

**LAMPIRAN - LAMPIRAN**

LAMPIRAN 1

DATA PENGAMATAN AWAL

Y1	Y2	X1	X2	X3	X4
166,5100	88,7940	74,0000	1,0000	35,0000	12,0000
535,8000	126,8200	30,0000	2,0000	74,0000	36,0000
601,3175	148,3295	43,0000	3,0000	20,0000	45,0000
779,3475	167,2115	24,0000	4,0000	46,0000	56,0000
222,8675	70,2495	44,0000	5,0000	26,0000	14,0000
1120,8450	261,7030	61,0000	6,0000	48,0000	86,0000
1215,9100	261,5940	39,0000	7,0000	21,0000	93,0000
1011,0025	222,2385	43,0000	8,0000	59,0000	75,0000
1211,1700	275,8780	62,0000	9,0000	80,0000	91,0000
431,4050	96,0570	34,0000	10,0000	29,0000	29,0000
769,3425	181,1545	58,0000	11,0000	67,0000	56,0000
1122,5625	271,7025	85,0000	12,0000	88,0000	85,0000
740,0100	193,6940	85,0000	13,0000	37,0000	57,0000
280,0900	63,3960	39,0000	14,0000	23,0000	17,0000
1016,4025	244,9285	84,0000	15,0000	25,0000	79,0000
1118,6300	254,6720	72,0000	16,0000	14,0000	87,0000
427,2925	86,4345	37,0000	17,0000	82,0000	25,0000
832,6375	150,0675	18,0000	18,0000	97,0000	55,0000
1009,8150	183,9610	17,0000	19,0000	19,0000	73,0000
630,6225	168,6965	95,0000	20,0000	93,0000	45,0000
1217,2125	277,0925	86,0000	21,0000	32,0000	94,0000
273,6175	41,1995	29,0000	22,0000	49,0000	13,0000
564,6075	109,0855	43,0000	23,0000	73,0000	36,0000
566,5700	140,8980	84,0000	24,0000	23,0000	42,0000
598,6950	139,6730	77,0000	25,0000	75,0000	41,0000
508,9875	73,7875	19,0000	26,0000	77,0000	29,0000
826,5475	162,1515	52,0000	27,0000	36,0000	59,0000
833,8350	159,5290	49,0000	28,0000	17,0000	60,0000
1170,1650	254,2210	85,0000	29,0000	54,0000	88,0000
1171,0325	200,7605	20,0000	30,0000	25,0000	84,0000
<b>22974,8500</b>	<b>5075,9800</b>	<b>1588,0000</b>	<b>465,0000</b>	<b>1444,0000</b>	<b>1662,0000</b>

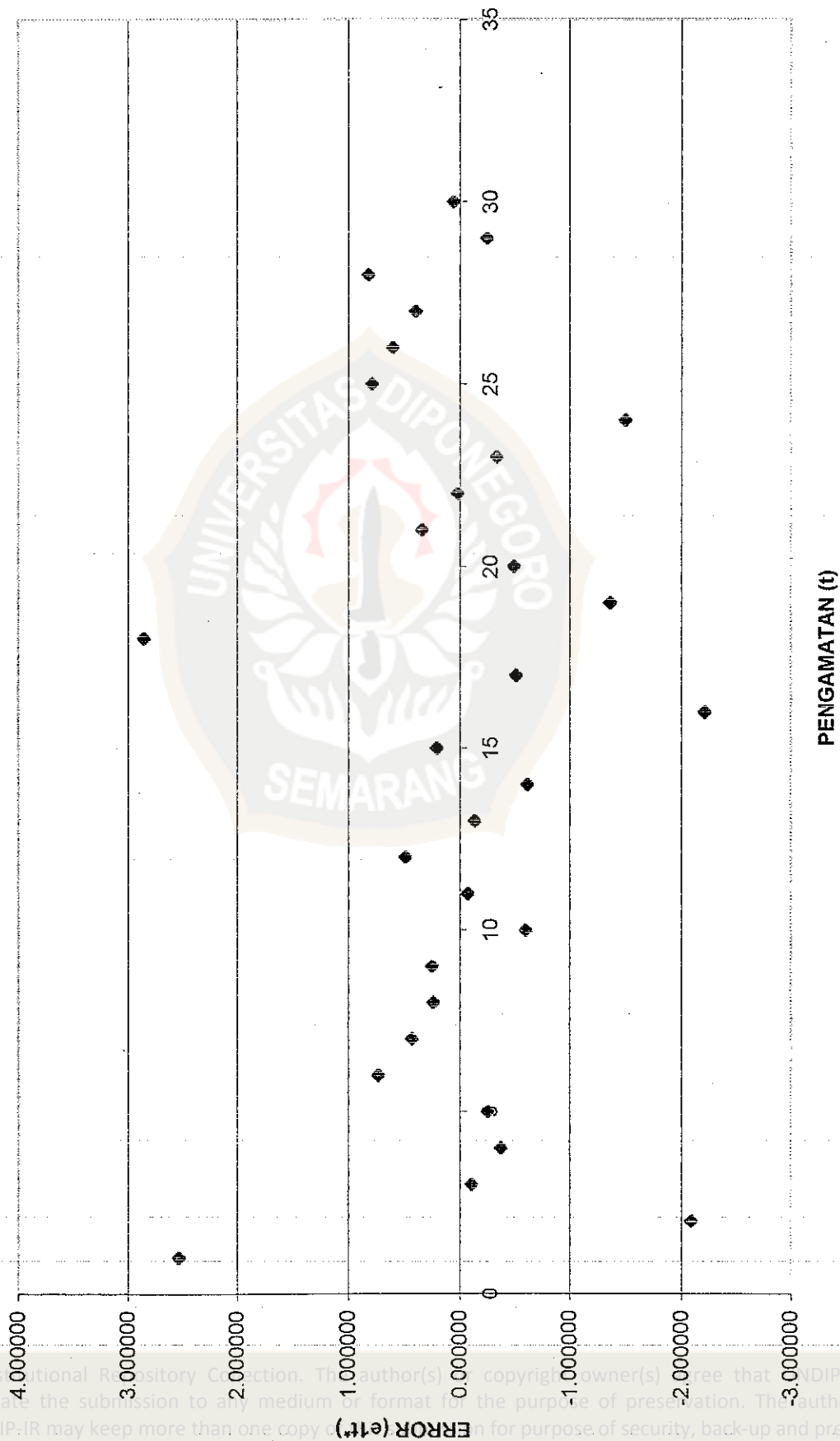
LAMPIRAN 2

DATA DUGAAN  $\hat{Y}_{1t}$  DAN  $\hat{Y}_{2t}$

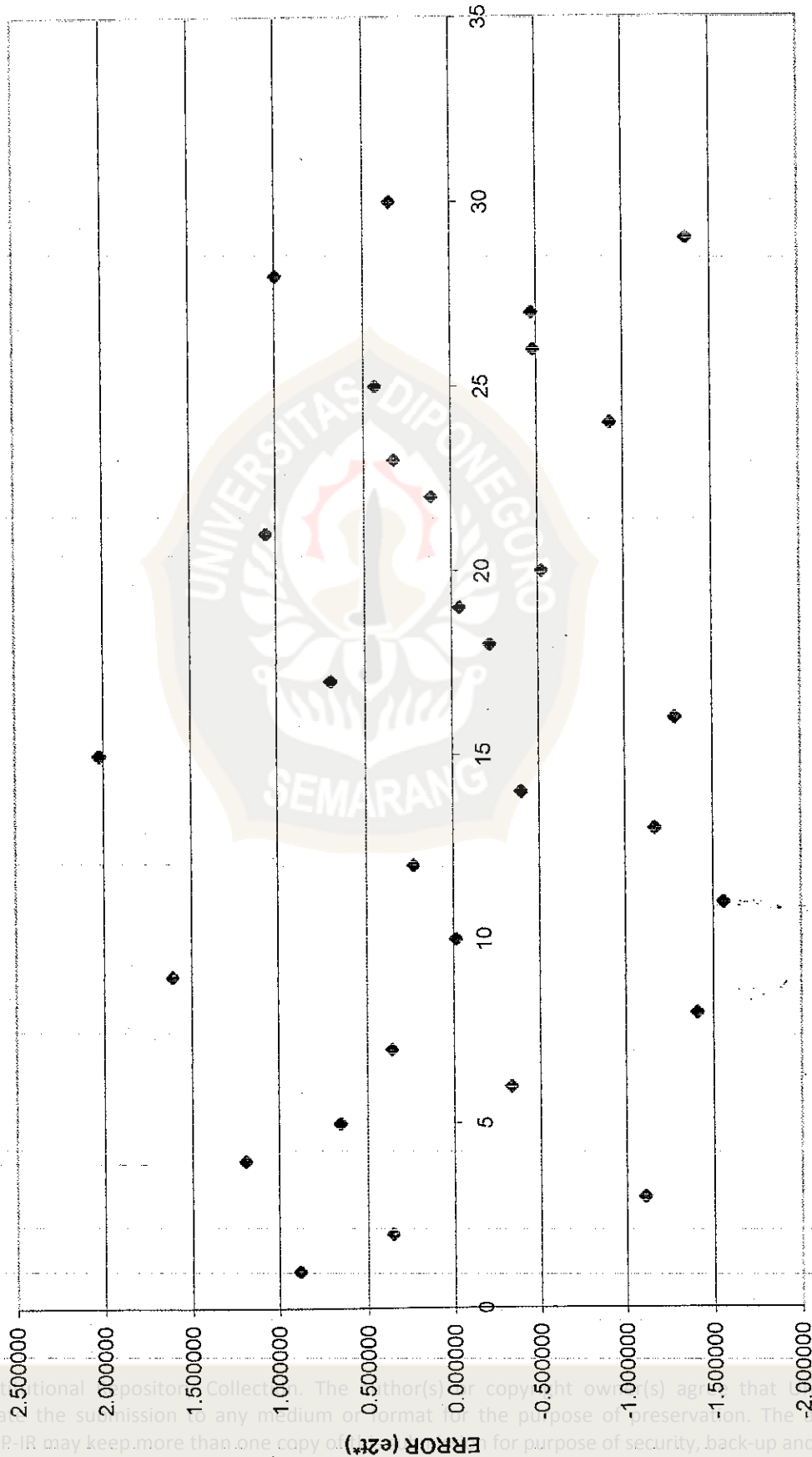
$Y_{1t}$	$Y_{2t}$	$\hat{Y}_{1t}$	$\hat{Y}_{2t}$	$X_{1t}$	$X_{2t}$	$X_{3t}$	$X_{4t}$
166,5100	88,7940	164,776690	88,985705	74,0000	1,0000	35,0000	12,0000
535,8000	126,8200	536,188280	126,423598	30,0000	2,0000	74,0000	36,0000
601,3175	148,3295	602,834112	148,668687	43,0000	3,0000	20,0000	45,0000
779,3475	167,2115	778,197924	166,905648	24,0000	4,0000	46,0000	56,0000
222,8675	70,2495	222,153843	70,104482	44,0000	5,0000	26,0000	14,0000
1120,8450	261,7030	1121,226645	261,921259	61,0000	6,0000	48,0000	86,0000
1215,9100	261,5940	1215,493113	261,646124	39,0000	7,0000	21,0000	93,0000
1011,0025	222,2385	1012,906850	222,639736	43,0000	8,0000	59,0000	75,0000
1211,1700	275,8780	1209,292229	275,481098	62,0000	9,0000	80,0000	91,0000
431,4050	96,0570	431,614589	96,020325	34,0000	10,0000	29,0000	29,0000
769,3425	181,1545	771,414136	181,515437	58,0000	11,0000	67,0000	56,0000
1122,5625	271,7025	1122,251169	271,653359	85,0000	12,0000	88,0000	85,0000
740,0100	193,6940	741,398177	193,971254	85,0000	13,0000	37,0000	57,0000
280,0900	63,3960	280,673472	63,446828	39,0000	14,0000	23,0000	17,0000
1016,4025	244,9285	1013,673486	244,473101	84,0000	15,0000	25,0000	79,0000
1118,6300	254,6720	1120,670530	254,70824	72,0000	16,0000	14,0000	87,0000
427,2925	86,4345	426,641210	86,134707	37,0000	17,0000	82,0000	25,0000
832,6375	150,0675	832,434501	150,493529	18,0000	18,0000	97,0000	55,0000
1009,8150	183,9610	1010,233165	183,829948	17,0000	19,0000	19,0000	73,0000
630,6225	168,6965	631,303240	168,647014	95,0000	20,0000	93,0000	45,0000
1217,2125	277,0925	1215,616595	276,876002	86,0000	21,0000	32,0000	94,0000
273,6175	41,1995	273,400624	41,164732	29,0000	22,0000	49,0000	13,0000
564,6075	109,0855	564,255387	108,900508	43,0000	23,0000	73,0000	36,0000
566,5700	140,8980	567,780897	140,901093	84,0000	24,0000	23,0000	42,0000
598,6950	139,6730	597,791491	139,601148	77,0000	25,0000	75,0000	41,0000
508,9875	73,7875	509,463822	73,947158	19,0000	26,0000	77,0000	29,0000
826,5475	162,1515	826,850709	162,321208	52,0000	27,0000	36,0000	59,0000
833,8350	159,5290	832,132240	159,421556	49,0000	28,0000	17,0000	60,0000
1170,1650	254,2210	1171,705692	254,469879	85,0000	29,0000	54,0000	88,0000
1171,0325	200,7605	1170,476065	200,707443	20,0000	30,0000	25,0000	84,0000
<b>22974,8500</b>	<b>5075,9800</b>	<b>22974,850883</b>	<b>5075,980806</b>	<b>1588,0000</b>	<b>465,0000</b>	<b>1444,0000</b>	<b>1662,0000</b>

LAMPIRAN 3

GRAFIK ERROR (NON OTOKORELASI)



GRAFIK ERROR (NON OTOKORELASI)



PENGAMATAN (t)

LAMPIRAN 4

TABEL DUGAAN  $\hat{Y}_{it}^*$   
PERHITUNGAN STD. ERROR DAN  $R^2$

$Y_{it}$	$\hat{Y}_{it}^*$	$e_{it}^*$	$(e_{it}^*)^2$	$Y_{it}-\bar{Y}$	$(Y_{it}-\bar{Y})^2$
166,5100	163,974970	2,535030	6,426377	-599,3183	359182,4643
535,8000	537,882189	-2,082189	4,335509	-230,0283	52913,03398
601,3175	601,419480	-0,101980	0,010400	-164,5108	27063,81417
779,3475	779,719865	-0,372365	0,138655	13,5192	182,7678764
222,8675	223,120804	-0,253304	0,064163	-542,9608	294806,4662
1120,8450	1120,106415	0,738585	0,545507	355,0167	126036,8338
1215,9100	1215,473878	0,436122	0,190202	450,0817	202573,507
1011,0025	1010,758923	0,243577	0,059330	245,1742	60110,37216
1211,1700	1210,911860	0,258140	0,066636	445,3417	198329,2004
431,4050	432,000877	-0,595877	0,355069	-334,4233	111838,9657
769,3425	769,407342	-0,064842	0,004205	3,5142	12,3493697
1122,5625	1122,066910	0,495590	0,245609	356,7342	127259,2659
740,0100	740,138723	-0,128723	0,016569	-25,8183	666,5863189
280,0900	280,701396	-0,611396	0,373805	-485,7383	235941,7281
1016,4025	1016,189457	0,213043	0,045387	250,5742	62787,41317
1118,6300	1120,835356	-2,205356	4,863597	352,8017	124469,0162
427,2925	427,799762	-0,507262	0,257315	-338,5358	114606,5102
832,6375	829,780189	2,857311	8,164227	66,8092	4463,464795
1009,8150	1011,171321	-1,356321	1,839608	243,9867	59529,49367
630,6225	631,111069	-0,488569	0,238700	-135,2058	18280,61728
1217,2125	1216,863958	0,348542	0,121481	451,3842	203747,6662
273,6175	273,592819	0,024681	0,000609	-492,2108	242271,5041
564,6075	564,938174	-0,330674	0,109345	-201,2208	40489,82363
566,5700	568,064040	-1,494040	2,232155	-199,2583	39703,88327
598,6950	597,902032	0,792968	0,628799	-167,1333	27933,551
508,9875	508,380386	0,607114	0,368587	-256,8408	65967,2135
826,5475	826,143076	0,404424	0,163559	60,7192	3686,817241
833,8350	833,008885	0,826115	0,682466	68,0067	4624,906756
1170,1650	1170,410708	-0,245708	0,060372	404,3367	163488,1403
1171,0325	1170,970542	0,061958	0,003839	405,2042	164190,417
<b>22974,8500</b>	<b>22974,8454</b>	<b>0,0046</b>	<b>32,6121</b>	<b>0,000010</b>	<b>3137157,7936</b>

$$\text{STD. E} = \sqrt{S_{11}} = \sqrt{\frac{\sum(e_{it}^*)^2}{n}} = \sqrt{\frac{32,6121}{30}} = \sqrt{1,087069} = 1,042626$$

$$R^2 = 1 - \frac{\sum(Y_{it} - \hat{Y}_{it}^*)^2}{\sum(Y_{it} - \bar{Y})^2} = 1 - \frac{32,6121}{3137157,7936} = 0,999989$$



**TABEL DUGAAN  $\hat{Y}_{2t}$   
PERHITUNGAN STD. ERROR DAN  $R^2$**

$Y_{2t}$	$\hat{Y}_{2t}$	$e_{2t}$	$(e_{2t})^2$	$(Y_{2t}-\hat{Y})$	$(Y_{2t}-\hat{Y})^2$
88,7940	87,9102	0,8838	0,7812	-80,4053	6465,017575
126,8200	126,4623	0,3577	0,1279	-42,3793	1796,007866
148,3295	149,4350	-1,1055	1,2220	-20,8698	435,5499294
167,2115	166,0170	1,1945	1,4268	-1,9878	3,951480036
70,2495	69,5965	0,6530	0,4264	-98,9498	9791,069451
261,7030	262,0367	-0,3337	0,1113	92,5037	8556,928408
261,5940	261,2346	0,3594	0,1292	92,3947	8536,77449
222,2385	223,6438	-1,4053	1,9748	53,0392	2813,153236
275,8780	274,2664	1,6116	2,5974	106,6787	11380,33799
96,0570	96,0704	-0,0134	0,0002	-73,1423	5349,800877
181,1545	182,7119	-1,5574	2,4256	11,9552	142,926018
271,7025	271,4739	0,2286	0,0522	102,5032	10506,89925
193,6940	194,8649	-1,1709	1,3710	24,4947	599,9887114
63,3960	63,7918	-0,3958	0,1566	-105,8033	11194,34527
244,9285	242,9063	2,0222	4,0892	75,7292	5734,906735
254,6720	255,9600	-1,2880	1,6590	85,4727	7305,576804
86,4345	85,7407	0,6938	0,4813	-82,7648	6850,017582
150,0675	150,2858	-0,2183	0,0476	-19,1318	366,0270339
183,9610	184,0054	-0,0444	0,0020	14,7617	217,9068126
168,6965	169,2159	-0,5194	0,2698	-0,5028	0,252841026
277,0925	276,0353	1,0572	1,1176	107,8932	11640,93549
41,1995	41,0846	0,1149	0,0132	-127,9998	16383,95725
109,0855	108,7557	0,3298	0,1088	-60,1138	3613,672918
140,8980	141,8237	-0,9257	0,8570	-28,3013	800,9654496
139,6730	139,2371	0,4359	0,1900	-29,5263	871,8043404
73,7875	74,2680	-0,4805	0,2309	-95,4118	9103,417876
162,1515	162,6208	-0,4693	0,2202	-7,0478	49,67195
159,5290	158,5308	0,9982	0,9964	-9,6703	93,51534033
254,2210	255,5830	-1,3620	1,8549	85,0217	7228,683859
200,7605	200,4112	0,3493	0,1220	31,5612	996,1072624
<b>5075,9800</b>	<b>5075,9797</b>	<b>0,000314</b>	<b>25,0625</b>	<b>0,000010</b>	<b>148830,170091</b>

$$STD. E = \sqrt{S_{22}} = \sqrt{\frac{\sum(e_{2t}^*)^2}{n}} = \sqrt{\frac{25,0625}{30}} = \sqrt{0,835417} = 0,914012$$

$$R^2 = 1 - \frac{\sum(Y_{2t} - \hat{Y})^2}{\sum(Y_{2t} - \bar{Y})^2} = 1 - \frac{25,0625}{148830,1701} = 0,999832$$

LAMPIRAN 5

TABEL DUGAAN  $Y_{it}^{**}$   
PERHITUNGAN STD. ERROR DAN  $R^2$

$Y_{it}$	$\hat{Y}_{it}^{**}$	$e_{it}^{**}$	$(e_{it}^{**})^2$	$Y_{it} - \bar{Y}$	$(Y_{it} - \bar{Y})^2$
166,5100	163,9621	2,5479	6,4917	-599,3183	359182,4643
535,8000	537,8286	-2,0286	4,1153	-230,0283	52913,0340
601,3175	601,3775	-0,0600	0,0036	-164,5108	27063,8142
779,3475	779,6616	-0,3141	0,0987	13,5192	182,7679
222,8675	223,0954	-0,2279	0,0520	-542,9608	294806,4662
1120,8450	1120,0744	0,7706	0,5938	355,0167	126036,8338
1215,9100	1215,4254	0,4846	0,2349	450,0817	202573,5070
1011,0025	1010,7219	0,2806	0,0788	245,1742	60110,3722
1211,1700	1210,8875	0,2825	0,0798	445,3417	198329,2004
431,4050	431,9778	-0,5728	0,3281	-334,4233	111838,9657
769,3425	769,3974	-0,0549	0,0030	3,5142	12,3494
1122,5625	1122,0720	0,4905	0,2406	356,7342	127259,2659
740,0100	740,1567	-0,1467	0,0215	-25,8183	666,5863
280,0900	280,6984	-0,6084	0,3702	-485,7383	235941,7281
1016,4025	1016,2057	0,1968	0,0387	250,5742	62787,4132
1118,6300	1120,8427	-2,2127	4,8961	352,8017	124469,0162
427,2925	427,8007	-0,5082	0,2583	-338,5358	114606,5102
832,6375	829,7592	2,8783	8,2847	66,8092	4463,4648
1009,8150	1011,1480	-1,3330	1,7768	243,9867	59529,4937
630,6225	631,1612	-0,5387	0,2902	-135,2058	18280,6173
1217,2125	1216,8952	0,3173	0,1007	451,3842	203747,6662
273,6175	273,6070	0,0105	0,0001	-492,2108	242271,5041
564,6075	564,9588	-0,3513	0,1234	-201,2208	40489,8236
566,5700	568,1196	-1,5496	2,4012	-199,2583	39703,8833
598,6950	597,9544	0,7406	0,5484	-167,1333	27933,5510
508,9875	508,3931	0,5944	0,3533	-256,8408	65967,2135
826,5475	826,1764	0,3711	0,1377	60,7192	3686,8172
833,8350	833,0428	0,7922	0,6276	68,0067	4624,9068
1170,1650	1170,4670	-0,3020	0,0912	404,3367	163488,1403
1171,0325	1170,9794	0,0531	0,0028	405,2042	164190,4170
<b>22974,8500</b>	<b>22974,8479</b>	<b>0,0021</b>	<b>32,6434</b>	<b>0,0000</b>	<b>3137157,7936</b>

$$STD. E = \sqrt{S_{11}} = \sqrt{\frac{\sum(e_{it}^{**})^2}{n}} = \sqrt{\frac{32,6434}{30}} = \sqrt{1,088114} = 1,043127$$

$$R^2 = 1 - \frac{\sum(Y_{it} - \hat{Y}_{it})^2}{\sum(Y_{it} - \bar{Y})^2} = 1 - \frac{32,6434}{3137157,7936} = 0,999990$$



**TABEL DUGAAN  $Y_{2t}^{**}$   
PERHITUNGAN STD. ERROR DAN  $R^2$**

$Y_{2t}$	$\hat{Y}_{2t}^{**}$	$e_{2t}^{**}$	$(e_{2t}^{**})^2$	$Y_{2t} - \bar{Y}$	$(Y_{2t} - \bar{Y})^2$
88,7940	87,9471	0,8469	0,7172	-80,4053	6465,0176
126,8200	126,4029	0,4171	0,1740	-42,3793	1796,0079
148,3295	149,5034	-1,1739	1,3781	-20,8698	435,5499
167,2115	166,0219	1,1896	1,4151	-1,9878	3,9515
70,2495	69,6544	0,5951	0,3542	-98,9498	9791,0695
261,7030	262,0335	-0,3305	0,1093	92,5037	8556,9284
261,5940	261,2948	0,2992	0,0895	92,3947	8536,7745
222,2385	223,6155	-1,3770	1,8962	53,0392	2813,1532
275,8780	274,1862	1,6918	2,8621	106,6787	11380,3380
96,0570	96,1190	-0,0620	0,0038	-73,1423	5349,8009
181,1545	182,6670	-1,5125	2,2876	11,9552	142,9260
271,7025	271,3756	0,3269	0,1069	102,5032	10506,8992
193,6940	194,8916	-1,1976	1,4342	24,4947	599,9887
63,3960	63,8562	-0,4602	0,2118	-105,8033	11194,3453
244,9285	242,9589	1,9696	3,8792	75,7292	5734,9067
254,6720	256,0378	-1,3658	1,8654	85,4727	7305,5768
86,4345	85,6633	0,7712	0,5947	-82,7648	6850,0176
150,0675	150,1688	-0,1013	0,0103	-19,1318	366,0270
183,9610	184,0723	-0,1113	0,0124	14,7617	217,9068
168,6965	169,1104	-0,4139	0,1713	-0,5028	0,2528
277,0925	276,0693	1,0232	1,0468	107,8932	11640,9355
41,1995	41,0872	0,1123	0,0126	-127,9998	16383,9572
109,0855	108,6984	0,3871	0,1499	-60,1138	3613,6729
140,8980	141,8854	-0,9874	0,9750	-28,3013	800,9654
139,6730	139,1747	0,4983	0,2483	-29,5263	871,8043
73,7875	74,2017	-0,4142	0,1716	-95,4118	9103,4179
162,1515	162,6490	-0,4975	0,2475	-7,0478	49,6719
159,5290	158,6042	0,9248	0,8553	-9,6703	93,5153
254,2210	255,5651	-1,3441	1,8065	85,0217	7228,6839
200,7605	200,4623	0,2982	0,0889	31,5612	996,1073
<b>5075,9800</b>	<b>5075,9780</b>	<b>0,0020</b>	<b>25,1756</b>	<b>0,0000</b>	<b>148830,1701</b>

$$\text{STD. E} = \sqrt{S_{22}} = \sqrt{\frac{\sum(e_{2t}^{**})^2}{n}} = \sqrt{\frac{25,1756}{30}} = \sqrt{0,839187} = 0,916072$$

$$R^2 = 1 - \frac{\sum(Y_{2t} - \hat{Y})^2}{\sum(Y_{2t} - \bar{Y})^2} = 1 - \frac{25,1756}{148830,1701} = 0,999831$$

LAMPIRAN 6

TABEL ERROR UNTUK ITERASI  
Matriks Varian-Covarian Contemporaneous

ITERASI 1		
$e_{1t}^2$	$e_{1t} \cdot e_{2t}$	$e_{2t}^2$
6,426377	2,240545	0,781162
4,335509	-0,744795	0,127948
0,010400	0,112735	1,222044
0,138655	-0,444782	1,426782
0,064163	-0,165398	0,426362
0,545507	-0,246446	0,111338
0,190202	0,156737	0,129159
0,059330	-0,342297	1,974845
0,066636	0,416028	2,597383
0,355069	0,007964	0,000179
0,004205	0,100988	2,425609
0,245609	0,113282	0,052249
0,016569	0,150722	1,371015
0,373805	0,241979	0,156643
0,045387	0,430809	4,089151
4,863597	2,840521	1,658969
0,257315	-0,351931	0,481339
8,164227	-0,623662	0,047641
1,839608	0,060154	0,001967
0,238700	0,253764	0,269779
0,121481	0,368464	1,117584
0,000609	0,002835	0,013195
0,109345	-0,109067	0,108789
2,232155	1,383087	0,856988
0,628799	0,345663	0,190018
0,368587	-0,291729	0,230897
0,163559	-0,189785	0,220217
0,682466	0,824610	0,996361
0,060372	0,334644	1,854937
0,003839	0,021639	0,121983
<b>32,612083</b>	<b>6,897278</b>	<b>25,062534</b>

$$S_{11} = \frac{\sum(e_{1t}^2)}{n} = \frac{32,612083}{30} = 1,087069$$

$$S_{12} = \frac{\sum(e_{1t} \cdot e_{2t})}{n} = \frac{6,897278}{30} = 0,229909$$

$$S_{22} = \frac{\sum(e_{2t}^2)}{n} = \frac{25,062534}{30} = 0,835418$$

**TABEL ERROR UNTUK ITERASI  
Matriks Varian-Covarian Contemporaneous**

ITERASI 2		
$e_{1t}^{*2}$	$e_{1t}^* e_{2t}^*$	$e_{2t}^{*2}$
6,487181	2,164256	0,722040
4,131084	-0,837894	0,169947
0,003969	0,073629	1,365818
0,101329	-0,378731	1,415557
0,052794	-0,137778	0,359565
0,590408	-0,254392	0,109611
0,231521	0,146106	0,092202
0,077290	-0,383523	1,903094
0,078850	0,473192	2,839688
0,330004	0,033501	0,003401
0,003083	0,084191	2,298934
0,241088	0,156552	0,101657
0,021099	0,173681	1,429674
0,370409	0,277029	0,207189
0,039238	0,390915	3,894562
4,893132	3,008225	1,849412
0,258177	-0,388675	0,585134
8,276272	-0,318614	0,012266
1,781160	0,141770	0,011284
0,286122	0,225952	0,178436
0,102255	0,327937	1,051706
0,000135	0,001307	0,012634
0,122308	-0,133752	0,146267
2,388227	1,518626	0,965665
0,554296	0,367186	0,243237
0,354522	-0,249839	0,176066
0,139637	-0,185151	0,245501
0,631764	0,739517	0,865648
0,088641	0,400675	1,811133
0,002904	0,016269	0,091160
<b>32,638901</b>	<b>7,452167</b>	<b>25,158491</b>

$$S_{11} = \frac{\sum(e_{1t}^{*2})}{n} = \frac{32,638901}{30} = 1,087963$$

$$S_{12} = \frac{\sum(e_{1t}^* e_{2t}^*)}{n} = \frac{7,452167}{30} = 0,248406$$

$$S_{22} = \frac{\sum(e_{2t}^{*2})}{n} = \frac{25,158491}{30} = 0,838616$$

**TABEL ERROR UNTUK ITERASI  
Matriks Varian-Covarian Contemporaneous**

ITERASI 3		
$e_{1t}^{*2}$	$e_{1t} e_{2t}$	$e_{2t}^{*2}$
6,491813	2,158372	0,717607
4,116080	-0,845587	0,173713
0,003611	0,070515	1,377032
0,098784	-0,373917	1,415353
0,051990	-0,135786	0,354639
0,593887	-0,254675	0,109211
0,234788	0,145195	0,089790
0,078737	-0,386422	1,896456
0,079829	0,477888	2,860833
0,328167	0,035350	0,003808
0,003003	0,082889	2,288157
0,240821	0,160178	0,106539
0,021441	0,175329	1,433720
0,370142	0,279719	0,211386
0,038826	0,388165	3,880750
4,895047	3,020572	1,863895
0,258222	-0,391669	0,594081
8,284742	-0,293328	0,010386
1,776786	0,147665	0,012272
0,289743	0,223102	0,171788
0,100945	0,325166	1,047437
0,000114	0,001199	0,012618
0,123277	-0,135825	0,149650
2,399841	1,528976	0,974135
0,549036	0,368981	0,247975
0,353510	-0,246486	0,171864
0,137973	-0,184705	0,247266
0,628156	0,733378	0,856226
0,090905	0,405248	1,806567
0,002844	0,015923	0,089150
<b>32,643057</b>	<b>7,495409</b>	<b>25,174305</b>

$$S_{11} = \frac{\sum(e_{1t}^{*2})}{n} = \frac{32,643057}{30} = 1,088102$$

$$S_{12} = \frac{\sum(e_{1t} e_{2t})}{n} = \frac{7,495409}{30} = 0,249847$$

$$S_{22} = \frac{\sum(e_{2t}^{*2})}{n} = \frac{25,174305}{30} = 0,839144$$

**TABEL ERROR UNTUK ITERASI  
Matriks Varian-Covarian Contemporaneous**

ITERASI 4		
$e_{1t}^{*2}$	$e_{1t}^* e_{2t}^*$	$e_{2t}^{*2}$
6,491986	2,157820	0,717221
4,115285	-0,846071	0,173946
0,003595	0,070388	1,378024
0,098663	-0,373662	1,415151
0,051946	-0,135649	0,354228
0,593911	-0,254726	0,109250
0,234875	0,145023	0,089544
0,078771	-0,386481	1,896224
0,079812	0,477938	2,862040
0,328089	0,035521	0,003846
0,003007	0,082942	2,287588
0,240661	0,160350	0,106840
0,021493	0,175571	1,434204
0,370152	0,279957	0,211739
0,038746	0,387697	3,879340
4,895791	3,021910	1,865263
0,258265	-0,391896	0,594672
8,284857	-0,291666	0,010268
1,776759	0,148245	0,012369
0,290084	0,222950	0,171353
0,100758	0,324781	1,046890
0,000112	0,001189	0,012608
0,123382	-0,135976	0,149856
2,400857	1,529895	0,974893
0,548570	0,369041	0,248266
0,353396	-0,246258	0,171600
0,137793	-0,184665	0,247480
0,627769	0,732786	0,855372
0,091148	0,405783	1,806516
0,002827	0,015857	0,088936
<b>32,643359</b>	<b>7,498594</b>	<b>25,175529</b>

$$S_{11} = \frac{\sum(e_{1t}^{*2})}{n} = \frac{32,643359}{30} = 1,088112$$

$$S_{12} = \frac{\sum(e_{1t}^* e_{2t}^*)}{n} = \frac{7,498594}{30} = 0,249953$$

$$S_{22} = \frac{\sum(e_{2t}^{*2})}{n} = \frac{25,175529}{30} = 0,839184$$

**TABEL ERROR UNTUK ITERASI  
Matriks Varians-Covarian Contemporaneous**

ITERASI 5		
$e_{1t}^{*2}$	$e_{1t}^* e_{2t}^*$	$e_{2t}^{*2}$
6,491731	2,157739	0,717195
4,115313	-0,846123	0,173966
0,003598	0,070414	1,378095
0,098665	-0,373664	1,415142
0,051957	-0,135658	0,354199
0,593847	-0,254713	0,109252
0,234855	0,145003	0,089527
0,078757	-0,386443	1,896200
0,079786	0,477869	2,862142
0,328110	0,035535	0,003848
0,003012	0,083008	2,287536
0,240590	0,160345	0,106865
0,021514	0,175661	1,434235
0,370186	0,279986	0,211764
0,038717	0,387546	3,879241
4,896070	3,022076	1,865362
0,258294	-0,391935	0,594721
8,284793	-0,291530	0,010259
1,776789	0,148288	0,012376
0,290181	0,222964	0,171317
0,100706	0,324691	1,046853
0,000112	0,001186	0,012608
0,123411	-0,136000	0,149874
2,401114	1,530019	0,974946
0,548456	0,369021	0,248291
0,353372	-0,246233	0,171578
0,137753	-0,184643	0,247494
0,627687	0,732712	0,855311
0,091201	0,405901	1,806506
0,002825	0,015848	0,088921
<b>32,643400</b>	<b>7,498869</b>	<b>25,175624</b>

$$S_{11} = \frac{\sum(e_{1t}^{*2})}{n} = \frac{32,643400}{30} = 1,088113$$

$$S_{12} = \frac{\sum(e_{1t}^* e_{2t}^*)}{n} = \frac{7,498869}{30} = 0,249962$$

$$S_{22} = \frac{\sum(e_{2t}^{*2})}{n} = \frac{25,175624}{30} = 0,839187$$



**TABEL ERROR UNTUK ITERASI  
MATRIKS VARIAN-COVARIAN CONTEMPORANEOUS**

ITERASI 6		
$e_{1t}^{*2}$	$e_{1t}^{*} e_{2t}^{*}$	$e_{2t}^{*2}$
6,491741	2,157728	0,717187
4,115309	-0,846112	0,173962
0,003598	0,070414	1,378107
0,098666	-0,373664	1,415130
0,051958	-0,135658	0,354194
0,593842	-0,254716	0,109255
0,234851	0,144999	0,089524
0,078754	-0,386438	1,896213
0,079783	0,477857	2,862125
0,328118	0,035538	0,003849
0,003013	0,083020	2,287552
0,240581	0,160340	0,106862
0,021517	0,175673	1,434247
0,370199	0,279994	0,211769
0,038712	0,387522	3,879222
4,896127	3,022104	1,865375
0,258309	-0,391943	0,594713
8,284707	-0,291543	0,010260
1,776831	0,148296	0,012377
0,290199	0,222974	0,171321
0,100694	0,324671	1,046843
0,000111	0,001184	0,012607
0,123425	-0,136006	0,149870
2,401179	1,530047	0,974956
0,548424	0,369006	0,248286
0,353344	-0,246227	0,171582
0,137735	-0,184633	0,247499
0,627647	0,732685	0,855301
0,091217	0,405938	1,806519
0,002822	0,015840	0,088918
<b>32,643414</b>	<b>7,498892</b>	<b>25,175624</b>

$$S_{11} = \frac{\sum(e_{1t}^{*2})}{n} = \frac{32,643414}{30} = 1,088114$$

$$S_{12} = \frac{\sum(e_{1t}^{*} e_{2t}^{*})}{n} = \frac{7,498892}{30} = 0,249963$$

$$S_{22} = \frac{\sum(e_{2t}^{*2})}{n} = \frac{25,175624}{30} = 0,839187$$