

## BAB V

### KESIMPULAN DAN SARAN

#### 5.1. Kesimpulan

Berdasarkan hasil pembahasan yang disampaikan pada bagian analisis data, maka kesimpulan penelitian ini dapat dituliskan sebagai berikut:

- 1) Variabel input biaya bahan baku dan bahan penolong (K) memiliki nilai elastisitas terhadap output (Q) yang ditunjukkan inelastis atau tidak elastis. Variabel input biaya tenaga kerja (L) memiliki nilai elastisitas terhadap output (Q) yang ditunjukkan inelastis atau tidak elastis.
- 2) Nilai *returns to scale* (RTS) pada kelompok industri makanan dan minuman di Indonesia pada tahun 2002 ditunjukkan berada dalam kondisi menurun atau disebut juga *decreasing returns to scale*.

#### 5.2. Saran

Berdasarkan kesimpulan yang telah diperoleh dalam penelitian ini, maka saran yang dapat diberikan adalah sebagai berikut:

- 1) Pengembangan industri di masa yang akan datang hendaknya dapat meningkatkan sinergi dari masing-masing input untuk menghasilkan kontribusi yang optimal dalam proses produksi. Langkah ini dapat dilakukan dengan menciptakan teknologi yang berbasis pada pengembangan sumberdaya manusia untuk mendukung pengembangan kapital. Misalnya dengan melakukan upaya untuk meningkatkan kualitas sumberdaya manusia

agar dapat mengoptimalkan peran dari kapital berupa input bahan baku dan bahan penolong dalam industri makanan dan minuman.

- 2) Kondisi di mana industri makanan dan minuman di Indonesia berada dalam tahap *decreasing returns to scale* dikarenakan rendahnya produktivitas yang terdapat dalam sistem produksi. Untuk meningkatkan produktivitas sehingga diperoleh tahap *constant*, maka diperlukan adanya modernisasi atau pembaharuan teknologi produksi terutama yang berkaitan dengan proses produksi. Pihak pemerintah hendaknya dapat mengurangi segala bentuk kebijakan yang dapat menyebabkan kondisi biaya tinggi untuk memberikan kesempatan bagi para produsen dalam melakukan revitalisasi teknologi produksi.
- 3) Pada penelitian di masa yang akan datang, perlu dilakukan analisis lebih lanjut mengenai efisiensi teknis untuk industri makanan dan minuman pada beberapa periode pengamatan maupun berdasarkan perbandingan antara industri skala besar atau skala sedang. Langkah ini dilakukan untuk melihat seberapa besar kontribusi secara nasional dari industri makanan dan minuman dengan kelompok-kelompok industri manufaktur lainnya di Indonesia.

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**LAMPIRAN 1.A****NILAI OUTPUT PRODUKSI DAN BIAYA INPUT KELOMPOK INDUSTRI MAKANAN DAN MINUMAN TAHUN 2002 (NILAI NOMINAL)**

Tabel 1.1

No	KLUI	OUTPUT (Q)	K1	K2	K3
1	15111	156.890.617	94.056.140	57.091.651	21.410.396
2	15112	628.866.386	800.716.474	731.285.475	36.763.499
3	15121	1.919.548.250	2.818.714.270	2.202.370.043	96.845.222
4	15122	338.203.014	354.576.002	330.563.640	9.299.063
5	15123	38.922.424	169.031.386	29.196.245	139.611.755
6	15124	9.531.692.320	15.430.329.409	13.579.879.446	901.250.395
7	15125	169.722.492	150.962.367	138.021.259	3.550.530
8	15129	589.160.417	869.888.871	773.865.276	58.878.781
9	15131	971.996.194	1.055.159.184	827.577.943	162.469.144
10	15132	9.649.529	5.483.652	4.467.860	524.534
11	15133	29.737.286	15.969.859	13.410.237	1.458.217
12	15134	5.321.349	3.942.822	3.131.253	737.063
13	15139	14.610.123	44.063.359	4.256.478	39.404.305
14	15141	30.195.011.621	46.707.611.036	41.594.225.207	2.558.004.001
15	15143	3.591.034.165	4.295.550.900	4.050.774.137	193.989.859
16	15144	148.736.691.222	21.395.258.954	19.979.676.436	854.639.282
17	15145	110.387.226	76.301.180	68.137.213	2.423.380
18	15211	6.758.543.365	7.685.802.831	6.607.547.765	215.850.300
19	15212	193.328.944	209.286.410	199.519.607	6.990.597
20	15213	301.826.521	249.605.397	207.952.934	23.754.926
21	15311	1.046.356.055	936.891.280	912.991.242	15.524.968
22	15312	239.843.616	217.948.049	207.571.481	3.312.409
23	15313	1.025.029.096	1.421.029.377	1.241.279.303	55.857.967
24	15314	956.036.286	1.713.499.790	1.455.384.885	157.949.329
25	15315	206.126.526	142.111.810	131.197.065	983.101
26	15316	26.408.806	19.898.589	19.113.699	291.290
27	15318	58.525.669	21.882.237	19.341.775	956.241
28	15321	3.364.388.175	4.953.180.134	4.431.722.825	105.827.734
29	15322	295.599.469	334.989.280	255.741.100	21.124.469
30	15323	1.070.218.673	1.435.461.715	1.191.167.952	203.314.655
31	15324	101.536.314	164.124.774	150.353.646	8.664.194
32	15329	96.416.087	88.186.919	72.300.650	2.010.012
33	15331	9.054.570.143	12.675.615.887	11.579.818.784	495.975.118
34	15332	1.348.767.282	2.096.576.607	1.983.947.478	65.995.488
35	15410	5.344.642.274	6.128.024.399	5.172.822.499	216.995.857
36	15421	7.868.718.654	8.080.427.436	6.384.519.980	1.241.865.074
37	15422	4.858.243	2.994.919	2.759.795	207.992
38	15423	30.936.758	28.176.832	24.144.875	1.304.454
39	15424	121.004.434	84.197.637	74.533.320	6.145.501
40	15429	7.805.335	5.474.469	4.341.691	238.233
41	15431	224.908.477	360.908.276	336.532.754	9.774.051
42	15432	2.169.529.510	2.784.388.307	2.079.252.235	148.180.362

Tabel 1.2

No	KLUI	OUTPUT (Q)	K1	K2	K3
43	15440	4.622.418.215	6.672.119.122	6.015.886.491	316.547.572
44	15491	3.067.106.332	2.916.269.333	2.246.531.456	349.772.496
45	15492	250.070.577	177.455.217	39.758.473	114.913.320
46	15493	1.421.644.923	2.203.881.829	1.343.394.894	52.661.720
47	15494	160.577.856	111.246.780	102.475.093	7.668.392
48	15495	402.570.969	451.800.555	367.655.565	28.667.725
49	15496	410.026.014	309.493.438	273.788.364	18.501.398
50	15497	1.965.519.158	2.378.564.766	1.724.292.496	232.320.411
51	15498	79.526.889	78.731.906	55.387.549	4.659.027
52	15499	2.373.828.860	1.450.647.430	1.213.709.447	94.636.727
53	15510	23.958.146	8.710.208	7.101.901	777.487
54	15520	14.426.748	5.411.212	4.241.115	304.002
55	15530	223.386.977	467.895.868	280.125.734	151.601.676
56	15540	2.513.038.096	3.003.895.555	2.433.789.239	210.558.965

Sumber: *Statistik Industri*, Badan Pusat Statistik (BPS)

Keterangan:

- Output (Q) : Nilai nominal output produksi (ribu Rupiah)
- K1 : Nilai nominal total biaya input (ribu Rupiah)
- K2 : Nilai nominal total biaya bahan baku dan bahan penolong (ribu Rupiah)
- K3 : Nilai nominal total biaya bahan bakar, tenaga listrik, dan gas serta biaya atas sewa gedung, mesin, dan alat-alat (ribu Rupiah)

**LAMPIRAN 1.B****NILAI OUTPUT PRODUKSI DAN BIAYA INPUT KELOMPOK INDUSTRI MAKANAN DAN MINUMAN TAHUN 2002 (NILAI RIIL)**

Tabel 2.1

No	KLUI	OUTPUT	K1	K2	K3
1	15111	126.688.160	75.949.725	46.101.139	17.288.756
2	15112	507.805.544	646.573.380	590.508.297	29.686.288
3	15121	1.550.022.812	2.276.093.564	1.778.399.583	78.201.891
4	15122	273.096.749	286.317.831	266.928.004	7.508.933
5	15123	31.429.606	136.491.752	23.575.779	112.735.590
6	15124	7.696.779.974	12.459.891.319	10.965.664.927	727.753.872
7	15125	137.049.816	121.901.136	111.451.275	2.867.030
8	15129	475.743.231	702.429.644	624.891.211	47.544.235
9	15131	784.880.648	852.034.225	668.263.843	131.192.784
10	15132	7.791.932	4.428.014	3.607.768	423.558
11	15133	24.012.666	12.895.558	10.828.680	1.177.501
12	15134	4.296.955	3.183.803	2.528.467	595.174
13	15139	11.797.580	35.580.878	3.437.078	31.818.722
14	15141	24.382.276.826	37.716.094.183	33.587.068.158	2.065.571.706
15	15143	2.899.736.890	3.468.629.603	3.270.973.948	156.645.558
16	15144	120.103.917.330	17.276.533.393	16.133.459.654	690.115.699
17	15145	89.136.972	61.612.710	55.020.359	1.956.864
18	15211	5.457.480.107	6.206.236.136	5.335.552.136	174.297.723
19	15212	156.111.873	168.997.424	161.110.794	5.644.862
20	15213	243.722.966	201.554.746	167.920.651	19.181.949
21	15311	844.925.755	756.533.656	737.234.530	12.536.311
22	15312	193.672.171	175.991.642	167.612.630	2.674.749
23	15313	827.704.373	1.147.472.042	1.002.325.019	45.104.948
24	15314	771.993.125	1.383.640.011	1.175.213.893	127.543.063
25	15315	166.445.838	114.754.369	105.940.782	793.848
26	15316	21.324.940	16.067.982	15.434.188	235.215
27	15318	47.259.100	17.669.765	15.618.358	772.158
28	15321	2.716.721.718	3.999.660.961	3.578.587.552	85.455.212
29	15322	238.694.662	270.501.680	206.509.286	17.057.872
30	15323	864.194.665	1.159.126.062	961.860.426	164.175.271
31	15324	81.989.918	132.529.695	121.409.598	6.996.281
32	15329	77.855.367	71.210.367	58.382.308	1.623.072
33	15331	7.311.506.898	10.235.477.945	9.350.628.863	400.496.704
34	15332	1.089.120.867	1.692.972.066	1.602.024.772	53.290.930
35	15410	4.315.764.110	4.948.340.115	4.177.020.752	175.222.753
36	15421	6.353.939.482	6.524.892.955	5.155.458.640	1.002.798.025
37	15422	3.923.000	2.418.378	2.228.517	167.952
38	15423	24.981.232	22.752.610	19.496.831	1.053.338
39	15424	97.710.299	67.989.048	60.185.174	4.962.452
40	15429	6.302.758	4.420.598	3.505.887	192.372
41	15431	181.612.142	291.431.101	271.748.025	7.892.483
42	15432	1.751.881.064	2.248.375.571	1.678.982.748	119.654.685

Tabel 2.2

No	KLUI	OUTPUT	K1	K2	K3
43	15440	3.732.572.848	5.387.693.089	4.857.789.479	255.610.120
44	15491	2.476.668.550	2.354.868.647	1.814.059.638	282.439.031
45	15492	201.930.375	143.293.941	32.104.710	92.791.764
46	15493	1.147.969.092	1.779.620.340	1.084.782.699	42.523.999
47	15494	129.665.581	89.831.056	82.747.976	6.192.177
48	15495	325.073.457	364.826.030	296.879.494	23.149.003
49	15496	331.093.358	249.913.952	221.082.335	14.939.759
50	15497	1.587.144.023	1.920.675.683	1.392.355.052	187.597.231
51	15498	64.217.449	63.575.505	44.725.088	3.762.134
52	15499	1.916.851.470	1.171.388.429	980.062.538	76.418.546
53	15510	19.346.048	7.033.437	5.734.739	627.816
54	15520	11.649.506	4.369.519	3.424.673	245.480
55	15530	180.383.541	377.822.891	226.199.721	122.417.374
56	15540	2.029.262.028	2.425.626.256	1.965.269.088	170.025.004

Sumber: *Statistik Industri*, Badan Pusat Statistik (BPS) (telah diolah)

Keterangan:

Output (Q) : Nilai riil output produksi (ribu Rupiah)

K1 : Nilai riil total biaya input (ribu Rupiah)

K2 : Nilai riil total biaya bahan baku dan bahan penolong (ribu Rupiah)

K3 : Nilai riil total biaya bahan bakar, tenaga listrik, dan gas serta biaya atas sewa gedung, mesin, dan alat-alat (ribu Rupiah)

Rumus nilai riil (Endaryati, et al, 2000: 101):

$$NR_t = \frac{NB_t}{IHK_t} \times 100$$

$NR_t$  : Nilai riil pada tahun t

$NB_t$  : Nilai berlaku (nominal) pada tahun t

$IHK_t$  : Indeks Harga Konsumen pada tahun t ( $IHK_{2002} = 123,84$ ) dengan menggunakan tahun 2000 sebagai tahun dasar.

**LAMPIRAN 1.C****PENGELUARAN UNTUK TENAGA KERJA DAN JUMLAH TENAGA  
KERJA KELOMPOK INDUSTRI MAKANAN DAN MINUMAN TAHUN 2002**

Tabel 3.1

No	KLUI	L1	L2	L3	L1 Riil
1	15111	47.963.063	3.750	2.780	38.729.864
2	15112	91.513.760	6.659	4.665	73.896.770
3	15121	227.732.523	36.117	33.013	183.892.541
4	15122	27.266.469	10.445	9.835	22.017.498
5	15123	4.060.840	1.138	856	3.279.102
6	15124	765.046.014	101.537	81.221	617.769.714
7	15125	5.461.540	3.059	2.891	4.410.158
8	15129	116.889.221	16.605	14.644	94.387.291
9	15131	209.028.725	17.283	12.125	168.789.345
10	15132	6.533.733	477	382	5.275.947
11	15133	4.055.726	1.050	907	3.274.973
12	15134	464.101	166	106	374.759
13	15139	2.811.827	856	722	2.270.532
14	15141	693.989.654	142.331	105.208	560.392.162
15	15143	204.628.636	13.623	10.642	165.236.302
16	15144	512.360.474	47.624	34.670	413.727.773
17	15145	7.844.524	1.600	1.322	6.334.402
18	15211	338.792.008	10.900	7.913	273.572.358
19	15212	26.015.766	1.651	1.165	21.007.563
20	15213	44.162.748	4.483	2.091	35.661.134
21	15311	33.528.539	9.260	7.741	27.074.079
22	15312	3.969.852	1.244	886	3.205.630
23	15313	131.359.084	32.045	26.423	106.071.612
24	15314	151.395.872	29.898	23.388	122.251.189
25	15315	1.914.366	671	457	1.545.838
26	15316	2.927.539	2.186	2.067	2.363.969
27	15318	3.160.410	4.876	1.384	2.552.011
28	15321	336.064.975	7.609	4.562	271.370.296
29	15322	48.637.641	7.571	6.052	39.274.581
30	15323	88.764.508	18.781	14.731	71.676.767
31	15324	15.658.757	3.693	2.968	12.644.345
32	15329	8.976.699	1.755	1.561	7.248.626
33	15331	450.159.886	21.832	14.356	363.501.200
34	15332	74.398.063	4.851	3.593	60.075.955
35	15410	682.280.849	73.951	61.791	550.937.378
36	15421	1.230.530.304	135.746	91.006	993.645.271
37	15422	995.831	644	363	804.127
38	15423	4.511.640	555	275	3.643.120
39	15424	5.903.340	1.481	1.075	4.766.909
40	15429	1.473.930	475	373	1.190.189
41	15431	29.350.506	4.814	4.295	23.700.344
42	15432	229.830.503	29.988	25.644	185.586.646

Tabel 3.2

No	KLUI	L1	L2	L3	L1 Riil
43	15440	449.116.227	52.138	43.690	362.658.452
44	15491	483.877.388	99.503	73.888	390.727.865
45	15492	48.563.601	7.874	5.631	39.214.794
46	15493	111.846.350	12.651	10.066	90.315.205
47	15494	18.383.117	3.888	3.481	14.844.248
48	15495	68.008.123	16.233	14.188	54.916.120
49	15496	90.461.880	25.304	22.363	73.047.384
50	15497	223.466.717	17.575	13.196	180.447.930
51	15498	13.050.054	3.148	2.701	10.537.834
52	15499	250.224.529	24.700	17.950	202.054.691
53	15510	3.163.103	743	590	2.554.185
54	15520	3.731.796	826	701	3.013.401
55	15530	40.702.936	3.378	1.976	32.867.358
56	15540	328.690.582	38.632	28.980	265.415.522

Sumber: *Statistik Industri*, Badan Pusat Statistik (BPS) (telah diolah)

Keterangan:

- L1 : Nilai nominal total pengeluaran untuk tenaga kerja (ribu Rupiah)  
 L2 : Jumlah total keseluruhan kelompok tenaga kerja (orang)  
 L3 : Jumlah total tenaga kerja produksi (orang)  
 L1 Riil : Nilai riil total pengeluaran untuk tenaga kerja (ribu Rupiah)

Rumus nilai riil (Endaryati, et al, 2000: 101):

$$NR_t = \frac{NB_t}{IHK_t} \times 100$$

$NR_t$  : Nilai riil pada tahun t

$NB_t$  : Nilai berlaku (nominal) pada tahun t

$IHK_t$  : Indeks Harga Konsumen pada tahun t ( $IHK_{2002} = 123,84$ ) dengan menggunakan tahun 2000 sebagai tahun dasar.

**LAMPIRAN 2****RINGKASAN HASIL ESTIMASI KESELURUHAN MODEL PENELITIAN  
BERDASARKAN MASING-MASING DEFINISI VARIABEL****UJI ASUMSI KLASIK**

<b>SECOND ORDER TEST</b>				
<b>Model</b>	<b>Model</b>	<b>Autokorelasi<sup>1</sup></b>	<b>Hetero.</b>	<b>Multi.</b>
Model A	LNQ=f(LNK1, LNL1)	Lolos	Lolos ( $\alpha=5\%$ )	Lolos <sup>2</sup>
Model B	LNQ=f(LNK1, LNL2)	Lolos	Lolos	Lolos <sup>2</sup>
Model C	LNQ=f(LNK1, LNL3)	Lolos	Lolos	Lolos <sup>2</sup>
<b>Model D</b>	<b>LNQ=f(LNK2, LNL1)</b>	<b>Lolos</b>	<b>Lolos</b>	<b>Lolos<sup>2</sup></b>
Model E	LNQ=f(LNK2, LNL2)	Lolos	Lolos ( $\alpha=5\%$ )	Lolos <sup>2</sup>
Model F	LNQ=f(LNK2, LNL3)	Lolos	Lolos ( $\alpha=5\%$ )	Lolos <sup>2</sup>
Model G	LNQ=f(LNK1, LNL1)	Tidak Lolos	Lolos	Lolos <sup>2</sup>
Model H	LNQ=f(LNK1, LNL2)	Tidak Lolos	Lolos	Lolos <sup>2</sup>
Model I	LNQ=f(LNK1, LNL3)	Tidak Lolos	Lolos ( $\alpha=5\%$ )	Lolos <sup>2</sup>

Keterangan:

- 1) DW-Tabel:  
dL=1,490, dU=1,641, 4-dU=2,359, dan 4-dL=2,510
- 2) Lolos berdasarkan kriteria *Klien's Rule of Thumb*.

**HASIL ESTIMASI MODEL UTAMA**

<b>FIRST ORDER TEST</b>							
<b>Model</b>	<b>Constant</b>	<b><math>\alpha</math></b>	<b><math>\beta</math></b>	<b>R<sup>2</sup></b>	<b>Adj.-R<sup>2</sup></b>	<b>F-Stat.</b>	<b>DW-Stat.</b>
Model A	1.345 (2.340)	0.795 (10.431)	0.155 (1.721)	0.953	0.952	542.386	1.853
Model B	2.136 (3.472)	0.821 (13.606)	0.156 (1.776)	0.954	0.952	544.335	1.684
Model C	2.062 (3.253)	0.845 (14.244)	0.116 (1.375)	0.952	0.951	531.479	1.712
Model D	2.018 (3.880)	0.767 (12.006)	0.159 (2.024)	0.962	0.960	666.632	1.918
Model E	2.839 (5.507)	0.798 (15.296)	0.151 (1.914)	0.961	0.960	661.406	1.808
Model F	2.806 (5.291)	0.817 (15.987)	0.117 (1.558)	0.961	0.959	646.393	1.831
Model G	2.188 (2.198)	0.202 (1.892)	0.811 (6.272)	0.867	0.862	172.424	1.600
Model H	6.662 (7.782)	0.398 (4.166)	0.712 (5.029)	0.843	0.837	142.164	1.584
<b>Model I</b>	<b>6.847 (7.772)</b>	<b>0.434 (4.613)</b>	<b>0.642 (4.710)</b>	<b>0.836</b>	<b>0.830</b>	<b>135.467</b>	<b>1.568</b>

**LAMPIRAN 3****HASIL ESTIMASI MODEL AWAL:****Model A: LNQ=f(LNK1, LNL1)**

Dependent Variable: LNQ  
 Method: Least Squares  
 Sample: 1 56  
 Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.345328	0.574994	2.339724	0.0231
LNK1	0.794561	0.076172	10.43109	0.0000
LNL1	0.155300	0.090226	1.721247	0.0910
R-squared	0.953418	Mean dependent var	19.56393	
Adjusted R-squared	0.951660	S.D. dependent var	2.257486	
S.E. of regression	0.496339	Akaike info criterion	1.488970	
Sum squared resid	13.05670	Schwarz criterion	1.597471	
Log likelihood	-38.69115	F-statistic	542.3860	
Durbin-Watson stat	1.852753	Prob(F-statistic)	0.000000	

**Model B: LNQ = f(LNK1, LNL2)**

Dependent Variable: LNQ  
 Method: Least Squares  
 Sample: 1 56  
 Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.135688	0.615114	3.472019	0.0010
LNK1	0.821425	0.060370	13.60646	0.0000
LNL2	0.155693	0.087662	1.776058	0.0815
R-squared	0.953577	Mean dependent var	19.56393	
Adjusted R-squared	0.951825	S.D. dependent var	2.257486	
S.E. of regression	0.495492	Akaike info criterion	1.485550	
Sum squared resid	13.01213	Schwarz criterion	1.594051	
Log likelihood	-38.59541	F-statistic	544.3346	
Durbin-Watson stat	1.683864	Prob(F-statistic)	0.000000	

**Model C: LNQ = f(LNK1, LNL3)**

Dependent Variable: LNQ  
 Method: Least Squares  
 Sample: 1 56  
 Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.062499	0.633957	3.253375	0.0020
LNK1	0.844812	0.059309	14.24414	0.0000
LNL3	0.115661	0.084137	1.374681	0.1750
R-squared	0.952507	Mean dependent var	19.56393	
Adjusted R-squared	0.950715	S.D. dependent var	2.257486	
S.E. of regression	0.501167	Akaike info criterion	1.508328	
Sum squared resid	13.31192	Schwarz criterion	1.616829	
Log likelihood	-39.23319	F-statistic	531.4790	
Durbin-Watson stat	1.712289	Prob(F-statistic)	0.000000	

**Model D: LNQ = f(LNK2, LNL1)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.018023	0.520065	3.880324	0.0003
LNK2	0.767192	0.063900	12.00612	0.0000
LNL1	0.158994	0.078561	2.023811	0.0480
R-squared	0.961768	Mean dependent var		19.56393
Adjusted R-squared	0.960325	S.D. dependent var		2.257486
S.E. of regression	0.449659	Akaike info criterion		1.291429
Sum squared resid	10.71624	Schwarz criterion		1.399930
Log likelihood	-33.16000	F-statistic		666.6324
Durbin-Watson stat	1.918188	Prob(F-statistic)		0.000000

**Model E: LNQ = f(LNK2, LNL2)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.838886	0.515487	5.507197	0.0000
LNK2	0.798449	0.052199	15.29622	0.0000
LNL2	0.150620	0.078673	1.914498	0.0610
R-squared	0.961477	Mean dependent var		19.56393
Adjusted R-squared	0.960024	S.D. dependent var		2.257486
S.E. of regression	0.451364	Akaike info criterion		1.298997
Sum squared resid	10.79766	Schwarz criterion		1.407498
Log likelihood	-33.37193	F-statistic		661.4061
Durbin-Watson stat	1.807734	Prob(F-statistic)		0.000000

**Model F: LNQ = f(LNK2, LNL3)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.806181	0.530404	5.290652	0.0000
LNK2	0.817043	0.051106	15.98738	0.0000
LNL3	0.117269	0.075250	1.558400	0.1251
R-squared	0.960618	Mean dependent var		19.56393
Adjusted R-squared	0.959132	S.D. dependent var		2.257486
S.E. of regression	0.456371	Akaike info criterion		1.321064
Sum squared resid	11.03857	Schwarz criterion		1.429565
Log likelihood	-33.98978	F-statistic		646.3929
Durbin-Watson stat	1.830721	Prob(F-statistic)		0.000000

**Model G: LNQ = f(LNK3, LNL1)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.187871	0.995387	2.198011	0.0323
LNK3	0.202115	0.106823	1.892053	0.0640
LNL1	0.810646	0.129248	6.272045	0.0000
R-squared	0.866784	Mean dependent var		19.56393
Adjusted R-squared	0.861757	S.D. dependent var		2.257486
S.E. of regression	0.839358	Akaike info criterion		2.539724
Sum squared resid	37.33966	Schwarz criterion		2.648225
Log likelihood	-68.11228	F-statistic		172.4245
Durbin-Watson stat	1.600412	Prob(F-statistic)		0.000000

**Model H: LNQ = f(LNK3, LNL2)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.661755	0.856081	7.781688	0.0000
LNK3	0.397761	0.095461	4.166724	0.0001
LNL2	0.712085	0.141593	5.029096	0.0000
R-squared	0.842883	Mean dependent var		19.56393
Adjusted R-squared	0.836954	S.D. dependent var		2.257486
S.E. of regression	0.911550	Akaike info criterion		2.704743
Sum squared resid	44.03897	Schwarz criterion		2.813244
Log likelihood	-72.73281	F-statistic		142.1637
Durbin-Watson stat	1.583856	Prob(F-statistic)		0.000000

**Model I: LNQ = f(LNK3, LNL3)**

Dependent Variable: LNQ

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.847161	0.880999	7.772041	0.0000
LNK3	0.434197	0.094124	4.613040	0.0000
LNL3	0.642394	0.136391	4.709937	0.0000
R-squared	0.836387	Mean dependent var		19.56393
Adjusted R-squared	0.830213	S.D. dependent var		2.257486
S.E. of regression	0.930203	Akaike info criterion		2.745254
Sum squared resid	45.85967	Schwarz criterion		2.853755
Log likelihood	-73.86712	F-statistic		135.4675
Durbin-Watson stat	1.568220	Prob(F-statistic)		0.000000

**LAMPIRAN 4****UJI HETEROSKEDASTISITAS: PARK-TEST****Model A**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.351528	7.680808	-0.175962	0.8610
LLNK1	12.10638	6.656367	1.818767	0.0746
LLNL1	-13.43417	6.987851	-1.922503	0.0599
R-squared	0.065379	Mean dependent var	-3.621059	
Adjusted R-squared	0.030110	S.D. dependent var	2.407297	
S.E. of regression	2.370778	Akaike info criterion	4.616397	
Sum squared resid	297.8912	Schwarz criterion	4.724898	
Log likelihood	-126.2591	F-statistic	1.853730	
Durbin-Watson stat	1.944769	Prob(F-statistic)	0.166665	

**Model B**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.065345	12.12400	-0.747719	0.4579
LLNK1	1.889118	6.573276	0.287394	0.7749
LLNL2	-0.169228	4.241011	-0.039903	0.9683
R-squared	0.005718	Mean dependent var	-3.827287	
Adjusted R-squared	-0.031802	S.D. dependent var	2.772935	
S.E. of regression	2.816682	Akaike info criterion	4.961080	
Sum squared resid	420.4861	Schwarz criterion	5.069581	
Log likelihood	-135.9102	F-statistic	0.152408	
Durbin-Watson stat	1.935214	Prob(F-statistic)	0.859013	

**Model C**

Dependent Variable: LNRES2

Method: Least Squares

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Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.630352	11.54768	-0.227782	0.8207
LLNK1	-1.451764	6.260813	-0.231881	0.8175
LLNL3	1.449570	4.039413	0.358857	0.7211
R-squared	0.003106	Mean dependent var	-3.815361	
Adjusted R-squared	-0.034513	S.D. dependent var	2.637660	
S.E. of regression	2.682790	Akaike info criterion	4.863675	
Sum squared resid	381.4603	Schwarz criterion	4.972176	
Log likelihood	-133.1829	F-statistic	0.082565	
Durbin-Watson stat	2.164145	Prob(F-statistic)	0.920870	

**Model D**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.978092	7.743276	0.642892	0.5231
LLNK2	-0.686430	6.267036	-0.109530	0.9132
LLNL1	-2.315082	6.916191	-0.334734	0.7391
R-squared	0.022846	Mean dependent var	-3.625847	
Adjusted R-squared	-0.014027	S.D. dependent var	2.408852	
S.E. of regression	2.425688	Akaike info criterion	4.662191	
Sum squared resid	311.8501	Schwarz criterion	4.770692	
Log likelihood	-127.5413	F-statistic	0.619581	
Durbin-Watson stat	2.108042	Prob(F-statistic)	0.542022	

**Model E**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.47137	8.311249	1.620860	0.1110
LLNK2	-8.879535	4.640142	-1.913634	0.0611
LLNL2	4.218859	3.147148	1.340534	0.1858
R-squared	0.074241	Mean dependent var	-3.653067	
Adjusted R-squared	0.039306	S.D. dependent var	2.159613	
S.E. of regression	2.116745	Akaike info criterion	4.389719	
Sum squared resid	237.4722	Schwarz criterion	4.498220	
Log likelihood	-119.9121	F-statistic	2.125154	
Durbin-Watson stat	2.153613	Prob(F-statistic)	0.129479	

**Model F**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.97946	9.540513	1.884538	0.0650
LLNK2	-11.99803	5.326435	-2.252543	0.0285
LLNL3	6.337295	3.612622	1.754209	0.0852
R-squared	0.091639	Mean dependent var	-3.788369	
Adjusted R-squared	0.057361	S.D. dependent var	2.502656	
S.E. of regression	2.429819	Akaike info criterion	4.665593	
Sum squared resid	312.9130	Schwarz criterion	4.774094	
Log likelihood	-127.6366	F-statistic	2.673421	
Durbin-Watson stat	2.072397	Prob(F-statistic)	0.078316	

**Model G**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.442550	7.801233	0.056728	0.9550
LLNK3	2.575222	6.025860	0.427362	0.6708
LLNL1	-3.585290	6.692577	-0.535711	0.5944
R-squared	0.005806	Mean dependent var	-2.147196	
Adjusted R-squared	-0.031711	S.D. dependent var	2.406030	
S.E. of regression	2.443880	Akaike info criterion	4.677134	
Sum squared resid	316.5452	Schwarz criterion	4.785635	
Log likelihood	-127.9598	F-statistic	0.154758	
Durbin-Watson stat	1.890520	Prob(F-statistic)	0.857008	

**Model H**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.02889	11.63444	-0.862000	0.3926
LLNK3	6.201910	6.486694	0.956097	0.3434
LLNL2	-4.808609	4.427707	-1.086027	0.2824
R-squared	0.021770	Mean dependent var	-2.082650	
Adjusted R-squared	-0.015145	S.D. dependent var	3.002266	
S.E. of regression	3.024915	Akaike info criterion	5.103726	
Sum squared resid	484.9558	Schwarz criterion	5.212227	
Log likelihood	-139.9043	F-statistic	0.589738	
Durbin-Watson stat	1.961986	Prob(F-statistic)	0.558070	

**Model I**

Dependent Variable: LNRES2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11.85436	8.059045	-1.470939	0.1472
LLNK3	7.693988	4.493258	1.712340	0.0927
LLNL3	-5.811660	3.067022	-1.894887	0.0636
R-squared	0.063570	Mean dependent var	-1.665278	
Adjusted R-squared	0.028233	S.D. dependent var	2.125544	
S.E. of regression	2.095324	Akaike info criterion	4.369376	
Sum squared resid	232.6902	Schwarz criterion	4.477877	
Log likelihood	-119.3425	F-statistic	1.798979	
Durbin-Watson stat	2.076448	Prob(F-statistic)	0.175425	

**LAMPIRAN 5****UJI MULTIKOLINEARITAS: REGRESI AUKSILIARI****Model A**

Dependent Variable: LNK1

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.528339	1.024713	0.515597	0.6082
LNL1	1.102377	0.058970	18.69374	0.0000
R-squared	0.866156	Mean dependent var		19.55556
Adjusted R-squared	0.863678	S.D. dependent var		2.401601
S.E. of regression	0.886715	Akaike info criterion		2.632476
Sum squared resid	42.45826	Schwarz criterion		2.704809
Log likelihood	-71.70931	F-statistic		349.4558
Durbin-Watson stat	1.295633	Prob(F-statistic)		0.000000

**Model B**

Dependent Variable: LNK1

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.258722	0.812060	10.17009	0.0000
LNL2	1.288706	0.091059	14.15244	0.0000
R-squared	0.787645	Mean dependent var		19.55556
Adjusted R-squared	0.783713	S.D. dependent var		2.401601
S.E. of regression	1.116905	Akaike info criterion		3.094061
Sum squared resid	67.36378	Schwarz criterion		3.166395
Log likelihood	-84.63372	F-statistic		200.2914
Durbin-Watson stat	1.826873	Prob(F-statistic)		0.000000

**Model C**

Dependent Variable: LNK1

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.967441	0.791613	11.32807	0.0000
LNL3	1.248784	0.091588	13.63473	0.0000
R-squared	0.774912	Mean dependent var		19.55556
Adjusted R-squared	0.770743	S.D. dependent var		2.401601
S.E. of regression	1.149905	Akaike info criterion		3.152296
Sum squared resid	71.40318	Schwarz criterion		3.224630
Log likelihood	-86.26430	F-statistic		185.9057
Durbin-Watson stat	1.856509	Prob(F-statistic)		0.000000

**Model D**

Dependent Variable: LNK2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.329641	1.106632	-0.297877	0.7669
LNL1	1.136890	0.063685	17.85187	0.0000
R-squared	0.855107	Mean dependent var		19.29329
Adjusted R-squared	0.852424	S.D. dependent var		2.492741
S.E. of regression	0.957602	Akaike info criterion		2.786292
Sum squared resid	49.51809	Schwarz criterion		2.858626
Log likelihood	-76.01618	F-statistic		318.6892
Durbin-Watson stat	1.441039	Prob(F-statistic)		0.000000

**Model E**

Dependent Variable: LNK2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.615672	0.855537	8.901631	0.0000
LNL2	1.332144	0.095934	13.88602	0.0000
R-squared	0.781218	Mean dependent var		19.29329
Adjusted R-squared	0.777167	S.D. dependent var		2.492741
S.E. of regression	1.176703	Akaike info criterion		3.198372
Sum squared resid	74.77008	Schwarz criterion		3.270706
Log likelihood	-87.55441	F-statistic		192.8214
Durbin-Watson stat	1.782721	Prob(F-statistic)		0.000000

**Model F**

Dependent Variable: LNK2

Method: Least Squares

Sample: 1 56

Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.362002	0.836575	9.995524	0.0000
LNL3	1.289257	0.096791	13.32008	0.0000
R-squared	0.766663	Mean dependent var		19.29329
Adjusted R-squared	0.762341	S.D. dependent var		2.492741
S.E. of regression	1.215217	Akaike info criterion		3.262783
Sum squared resid	79.74462	Schwarz criterion		3.335117
Log likelihood	-89.35793	F-statistic		177.4245
Durbin-Watson stat	1.802650	Prob(F-statistic)		0.000000