Auto Correlation Function) untuk Error Dune dengan Data pada kasus 3

Tabel C.9 Hasil Perhitungan Data Sekunder

t	Y _t	Y _{Ct}	t	Y _t	Y _{Ct}
1	72	72	38	288	6456
2	168	240	39	168	6624
3	192	432	40	72	6696
4	48	480	41	696	7392
5	120	600	42	120	7512
6	528	1128	43	192	7704
7	48	1176	44	120	7824
8	120	1296	45	48	7872
9	168	1464	46	144	8016
10	24	1488	47	168	8184
11	48	1536	48	168	8352
12	48	1584	49	120	8472
13	72	1656	50	408	8880
14	24	1680	51	96	8976
15	312	1992	52	48	9024
16	144	2136	53	144	9168
17	48	2184	54	144	9312
18	264	2448	55	24	9336
19	72	2520	56	360	9696
20	96	2616	57	168	9864
21	24	2640	58	696	10560
22	48	2688	59	144	10704
23	312	3000	60	696	11400
24	144	3144	61	168	11568
25	168	3312	62	480	12048
26	384	3696	63	336	12384
27	120	3816	64	624	13008
28	336	4152	65	216	13224
29	192	4344	66	187	13411
30	120	4464	67	96	13507
31	384	4848	68	216	13723
32	24	4872	69	72	13795
33	408	5280	70	576	14371
34	48	5328	71	528	14899
35	504	5832	72	144	15043
36	288	6120	73	144	15187
37	48	6168			



Gambar C.13 Plot Y_t versus T dengan Data Sekunder



Gambar C.14 Plot Y_{ct} versus T dengan Data Sekunder

Tabel C.10 Data Hasil Perhitungan untuk Transformasi $\ln$ dan $\hat{Y}^{c_t}$ dengan Data Sekunder

t	Y_t	Y_{ct}	$\ln t$	$\ln Y_{ct}$	$\hat{Y}^c_t$	$\hat{Y}_t$
1	72	72	0	4,276666	97,76	*
2	168	240	0,693147	5,480639	218,452	120,692
3	192	432	1,098612	6,068426	349,6406	131,1886
4	48	480	1,386294	6,173786	488,1472	138,5066
5	120	600	1,609438	6,39693	632,3629	144,2157
6	528	1128	1,791759	7,028201	781,2979	148,935
7	48	1176	1,94591	7,069874	934,2754	152,9775
8	120	1296	2,079442	7,167038	1090,801	156,5257
9	168	1464	2,197225	7,288928	1250,497	159,6954

Lanjutan Tabel C.11 Data Hasil Perhitungan untuk Transformasi $\ln$ dan $Y^{\wedge}c_T$ dengan Data Sekunder

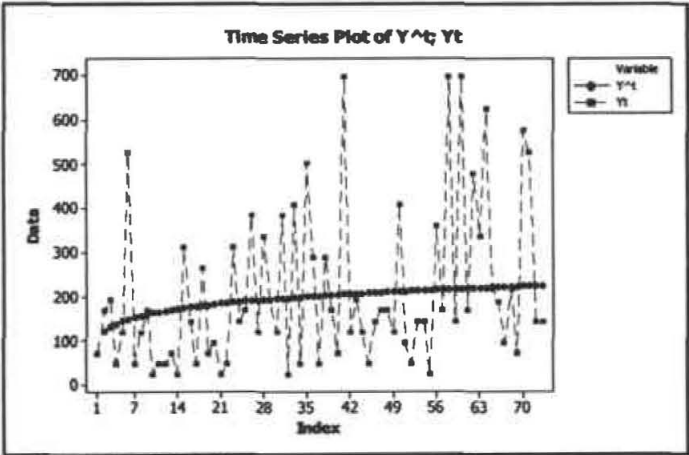
t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
10	24	1488	2,302585	7,305188	1413,062	162,5654
11	48	1536	2,397895	7,336937	1578,253	165,1914
12	48	1584	2,484907	7,367709	1745,868	167,6148
13	72	1656	2,564949	7,41216	1915,735	169,8671
14	24	1680	2,639057	7,426549	2087,708	171,9726
15	312	1992	2,70805	7,596894	2261,659	173,9508
16	144	2136	2,772589	7,66669	2437,476	175,8175
17	48	2184	2,833213	7,688913	2615,062	177,5856
18	264	2448	2,890372	7,803027	2794,327	179,2658
19	72	2520	2,944439	7,832014	2975,195	180,8671
20	96	2616	2,995732	7,869402	3157,592	182,3973
21	24	2640	3,044522	7,878534	3341,455	183,8629
22	48	2688	3,091042	7,896553	3526,724	185,2696
23	312	3000	3,135494	8,006368	3713,347	186,6223
24	144	3144	3,178054	8,053251	3901,272	187,9255
25	168	3312	3,218876	8,105308	4090,455	189,1828
26	384	3696	3,258097	8,215006	4280,853	190,3978
27	120	3816	3,295837	8,246958	4472,426	191,5733
28	336	4152	3,332205	8,331345	4665,138	192,7122
29	192	4344	3,367296	8,376551	4858,955	193,8168
30	120	4464	3,401197	8,403801	5053,844	194,8893
31	384	4848	3,433987	8,486322	5249,776	195,9316
32	24	4872	3,465736	8,49126	5446,721	196,9457
33	408	5280	3,496508	8,571681	5644,654	197,933
34	48	5328	3,526361	8,580731	5843,55	198,8951
35	504	5832	3,555348	8,671115	6043,383	199,8335
36	288	6120	3,583519	8,719317	6244,132	200,7492
37	48	6168	3,610918	8,72713	6445,776	201,6435
38	288	6456	3,637586	8,772765	6648,293	202,5175
39	168	6624	3,663562	8,798455	6851,665	203,372
40	72	6696	3,688879	8,809266	7055,873	204,2082
41	696	7392	3,713572	8,908154	7260,9	205,0267
42	120	7512	3,73767	8,924257	7466,729	205,8285
43	192	7704	3,7612	8,949495	7673,343	206,6142
44	120	7824	3,78419	8,964951	7880,727	207,3844
45	48	7872	3,806662	8,971067	8088,867	208,14
46	144	8016	3,828641	8,989195	8297,749	208,8814
47	168	8184	3,850148	9,009936	8507,358	209,6093
48	168	8352	3,871201	9,030256	8717,682	210,3241
49	120	8472	3,89182	9,044522	8928,709	211,0264
50	408	8880	3,912023	9,091557	9140,425	211,7167
51	96	8976	3,931826	9,10231	9352,82	212,3953
52	48	9024	3,951244	9,107643	9565,883	213,0627
53	144	9168	3,970292	9,123474	9779,602	213,7193
54	144	9312	3,988984	9,139059	9993,968	214,3655

Lanjutan Tabel C.11 Data Hasil Perhitungan untuk Transformasi ln dan $\hat{Y}^{c_T}$ dengan Data Sekunder

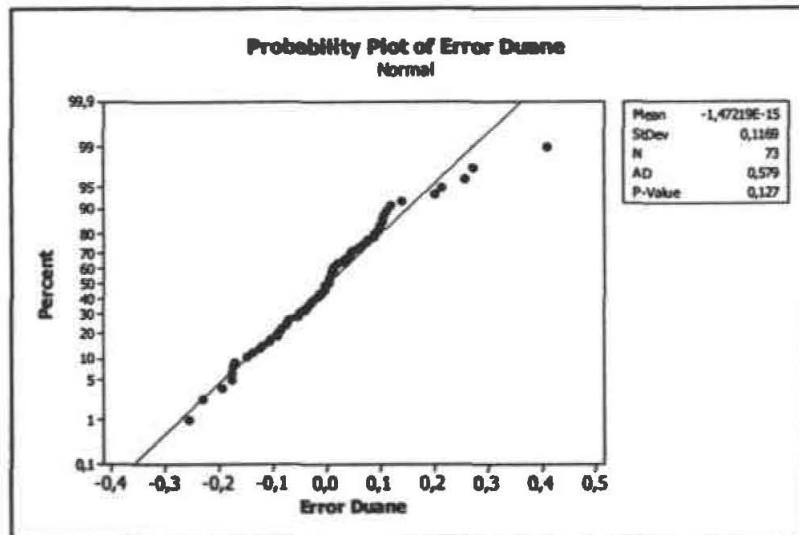
t	Y_t	Y_{C_t}	$\ln t$	$\ln Y_{C_t}$	$\hat{Y}_{C_t}$	$\hat{Y}_t$
55	24	9336	4,007333	9,141633	10208,97	215,0017
56	360	9696	4,025352	9,179469	10424,6	215,6281
57	168	9864	4,043051	9,196647	10640,84	216,245
58	696	10560	4,060443	9,264829	10857,7	216,8529
59	144	10704	4,077537	9,278373	11075,15	217,452
60	696	11400	4,094345	9,341369	11293,19	218,0425
61	168	11568	4,110874	9,355998	11511,81	218,6248
62	480	12048	4,127134	9,396654	11731,01	219,199
63	336	12384	4,143135	9,424161	11950,78	219,7654
64	624	13008	4,158883	9,47332	12171,1	220,3243
65	216	13224	4,174387	9,489789	12391,98	220,8758
66	187	13411	4,189655	9,503831	12613,4	221,4202
67	96	13507	4,204693	9,510963	12835,36	221,9576
68	216	13723	4,219508	9,526829	13057,85	222,4883
69	72	13795	4,234107	9,532061	13280,86	223,0125
70	576	14371	4,248495	9,572968	13504,39	223,5302
71	528	14899	4,26268	9,609049	13728,43	224,0417
72	144	15043	4,276666	9,618668	13952,98	224,5472
73	144	15187	4,290459	9,628195	14178,02	225,0468

Tabel C.12 Hasil Regresi untuk Data Sekunder

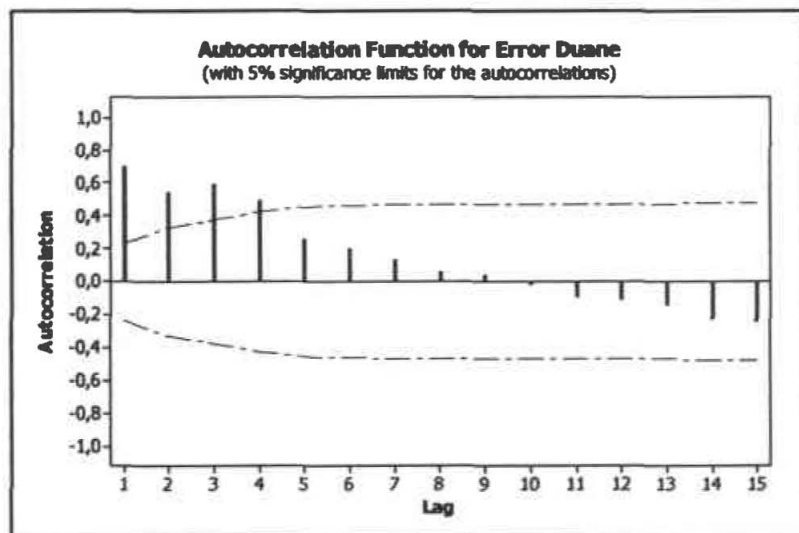
Persamaan Regresi :				
$\hat{Y}_{C_T} = 4,53 + 1,16 \ln T$				
Predictor	Coef	SE Coef	T	P
$\ln b$	4,53389	0,05253	86,31	0,000
$\ln T$	1,1626	0,01521	76,43	0,000



Gambar C.15 Plot Y_T Duane , Y_T versus T dengan data sekunder



Gambar C.16 Normality test untuk Error Duane dengan Data Sekunder



Gambar C.17 ACF (Auto Correlation Function) untuk Error Dune dengan Data Sekunder

LAMPIRAN D

Tabel D.1 Hasil Perhitungan *Error* validasi Model ARIMA untuk data Sekunder

t	Y_t	$\hat{Y}_t$ ARIMA	<i>Error</i> ARIMA
74	120	131,0226	-11,0226
75	576	129,3019	446,6981
76	192	143,6802	48,3198
77	72	143,6802	-71,6802
78	168	143,6802	24,3198
79	24	143,6802	-119,6802
80	48	143,6802	-95,6802
81	144	143,6802	0,3198
82	48	143,6802	-95,6802

Tabel D.2 Hasil Perhitungan *Error* validasi Model Duane untuk data Sekunder

t	Y_t	$\hat{Y}_t$ Duane	<i>Error</i> Duane
74	120	225,5406	-105,5406
75	576	226,0288	349,9712
76	192	226,5115	-34,5115
77	72	226,9889	-154,9889
78	168	227,4611	-59,4611
79	24	227,9281	-203,9281
80	48	228,3902	-180,3902
81	144	228,8475	-84,8475
82	48	229,3000	-181,3000

Tabel D.3 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus 1

t	Y_t	$\hat{Y}_t$ ARIMA	<i>Error</i> ARIMA	t	Y_t	$\hat{Y}_t$ ARIMA	<i>Error</i> ARIMA
1	460	492,876	-32,876	46	472	516,748	-44,748
2	533	519,151	13,849	47	519	526,095	-7,095
3	483	491,818	-8,818	48	531	504,07	26,93
4	523	505,078	17,922	49	472	484,167	-12,167
5	519	489,436	29,564	50	496	507,037	-11,037
6	467	482,626	-15,626	51	523	506,376	16,624
7	536	509,06	26,94	52	506	490,195	15,805
8	477	484,161	-7,161	53	496	490,674	5,326
9	497	504,108	-7,108	54	513	496,804	16,196

Lanjutan Tabel D.3 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus 1

t	Y_t	$\hat{Y}_t$ ARIMA	Error ARIMA	t	Y_t	$\hat{Y}_t$ ARIMA	Error ARIMA
10	544	504,078	39,922	55	488	490,446	-2,446
11	493	476,567	16,433	56	499	501,35	-2,35
12	491	490,307	0,693	57	490	501,294	-11,294
13	496	499,514	-3,514	58	516	506,526	9,474
14	524	501,975	22,025	59	466	494,378	-28,378
15	475	487,036	-12,036	60	514	516,519	-2,519
16	525	506,96	18,04	61	504	501,393	2,607
17	499	489,367	9,633	62	508	498,395	9,605
18	485	494,285	-9,285	63	537	494,301	42,699
19	514	505,351	8,649	64	469	474,942	-5,942
20	533	494,86	38,14	65	525	503,396	21,604
21	465	477,609	-12,609	66	500	487,282	12,718
22	504	507,296	-3,296	67	493	492,48	0,52
23	507	501,847	5,153	68	526	499,615	26,385
24	495	496,906	-1,906	69	482	484,486	-2,486
25	484	501,034	-17,034	70	510	501,374	8,626
26	470	509,884	-39,884	71	485	494,874	-9,874
27	521	523,25	-2,25	72	507	505,695	1,305
28	531	501,236	29,764	73	521	499,156	21,844
29	458	482,509	-24,509	74	492	487,142	4,858
30	494	514,256	-20,256	75	473	497,078	-24,078
31	504	511,769	-7,769	76	529	514,004	14,996
32	494	504,464	-10,464	77	494	491,148	2,852
33	484	506,041	-22,041	78	479	498,251	-19,251
34	481	512,812	-31,812	79	510	511,181	-1,181
35	530	518,529	11,471	80	495	500,61	-5,61
36	516	493,209	22,791	81	512	503,201	8,799
37	468	486,588	-18,588	82	497	494,773	2,227
38	553	510,793	42,207	83	473	498,617	-25,617
39	468	475,23	-7,23	84	500	514,904	-14,904
40	533	504,149	28,851	85	518	508,638	9,362
41	471	483,043	-12,043	86	482	494,443	-12,443
42	472	506,964	-34,964	87	487	507,198	-20,198
43	514	520,372	-6,372	88	521	511,735	9,265
44	521	503,647	17,353	89	488	494,5	-6,5
45	461	489,769	-28,769	90	470	503,722	-33,722

Tabel D.4 Hasil Perhitungan Error permodelan Model ARIMA untuk kasus 2

t	Y_t	$\hat{Y}_t$ ARIMA	Error ARIMA	t	Y_t	$\hat{Y}_t$ ARIMA	Error ARIMA
1	774	774	0	46	837	824,485	12,515
2	789	775,078	13,922	47	850	842,094	7,906
3	822	791,372	30,628	48	821	845,71	-24,71
4	798	817,978	-19,978	49	843	817,515	25,485
5	765	789,152	-24,152	50	871	850,775	20,225
6	760	771,435	-11,435	51	899	865,102	33,898
7	753	768,848	-15,848	52	915	891,493	23,507
8	774	754,341	19,659	53	923	907,493	15,507
9	807	775,877	31,123	54	912	918,71	-6,71
10	796	801,37	-5,37	55	931	909,855	21,145
11	808	787,152	20,848	56	926	933,949	-7,949
12	835	810,949	24,051	57	932	920,906	11,094
13	861	831,783	29,217	58	913	933,341	-20,341
14	873	853,761	19,239	59	890	911,391	-21,391
15	870	866,029	3,971	60	886	895,094	-9,094
16	879	866,783	12,217	61	898	892,167	5,833
17	899	879,804	19,196	62	929	899,072	29,928
18	874	896,587	-22,587	63	951	925,783	25,217
19	880	868,638	11,362	64	919	942,689	-23,689
20	911	886,703	24,297	65	960	913,102	46,898
21	911	909,391	1,609	66	956	968,58	-12,58
22	904	902,689	1,311	67	951	945,007	5,993
23	906	904	2	68	914	952,072	-38,072
24	896	907,877	-11,877	69	928	915,341	12,659
25	868	895,464	-27,464	70	940	937,92	2,08
26	865	870,681	-5,681	71	902	936,246	-34,246
27	878	872,507	5,493	72	912	898,783	13,217
28	822	878,804	-56,804	73	891	922,188	-31,188
29	898	818,515	79,485	74	827	888,319	-61,319
30	918	913,014	4,986	75	781	832,63	-51,63
31	909	897,623	11,377	76	807	798,159	8,841
32	938	903,638	34,362	77	870	819,333	50,667
33	927	940,413	-13,413	78	837	863,029	-26,029
34	915	919,225	-4,225	79	780	820,109	-40,109
35	860	917,949	-57,949	80	782	788,848	-6,848
36	886	863,217	22,783	81	794	797,282	-3,282
37	925	900,746	24,254	82	799	793,464	5,536
38	915	918,029	-3,029	83	805	795,783	9,217
39	875	904,544	-29,544	84	809	803,659	5,341
40	872	877,681	-5,681	85	823	807,391	15,609
41	843	882,724	-39,724	86	819	821,928	-2,928

Lanjutan Tabel D.4 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus 2

t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA	t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA
42	843	843,804	-0,804	87	801	815,246	-14,246
43	853	850,775	2,225	88	815	802,072	12,928
44	840	853	-13	89	798	819,826	-21,826
45	821	837,319	-16,319	90	801	794,246	6,754

Tabel D.5 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus 3

t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA	t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA
1	1495	*	*	46	1323	1310,11	12,89
2	1492	1491,11	0,89	47	1329	1319,11	9,89
3	1489	1488,11	0,89	48	1333	1325,11	7,89
4	1498	1485,11	12,89	49	1317	1329,11	-12,11
5	1495	1494,11	0,89	50	1303	1313,11	-10,11
6	1499	1491,11	7,89	51	1285	1299,11	-14,11
7	1501	1495,11	5,89	52	1276	1281,11	-5,11
8	1520	1497,11	22,89	53	1266	1272,11	-6,11
9	1510	1516,11	-6,11	54	1268	1262,11	5,89
10	1493	1506,11	-13,11	55	1261	1264,11	-3,11
11	1497	1489,11	7,89	56	1256	1257,11	-1,11
12	1496	1493,11	2,89	57	1242	1252,11	-10,11
13	1494	1492,11	1,89	58	1250	1238,11	11,89
14	1481	1490,11	-9,11	59	1252	1246,11	5,89
15	1473	1477,11	-4,11	60	1243	1248,11	-5,11
16	1482	1469,11	12,89	61	1242	1239,11	2,89
17	1467	1478,11	-11,11	62	1235	1238,11	-3,11
18	1455	1463,11	-8,11	63	1232	1231,11	0,89
19	1448	1451,11	-3,11	64	1216	1228,11	-12,11
20	1446	1444,11	1,89	65	1229	1212,11	16,89
21	1444	1442,11	1,89	66	1229	1225,11	3,89
22	1428	1440,11	-12,11	67	1215	1225,11	-10,11
23	1424	1424,11	-0,11	68	1210	1211,11	-1,11
24	1415	1420,11	-5,11	69	1224	1206,11	17,89
25	1415	1411,11	3,89	70	1195	1220,11	-25,11
26	1400	1411,11	-11,11	71	1194	1191,11	2,89
27	1392	1396,11	-4,11	72	1195	1190,11	4,89
28	1388	1388,11	-0,11	73	1191	1191,11	-0,11
29	1384	1384,11	-0,11	74	1175	1187,11	-12,11
30	1383	1380,11	2,89	75	1170	1171,11	-1,11
31	1378	1379,11	-1,11	76	1163	1166,11	-3,11

Lanjutan Tabel D.5 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus 3

t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA	t	Y_t	$\hat{Y}_t, ARIMA$	Error ARIMA
32	1376	1374,11	1,89	77	1167	1159,11	7,89
33	1377	1372,11	4,89	78	1158	1163,11	-5,11
34	1380	1373,11	6,89	79	1153	1154,11	-1,11
35	1383	1376,11	6,89	80	1155	1149,11	5,89
36	1376	1379,11	-3,11	81	1156	1151,11	4,89
37	1363	1372,11	-9,11	82	1158	1152,11	5,89
38	1347	1359,11	-12,11	83	1156	1154,11	1,89
39	1338	1343,11	-5,11	84	1168	1152,11	15,89
40	1326	1334,11	-8,11	85	1174	1164,11	9,89
41	1346	1322,11	23,89	86	1156	1170,11	-14,11
42	1344	1342,11	1,89	87	1160	1152,11	7,89
43	1322	1340,11	-18,11	88	1163	1156,11	6,89
44	1332	1318,11	13,89	89	1166	1159,11	6,89
45	1314	1328,11	-14,11	90	1148	1162,11	-14,11

Tabel D.6 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 1

t	Y_t	$\hat{Y}_t, Duane$	Error Duane	t	Y_t	$\hat{Y}_t, Duane$	Error Duane
1	460	*	*	46	472	492,75	-20,75
2	533	492,75	40,25	47	519	492,75	26,25
3	483	492,75	-9,75	48	531	492,75	38,25
4	523	492,75	30,25	49	472	492,75	-20,75
5	519	492,75	26,25	50	496	492,75	3,25
6	467	492,75	-25,75	51	523	492,75	30,25
7	536	492,75	43,25	52	506	492,75	13,25
8	477	492,75	-15,75	53	496	492,75	3,25
9	497	492,75	4,25	54	513	492,75	20,25
10	544	492,75	51,25	55	488	492,75	-4,75
11	493	492,75	0,25	56	499	492,75	6,25
12	491	492,75	-1,75	57	490	492,75	-2,75
13	496	492,75	3,25	58	516	492,75	23,25
14	524	492,75	31,25	59	466	492,75	-26,75
15	475	492,75	-17,75	60	514	492,75	21,25
16	525	492,75	32,25	61	504	492,75	11,25
17	499	492,75	6,25	62	508	492,75	15,25
18	485	492,75	-7,75	63	537	492,75	44,25
19	514	492,75	21,25	64	469	492,75	-23,75
20	533	492,75	40,25	65	525	492,75	32,25
21	465	492,75	-27,75	66	500	492,75	7,25
22	504	492,75	11,25	67	493	492,75	0,25

Lanjutan Tabel D.6 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 1

t	Y_t	$\hat{Y}_t$, Duane	Error Duane	t	Y_t	$\hat{Y}_t$, Duane	Error Duane
23	507	492,75	14,25	68	526	492,75	33,25
24	495	492,75	2,25	69	482	492,75	-10,75
25	484	492,75	-8,75	70	510	492,75	17,25
26	470	492,75	-22,75	71	485	492,75	-7,75
27	521	492,75	28,25	72	507	492,75	14,25
28	531	492,75	38,25	73	521	492,75	28,25
29	458	492,75	-34,75	74	492	492,75	-0,75
30	494	492,75	1,25	75	473	492,75	-19,75
31	504	492,75	11,25	76	529	492,75	36,25
32	494	492,75	1,25	77	494	492,75	1,25
33	484	492,75	-8,75	78	479	492,75	-13,75
34	481	492,75	-11,75	79	510	492,75	17,25
35	530	492,75	37,25	80	495	492,75	2,25
36	516	492,75	23,25	81	512	492,75	19,25
37	468	492,75	-24,75	82	497	492,75	4,25
38	553	492,75	60,25	83	473	492,75	-19,75
39	468	492,75	-24,75	84	500	492,75	7,25
40	533	492,75	40,25	85	518	492,75	25,25
41	471	492,75	-21,75	86	482	492,75	-10,75
42	472	492,75	-20,75	87	487	492,75	-5,75
43	514	492,75	21,25	88	521	492,75	28,25
44	521	492,75	28,25	89	488	492,75	-4,75
45	461	492,75	-31,75	90	470	492,75	-22,75

Tabel D.7 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 2

t	Y_t	$\hat{Y}_t$, Duane	Error Duane	t	Y_t	$\hat{Y}_t$, Duane	Error Duane
1	774	*	*	46	837	899,577	-62,577
2	789	784,228	4,772	47	850	900,359	-50,359
3	822	800,798	21,202	48	821	901,126	-80,126
4	798	811,753	-13,753	49	843	901,877	-58,877
5	765	819,997	-54,997	50	871	902,614	-31,614
6	760	826,627	-66,627	51	899	903,336	-4,336
7	753	832,182	-79,182	52	915	904,045	10,955
8	774	836,967	-62,967	53	923	904,741	18,259
9	807	841,173	-34,173	54	912	905,424	6,576
10	796	844,927	-48,927	55	931	906,095	24,905
11	808	848,319	-40,319	56	926	906,754	19,246
12	835	851,414	-16,414	57	932	907,402	24,598
13	861	854,260	6,740	58	913	908,039	4,961

Lanjutan Tabel D.7 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 2

t	Y_t	$\hat{Y}_t$, Duane	Error Duane	t	Y_t	$\hat{Y}_t$, Duane	Error Duane
14	873	856,895	16,105	59	890	908,666	-18,666
15	870	859,349	10,651	60	886	909,282	-23,282
16	879	861,645	17,355	61	898	909,888	-11,888
17	899	863,803	35,197	62	929	910,485	18,515
18	874	865,839	8,161	63	951	911,073	39,927
19	880	867,767	12,233	64	919	911,652	7,348
20	911	869,596	41,404	65	960	912,222	47,778
21	911	871,338	39,662	66	956	912,783	43,217
22	904	873,000	31,000	67	951	913,336	37,664
23	906	874,589	31,411	68	914	913,882	0,118
24	896	876,112	19,888	69	928	914,420	13,580
25	868	877,574	-9,574	70	940	914,950	25,050
26	865	878,979	-13,979	71	902	915,473	-13,473
27	878	880,333	-2,333	72	912	915,989	-3,989
28	822	881,638	-59,638	73	891	916,498	-25,498
29	898	882,899	15,101	74	827	917,000	-90,000
30	918	884,118	33,882	75	781	917,496	-136,496
31	909	885,298	23,702	76	807	917,986	-110,986
32	938	886,441	51,559	77	870	918,469	-48,469
33	927	887,550	39,450	78	837	918,946	-81,946
34	915	888,627	26,373	79	780	919,418	-139,418
35	860	889,673	-29,673	80	782	919,883	-137,883
36	886	890,690	-4,690	81	794	920,343	-126,343
37	925	891,681	33,319	82	799	920,798	-121,798
38	915	892,645	22,355	83	805	921,247	-116,247
39	875	893,585	-18,585	84	809	921,691	-112,691
40	872	894,502	-22,502	85	823	922,130	-99,130
41	843	895,397	-52,397	86	819	922,564	-103,564
42	843	896,272	-53,272	87	801	922,994	-121,994
43	853	897,126	-44,126	88	815	923,418	-108,418
44	840	897,961	-57,961	89	798	923,838	-125,838
45	821	898,777	-77,777	90	801	924,253	-123,253

Tabel D.8 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 3

t	Y_t	$\hat{Y}_t$, Duane	Error Duane	t	Y_t	$\hat{Y}_t$, Duane	Error Duane
1	1495	*	*	46	1323	1334,715	-11,715
2	1492	1531,128	-39,128	47	1329	1333,554	-4,554
3	1489	1499,384	-10,384	48	1333	1332,420	0,580
4	1498	1479,134	18,866	49	1317	1331,310	-14,310
5	1495	1464,257	30,743	50	1303	1330,223	-27,223

Lanjutan Tabel D.8 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus 3

t	Y_i	$\hat{Y}_i$, Duane	Error Duane	t	Y_i	$\hat{Y}_i$, Duane	Error Duane
6	1499	1452,509	46,491	51	1285	1329,160	-44,160
7	1501	1442,812	58,188	52	1276	1328,117	-52,117
8	1520	1434,562	85,438	53	1266	1327,096	-61,096
9	1510	1427,388	82,612	54	1268	1326,095	-58,095
10	1493	1421,045	71,955	55	1261	1325,113	-64,113
11	1497	1415,363	81,637	56	1256	1324,150	-68,150
12	1496	1410,218	85,782	57	1242	1323,204	-81,204
13	1494	1405,520	88,480	58	1250	1322,276	-72,276
14	1481	1401,197	79,803	59	1252	1321,364	-69,364
15	1473	1397,196	75,804	60	1243	1320,468	-77,468
16	1482	1393,472	88,528	61	1242	1319,588	-77,588
17	1467	1389,991	77,009	62	1235	1318,723	-83,723
18	1455	1386,722	68,278	63	1232	1317,873	-85,873
19	1448	1383,642	64,358	64	1216	1317,036	-101,036
20	1446	1380,731	65,269	65	1229	1316,213	-87,213
21	1444	1377,971	66,029	66	1229	1315,404	-86,404
22	1428	1375,348	52,652	67	1215	1314,607	-99,607
23	1424	1372,849	51,151	68	1210	1313,822	-103,822
24	1415	1370,462	44,538	69	1224	1313,049	-89,049
25	1415	1368,180	46,820	70	1195	1312,288	-117,288
26	1400	1365,992	34,008	71	1194	1311,539	-117,539
27	1392	1363,891	28,109	72	1195	1310,800	-115,800
28	1388	1361,872	26,128	73	1191	1310,072	-119,072
29	1384	1359,927	24,073	74	1175	1309,354	-134,354
30	1383	1358,052	24,948	75	1170	1308,647	-138,647
31	1378	1356,242	21,758	76	1163	1307,949	-144,949
32	1376	1354,493	21,507	77	1167	1307,261	-140,261
33	1377	1352,801	24,199	78	1158	1306,582	-148,582
34	1380	1351,162	28,838	79	1153	1305,912	-152,912
35	1383	1349,573	33,427	80	1155	1305,251	-150,251
36	1376	1348,031	27,969	81	1156	1304,598	-148,598
37	1363	1346,534	16,466	82	1158	1303,954	-145,954
38	1347	1345,079	1,921	83	1156	1303,318	-147,318
39	1338	1343,664	-5,664	84	1168	1302,690	-134,690
40	1326	1342,286	-16,286	85	1174	1302,070	-128,070
41	1346	1340,944	5,056	86	1156	1301,457	-145,457
42	1344	1339,637	4,363	87	1160	1300,852	-140,852
43	1322	1338,361	-16,361	88	1163	1300,254	-137,254
44	1332	1337,117	-5,117	89	1166	1299,663	-133,663
45	1314	1335,902	-21,902	90	1148	1299,079	-151,079

Tabel D.9 Hasil Perhitungan *Error* permodelan Model ARIMA untuk kasus Riil

t	Y_t	$\hat{Y}_t$ ARIMA	Error Duane	t	Y_t	$\hat{Y}_t$ ARIMA	Error Duane
1	72	135,950	-63,950	38	288	181,608	106,392
2	168	149,472	18,528	39	168	99,077	68,923
3	192	121,024	70,976	40	72	162,728	-90,728
4	48	148,286	-100,286	41	696	165,697	530,303
5	120	162,746	-42,746	42	120	115,290	4,710
6	528	105,961	422,039	43	192	211,677	-19,677
7	48	132,334	-84,334	44	120	145,242	-25,242
8	120	221,670	-101,670	45	48	139,945	-91,945
9	168	109,268	58,732	46	144	136,463	7,537
10	24	121,743	-97,743	47	168	107,630	60,370
11	48	161,375	-113,375	48	168	145,782	22,218
12	48	92,683	-44,683	49	120	162,033	-42,033
13	72	103,568	-31,568	50	408	149,290	258,710
14	24	120,295	-96,295	51	96	132,490	-36,490
15	312	130,248	181,752	52	48	188,485	-140,485
16	144	92,982	51,018	53	144	131,711	12,289
17	48	181,897	-133,897	54	144	99,316	44,684
18	264	161,690	102,310	55	24	147,182	-123,182
19	72	100,274	-28,274	56	360	158,839	201,161
20	96	164,014	-68,014	57	168	88,054	79,946
21	24	131,389	-107,389	58	696	179,198	516,802
22	48	124,336	-76,336	59	144	171,058	-27,058
23	312	90,795	221,205	60	696	207,249	488,751
24	144	111,122	32,878	61	168	137,153	30,847
25	168	200,509	-32,509	62	480	199,268	280,732
26	384	154,095	229,905	63	336	151,769	184,231
27	120	136,979	-16,979	64	624	182,170	441,830
28	336	183,846	152,154	65	216	178,067	37,933
29	192	138,637	53,363	66	187	200,335	-13,335
30	120	169,083	-49,083	67	96	151,370	-55,370
31	384	156,885	227,115	68	216	141,032	74,968
32	24	130,977	-106,977	69	72	127,059	-55,059
33	408	182,959	225,041	70	576	161,206	414,794
34	48	90,872	-42,872	71	528	123,254	404,746
35	504	178,416	325,584	72	144	202,632	-58,632
36	288	120,938	167,062	73	144	212,804	-68,804
37	48	190,176	-142,176				

Tabel D.10 Hasil Perhitungan *Error* permodelan Model Duane untuk kasus Riil

t	Y_i	$\hat{Y}_i$, Duane	Error Duane	t	Y_i	$\hat{Y}_i$, Duane	Error Duane
1	72	*	*	38	288	202,517	85,483
2	168	120,692	47,308	39	168	203,372	-35,372
3	192	131,189	60,811	40	72	204,208	-132,208
4	48	138,507	-90,507	41	696	205,027	490,973
5	120	144,216	-24,216	42	120	205,828	-85,828
6	528	148,935	379,065	43	192	206,614	-14,614
7	48	152,978	-104,978	44	120	207,384	-87,384
8	120	156,526	-36,526	45	48	208,140	-160,140
9	168	159,695	8,305	46	144	208,881	-64,881
10	24	162,565	-138,565	47	168	209,609	-41,609
11	48	165,191	-117,191	48	168	210,324	-42,324
12	48	167,615	-119,615	49	120	211,026	-91,026
13	72	169,867	-97,867	50	408	211,717	196,283
14	24	171,973	-147,973	51	96	212,395	-116,395
15	312	173,951	138,049	52	48	213,063	-165,063
16	144	175,818	-31,818	53	144	213,719	-69,719
17	48	177,586	-129,586	54	144	214,366	-70,366
18	264	179,266	84,734	55	24	215,002	-191,002
19	72	180,867	-108,867	56	360	215,628	144,372
20	96	182,397	-86,397	57	168	216,245	-48,245
21	24	183,863	-159,863	58	696	216,853	479,147
22	48	185,270	-137,270	59	144	217,452	-73,452
23	312	186,622	125,378	60	696	218,043	477,957
24	144	187,925	-43,925	61	168	218,625	-50,625
25	168	189,183	-21,183	62	480	219,199	260,801
26	384	190,398	193,602	63	336	219,765	116,235
27	120	191,573	-71,573	64	624	220,324	403,676
28	336	192,712	143,288	65	216	220,876	-4,876
29	192	193,817	-1,817	66	187	221,420	-34,420
30	120	194,889	-74,889	67	96	221,958	-125,958
31	384	195,932	188,068	68	216	222,488	-6,488
32	24	196,946	-172,946	69	72	223,012	-151,012
33	408	197,933	210,067	70	576	223,530	352,470
34	48	198,895	-150,895	71	528	224,042	303,958
35	504	199,833	304,167	72	144	224,547	-80,547
36	288	200,749	87,251	73	144	225,047	-81,047
37	48	201,643	-153,643				