BAB V

PENUTUP

5.1. Kesimpulan

Berdasarkan hasil analisa perhitungan regresi dan efisiensi, serta pembahasan permintaan (konsumsi) energi listrik di Indonesia dalam periode 1990-2010, maka dapat ditarik kesimpulan sebagai berikut:

a. Baik secara agregat maupun sektoral jumlah permintaan listrik mengalami pertumbuhan yang lebih besar dibandingkan dengan laju pertumbuhan ekonomi selama 1990-2010. Hal ini terjadi karena jumlah permintaan energi listrik yang melebihi jumlah kapasitas pasokan energi listrik yang ada serta perilaku inefisien (pemborosan) dalam penggunaan energi listrik yang ada.

b. Berdasarkan hasil regresi dan pengujian secara statistik, hampir sebagian besar jumlah permintaan energi listrik baik secara agregat maupun secara sektoral, secara signifikan dan dominan dipengaruhi oleh jumlah pelanggan listrik selama 1990-2010.

c. Berdasarkan hasil analisa efisiensi penggunaan (konsumsi) listrik, dapat diketahui bahwa secara agregat menunjukan bahwa telah terjadi pemborosan dalam secara nasional atas penggunaan energi listrik. Secara sektoral, sektor industri dan sektor komersial merupakan sektor yang paling efisien dalam penggunaan energi listrik, sedangkan sektor umum

merupakan sektor paling tidak efisien (inefisien) selama tahun 1990-2010. Kondisi inefiseinsi tersebut terjadi karena diduga adanya aktivitas underground economy yang juga menggunakan energi listrik sebagi faktor inpit produksinya, akan tetapi nilai tambah yang dihasilkan tidak terhitung sebagai besaran pendapatan nasional yang tercatat *(unrecorded).*

d. Berdasarkan hasil analisis ekonometri dan analisis efisiensi menunjukan bahwa konsumsi energi listrik cukup besar dan inefisien. Dengan demikian konsumsi akan energi listrik sepanjang tahun 1990-2010 sebagian besar digunakan untuk pemenuhan kebutuhan konsumsi akhir dibandingkan untuk faktor input untuk menciptakan nilai tambah secara ekonomi.

e. Hipotesis yang menyatakan bahwa GDP riil berpengaruh secara signifkan dan positif terhadap jumlah permintaan listrik tidak terbukti pada permintaan listrik secara agregat maupun pada sektor rumah tangga dan sektor komersial.

f. Hipotesis yang menyatakan nilai impor stok perlatan listrik (M) berpengaruh secara positif dan signifikan tidak terbukti pada sektor industri, komersial dan umum. bahkan untuk sektor industri berpengaruh secara negatif.

5.2.Saran

a. Perlu dilakukan penambahan jumlah pasokan energi listrik agar mampu memenuhi jumlah permintaan energi listrik yang semakin meningkat.

b. Perlu dilakukan pengendalian laju pertumbuhan penduduk mengingat hampir sebagian besar jumlah permintaan energi listrik baik secara agregat maupun sektoral secara dominan dipengaruhi oleh jumlah pelanggan listrik. Hal ini menunjukan bahwa semakin besar jumlah penduduk maka akan semakin besar pula jumlah permintaan akan energi listrik untuk kebutuhan sehari-hari.
c. Berdasarkan fakta yang ada menunjukan bahwa dalam kurun waktu tahun 1990-2010, tingkat permintaan (konsumsi) akan energi listrik cukup besar. Namun demikian tingkat pemanfaatan energi listrik baik secara nasional maupun sektoral cenderung terjadi pemborosan (inefisien). Oleh karena itu, perlu diupayakan kampanye hemat energi listrik secara nasional dalam berbagai bentuk yang memungkinkan. Secara sektoral penghematan tersebut dapat dilakukan dengan pemilihan teknologi yang lebih ramah akan energi listrik.
d. Perlu dilakukan upaya penyeledikan dan penertiban atas dugaan adanya *underground economy* yang telah turut menyumbang besarnya permintaan energi listrik serta inefisiensi konsumsi listrik terhadap pertumbuhan ekonomi.

5.3. Keterbatasan Penelitian

Penulis menyadari bahwa penelitian ini masih banyak mengandung kekurangan. Adapun kekurangan – kekurangan yang penulis sadari dalam pembuatan penelitian ini adalah sebagai berikut :

a. Variabel independen yang digunakan dalam model regresi permintaan energi listrik baik secara nasional maupun sektoral belum mampu memberikan gambaran sesungguhnnya tentang permintaan energi listrik di Indonesia selama 1990-2010. Masih banyak variabel lain yang dapat digunakan untuk menganalisis jumlah permintaan energi listrik di Indonesia, seperti perubahan struktur industri, pendapatan per kapita, jumlah penduduk, struktur penduduk, perubahan cuaca atau musim dan harga energi pengganti listrik seperti batubara, LPG maupun BBM.
b. Cakupan wilayah penelitian ini cukup luas sehingga dengan berdasar pada model yang dibangun maupun variabel yang digunakan, sehingga sulit menjelaskan kondisi permintaan listrik yang sesungguhnya.
c. Model estimasi yang digunakan dalam penelitian ini melanggar asumsi klasik dalam hal hetereskedastisitas pada sektor industri serta autokorelasi pada model regresi agregat maupun sektoral. Namun demikian , setiap model telah diperbaiki dengan menggunakan metode *Heteroskedasticity and Autocorrelation Consistent Covariance Matirx (HAC)* dikembangkan oleh Newey Whitney dan Kenneth, sehingga meski masih mengandung heteroskedastisitas maupun autokorelasi dapat dilakukan uji statsitik t maupun uji F.

Berdasarkan berbagai keterbatasan dalam penelitian ini, maka dalam rangka mendukung pengembangan penelitian lebih lanjut mengenai topik analisis permintaan energi listrik di Indonesia dapat dilakukan beberapa hal sebagai berikut:

a. Pemilihan variabel independen yang lebih relevan dalam kondisi yang ada.
b. Pengembangan pada metode yang dapat digunakan untuk menganlisis faktor – faktor penentu permintaan energi listrik di Indonesia. Pada dasarnya penelitian ini adalah penelitian dengan data *time series* atau data runtut waktu. Banyak berbagai model estimasi yang bisa digunakan untuk menganlisis data runtut waktu seperti metode Box-Jenkin, model ARCH *(Autoregressive Conditional Heteroscedasticity)* dan GRCH *(Generalized Auoturegressive Conditional Heteroscedasticity)*, model koreksi kesalahan *(ECM/Error Corection Model)*, dan model VAR *(Vektor Autoregressive Model).* Pemilihan model yang tepat diharapkan dapat memberikan hasil estimasi yang baik.
c. Mempersempit cakupan wilayah penelitian menjadi sektoral, sehingga akan lebih menunjukan hasil yang lebih sesuai dengan perkembangan kondisi yang sebenarnya.

LAMPIRAN I. DATA PENELITIAN

TAHUN	KONSUMSI LISTRIK					JUMLAH PELANGGAN				
	AGRT	RT	IND.	KOM	UMU	AGRT.	RT	IND	KOM	UMU
1990	29482	9099	14543	2345	2301	11463738	10742448	36112	404213	280923
1991	32847	10326	16026	2832	2298	12396716	11616959	36141	437612	302004
1992	36481	11671	17755	3185	2353	13486556	12637059	36535	472939	340023
1993	40620	13185	19551	3771	2454	15157400	14220225	38769	514816	383599
1994	46546	15162	22465	4392	2651	17523018	16473051	42613	571770	435584
1995	51915	17676	25125	5289	2925	20114458	18938810	45593	637215	492840
1996	59407	20271	28029	6380	3319	22554849	21231975	48464	722148	552262
1997	67232	23542	30546	8667	3782	25209375	23732189	51570	812836	612780
1998	68125	25060	28222	9028	3725	26773644	25221647	43040	858215	650742
1999	74473	27746	32412	9569	3833	27726932	26015859	42742	997757	670574
2000	82580	30563	34013	10576	4012	28595405	26796675	44337	1062955	691438
2001	88230	33340	35593	11395	4192	29827728	27885612	46014	1172247	723855
2002	90746	33994	36828	11845	3989	30953919	28903325	46824	1245709	758061
2003	94481	35753	36497	13224	4967	32151416	29997554	46818	1310686	796358
2004	105921	40324	38588	15258	5927	33366446	31095970	46520	1382416	841540
2005	112334	41184	42448	17023	6377	34559353	32174485	46476	1455884	882508
2006	118118	43753	43615	18416	6826	35751224	33118262	46494	1655325	931143
2007	127095	45803	47325	20608	7511	37333729	34684540	46818	1610574	991797
2008	134399	47969	50184	22926	7939	38844086	36025071	47536	1716046	1055433
2009	140111	46204	54945	24825	8607	40117685	37099830	47900	1879429	1090526
2010	147297	50985	59826	27157	9330	42435387	39324520	48675	1912150	1150042

TAHUN	GDP RIIL (MILIAR) AHK 2000					NILAI IMPOR STOCK PERALATAN LISTRIK (MILIAR RUPIAH)
	AGRT.	RT.	IND.	KOM.	UMU	
1990	949641,10	539570,65	376882,81	359483,26	82831,10	1489,62
1991	1018062,60	590026,31	414203,12	404268,06	88652,60	2572,07
1992	1081248,00	614251,16	487723,87	395669,23	93822,00	3786,86
1993	1151490,20	717099,51	480728,61	473403,71	93900,30	3121,11
1994	1238158,73	767938,96	502692,44	521264,83	96064,70	3521,76
1995	1339959,02	853569,72	560102,87	550723,16	97352,20	4011,07
1996	1444839,93	929550,39	628505,37	576491,13	99973,90	4338,25
1997	1512883,59	994330,64	670207,43	599101,90	100035,10	8801,99
1998	1314112,06	923603,40	593978,65	482279,13	84658,10	9091,52
1999	1324658,76	962994,19	574901,90	490123,74	85246,40	1860,71
2000	1389715,12	982507,83	637879,24	535040,32	90779,70	12971,48
2001	1443048,69	1013418,04	671017,64	552687,65	97654,00	14408,16
2002	1506186,29	1129526,27	670252,90	603980,70	110333,60	15243,59
2003	1577233,40	1380170,94	689251,00	648242,93	121404,10	15332,65
2004	1656559,78	1337195,88	738825,66	679189,51	126248,60	25969,27
2005	1750776,92	1357096,82	814111,27	705563,10	134625,60	31569,05
2006	1847116,27	1370289,88	866297,53	740693,63	147563,70	29485,48
2007	1939659,88	1542744,92	907760,82	766165,65	155354,30	44779,81
2008	2036664,91	1398205,31	979635,82	763749,34	171079,85	161129,25
2009	2178858,69	1468360,26	1039315,59	806177,71	209170,43	117077,69
2010	2313873,60	1311966,33	1087520,59	870016,47	210562,50	216781,73

Sumber : PLN, BPS, Dep. Keuangan RI, Laporan Nota Keuangan dan APBN Berbagai Tahun

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LAMPIRAN II

HASIL REGRESI

1. Sektor Agregat

Dependent Variable: LLA
Method: Least Squares
Date: 05/27/13 Time: 19:14
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.910755	2.280167	-3.907940	0.0011
LPELA	0.962805	0.070351	13.68569	0.0000
LGDPA	0.154707	0.174183	0.888185	0.3868
LM	0.056871	0.020325	2.798062	0.0124

R-squared	0.993051	Mean dependent var	11.22098
Adjusted R-squared	0.991824	S.D. dependent var	0.498277
S.E. of regression	0.045054	Akaike info criterion	-3.192256
Sum squared resid	0.034508	Schwarz criterion	-2.993299
Log likelihood	37.51868	F-statistic	809.7480
Durbin-Watson stat	1.044721	Prob(F-statistic)	0.000000

2. Sektor Rumah Tangga

Dependent Variable: LLRT
Method: Least Squares
Date: 06/04/13 Time: 09:37
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.16512	1.192017	-11.04441	0.0000
LPELRT	1.076744	0.120629	8.926097	0.0000
LGDPRT	0.250894	0.149619	1.676892	0.1119
LM	0.029910	0.015775	1.896077	0.0751

R-squared	0.992011	Mean dependent var	10.17274
Adjusted R-squared	0.990601	S.D. dependent var	0.547270
S.E. of regression	0.053056	Akaike info criterion	-2.865285
Sum squared resid	0.047854	Schwarz criterion	-2.666329
Log likelihood	34.08550	F-statistic	703.6479
Durbin-Watson stat	0.769383	Prob(F-statistic)	0.000000

3. Sektor Industri

Dependent Variable: LLIND
Method: Least Squares
Date: 06/04/13 Time: 09:38
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-18.33960	3.137760	-5.844807	0.0000
LPELIND	0.353911	0.368320	0.960881	0.3501
LGDPIND	1.412801	0.300825	4.696429	0.0002
LM	-0.036963	0.048133	-0.767935	0.4531

R-squared	0.960804	Mean dependent var	10.36287
Adjusted R-squared	0.953887	S.D. dependent var	0.400565
S.E. of regression	0.086017	Akaike info criterion	-1.898894
Sum squared resid	0.125783	Schwarz criterion	-1.699937
Log likelihood	23.93839	F-statistic	138.9050
Durbin-Watson stat	0.701813	Prob(F-statistic)	0.000000

4. Sektor Komersial

Dependent Variable: LLKOM
Method: Least Squares
Date: 06/04/13 Time: 09:40
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.99284	2.741069	-5.104882	0.0001
LPELKOM	1.278004	0.092944	13.75032	0.0000
LGDPKOM	0.291406	0.200614	1.452573	0.1646
LM	0.022184	0.029627	0.748780	0.4642

R-squared	0.991066	Mean dependent var	9.145186
Adjusted R-squared	0.989489	S.D. dependent var	0.747697
S.E. of regression	0.076655	Akaike info criterion	-2.129357
Sum squared resid	0.099892	Schwarz criterion	-1.930401
Log likelihood	26.35825	F-statistic	628.6085
Durbin-Watson stat	0.753642	Prob(F-statistic)	0.000000

5. Sektor Umum

Dependent Variable: LLUMU
Method: Least Squares
Date: 06/04/13 Time: 09:41
Sample: 1990 2010
Included observations: 21

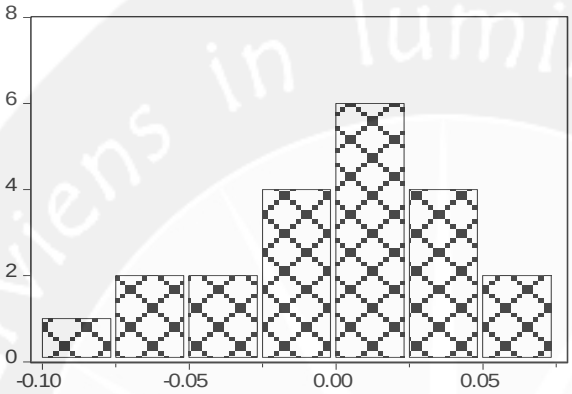
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.936053	2.559978	-3.881303	0.0012
LPELUMU	0.670623	0.092537	7.247110	0.0000
LGDPUMU	0.555462	0.164983	3.366782	0.0037
LM	0.021427	0.043685	0.490487	0.6301

R-squared	0.973369	Mean dependent var	8.359727
Adjusted R-squared	0.968670	S.D. dependent var	0.460051
S.E. of regression	0.081431	Akaike info criterion	-2.008480
Sum squared resid	0.112727	Schwarz criterion	-1.809523
Log likelihood	25.08904	F-statistic	207.1187
Durbin-Watson stat	0.802296	Prob(F-statistic)	0.000000

LAMPIRAN III

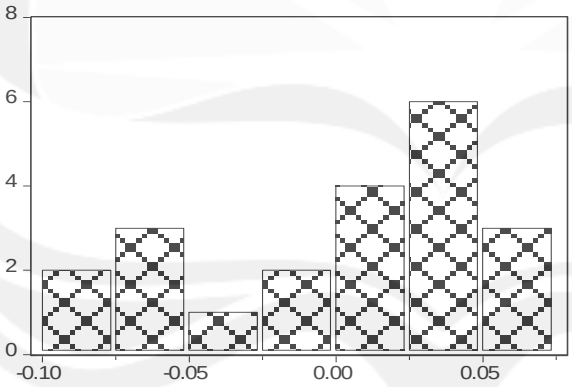
UJI NORMALITAS

1. Agregat



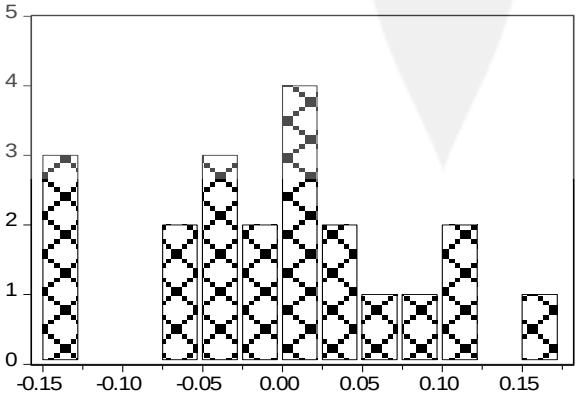
Series: Residuals	
Sample 1990 2010	
Observations 21	
Mean	5.56E-15
Median	0.008803
Maximum	0.053250
Minimum	-0.098804
Std. Dev.	0.041538
Skewness	-0.787686
Kurtosis	2.903776
Jarque-Bera	2.179676
Probability	0.336271

2. Sektor Rumah Tangga



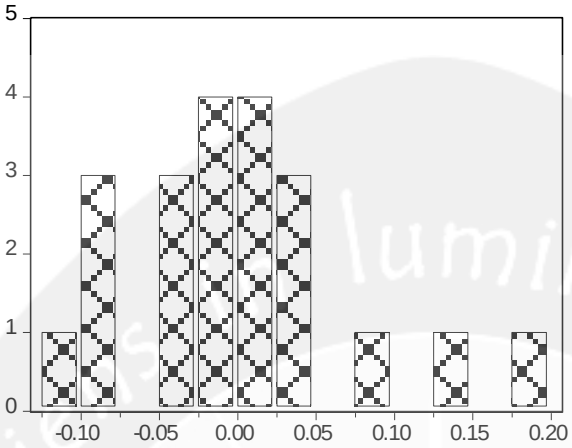
Series: Residuals	
Sample 1990 2010	
Observations 21	
Mean	1.01E-16
Median	0.014977
Maximum	0.072065
Minimum	-0.083589
Std. Dev.	0.048915
Skewness	-0.413420
Kurtosis	1.858041
Jarque-Bera	1.739268
Probability	0.419105

3. Sektor Industri



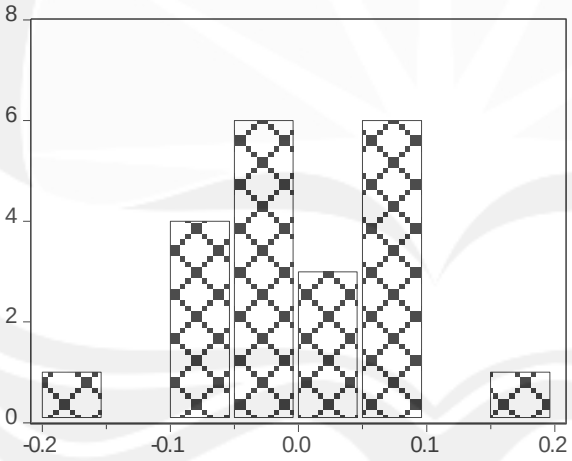
Series: Residuals	
Sample 1990 2010	
Observations 21	
Mean	1.96E-15
Median	0.000136
Maximum	0.157957
Minimum	-0.129771
Std. Dev.	0.079304
Skewness	0.136390
Kurtosis	2.497200
Jarque-Bera	0.286315
Probability	0.866618

4. Sektor Komersial



Series: Residuals	
Sample 1990 2010	
Observations 21	
Mean	-1.50E-16
Median	-0.010459
Maximum	0.180283
Minimum	-0.101370
Std. Dev.	0.070673
Skewness	0.935284
Kurtosis	3.848871
Jarque-Bera	3.692154
Probability	0.157855

5. Sektor Umum



Series: Residuals	
Sample 1990 2010	
Observations 21	
Mean	1.52E-16
Median	-0.008982
Maximum	0.160034
Minimum	-0.164570
Std. Dev.	0.075076
Skewness	-0.082048
Kurtosis	2.855964
Jarque-Bera	0.041715
Probability	0.979359

LAMPIRAN IV

UJI MULTIKOLINIERITAS

1. Agregat

Dependent Variable: LPELA
Method: Least Squares
Date: 06/17/13 Time: 00:55
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16.41350	6.587373	-2.491661	0.0227
LGDPA	1.816441	0.396560	4.580494	0.0002
LM	-0.050106	0.067065	-0.747131	0.4646

R-squared	0.873886	Mean dependent var	17.05801
Adjusted R-squared	0.859873	S.D. dependent var	0.403243
S.E. of regression	0.150948	Akaike info criterion	-0.812196
Sum squared resid	0.410137	Schwarz criterion	-0.662979
Log likelihood	11.52806	F-statistic	62.36375
Durbin-Watson stat	0.332013	Prob(F-statistic)	0.000000

Dependent Variable: LGDPA
Method: Least Squares
Date: 06/17/13 Time: 00:57
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.52446	0.897594	13.95336	0.0000
LPELA	0.296313	0.064690	4.580494	0.0002
LM	0.088052	0.018048	4.878800	0.0001

R-squared	0.944012	Mean dependent var	18.81383
Adjusted R-squared	0.937791	S.D. dependent var	0.244436
S.E. of regression	0.060967	Akaike info criterion	-2.625413
Sum squared resid	0.066905	Schwarz criterion	-2.476196
Log likelihood	30.56684	F-statistic	151.7481
Durbin-Watson stat	1.295399	Prob(F-statistic)	0.000000

Dependent Variable: LM
Method: Least Squares
Date: 06/17/13 Time: 01:01
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-97.39913	13.12049	-7.423436	0.0000
LPELA	-0.600294	0.803466	-0.747131	0.4646
LGDPA	6.466685	1.325466	4.878800	0.0001

R-squared	0.882399	Mean dependent var	14.02412
Adjusted R-squared	0.869332	S.D. dependent var	1.445368
S.E. of regression	0.522473	Akaike info criterion	1.671076
Sum squared resid	4.913601	Schwarz criterion	1.820293
Log likelihood	-14.54630	F-statistic	67.52965
Durbin-Watson stat	1.822351	Prob(F-statistic)	0.000000

2. Sektor Rumah Tangga

Dependent Variable: LPELRT
Method: Least Squares
Date: 06/17/13 Time: 01:06
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.658783	2.163604	-1.691059	0.1081
LGDPRT	1.097806	0.136060	8.068524	0.0000
LM	0.029724	0.030016	0.990266	0.3352

R-squared	0.939347	Mean dependent var	16.99053
Adjusted R-squared	0.932607	S.D. dependent var	0.399341
S.E. of regression	0.103669	Akaike info criterion	-1.563661
Sum squared resid	0.193451	Schwarz criterion	-1.414444
Log likelihood	19.41844	F-statistic	139.3843
Durbin-Watson stat	0.647424	Prob(F-statistic)	0.000000

Dependent Variable: LGDPRT
Method: Least Squares
Date: 06/17/13 Time: 01:06
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.036452	1.225537	4.925556	0.0001
LPELRT	0.713602	0.088443	8.068524	0.0000
LM	0.019180	0.024436	0.784921	0.4427

R-squared	0.938159	Mean dependent var	18.42991
Adjusted R-squared	0.931288	S.D. dependent var	0.318858
S.E. of regression	0.083582	Akaike info criterion	-1.994405
Sum squared resid	0.125748	Schwarz criterion	-1.845187
Log likelihood	23.94125	F-statistic	136.5346
Durbin-Watson stat	0.995540	Prob(F-statistic)	0.000000

Dependent Variable: LM
Method: Least Squares
Date: 06/17/13 Time: 01:07
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-47.30871	13.88862	-3.406292	0.0031
LPELRT	1.738164	1.755249	0.990266	0.3352
LGDPRT	1.725483	2.198288	0.784921	0.4427

R-squared	0.729248	Mean dependent var	14.02412
Adjusted R-squared	0.699164	S.D. dependent var	1.445368
S.E. of regression	0.792763	Akaike info criterion	2.504979
Sum squared resid	11.31252	Schwarz criterion	2.654197
Log likelihood	-23.30228	F-statistic	24.24069
Durbin-Watson stat	0.921764	Prob(F-statistic)	0.000008

3. Sektor Industri

Dependent Variable: LPELIND
Method: Least Squares
Date: 06/17/13 Time: 01:09
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.823434	1.998574	0.412011	0.6852
LGDPIND	0.601618	0.130199	4.620750	0.0002
LM	-0.068034	0.026299	-2.586935	0.0186

R-squared	0.741877	Mean dependent var	10.69997
Adjusted R-squared	0.713197	S.D. dependent var	0.102786
S.E. of regression	0.055046	Akaike info criterion	-2.829738
Sum squared resid	0.054541	Schwarz criterion	-2.680520
Log likelihood	32.71224	F-statistic	25.86715
Durbin-Watson stat	1.125342	Prob(F-statistic)	0.000005

Dependent Variable: LGDPIND
Method: Least Squares
Date: 06/17/13 Time: 01:09
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.266108	1.965421	3.188177	0.0051
LPELIND	0.901871	0.195178	4.620750	0.0002
LM	0.148775	0.013880	10.71872	0.0000

R-squared	0.952039	Mean dependent var	18.00254
Adjusted R-squared	0.946710	S.D. dependent var	0.291952
S.E. of regression	0.067396	Akaike info criterion	-2.424890
Sum squared resid	0.081761	Schwarz criterion	-2.275672
Log likelihood	28.46134	F-statistic	178.6512
Durbin-Watson stat	1.978795	Prob(F-statistic)	0.000000

Dependent Variable: LM
Method: Least Squares
Date: 06/17/13 Time: 01:10
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-47.96602	10.40522	-4.609805	0.0002
LPELIND	-3.983670	1.539919	-2.586935	0.0186
LGDPIND	5.811142	0.542149	10.71872	0.0000

R-squared	0.923565	Mean dependent var	14.02412
Adjusted R-squared	0.915073	S.D. dependent var	1.445368
S.E. of regression	0.421214	Akaike info criterion	1.240210
Sum squared resid	3.193577	Schwarz criterion	1.389428
Log likelihood	-10.02221	F-statistic	108.7477
Durbin-Watson stat	2.153931	Prob(F-statistic)	0.000000

4. Sektor Komersial

Dependent Variable: LPELKOM
Method: Least Squares
Date: 06/17/13 Time: 01:12
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.61170	6.485688	-1.636172	0.1192
LGDPKOM	1.270527	0.411275	3.089240	0.0063
LM	0.120165	0.069590	1.726758	0.1013

R-squared	0.868209	Mean dependent var	13.78537
Adjusted R-squared	0.853565	S.D. dependent var	0.508000
S.E. of regression	0.194395	Akaike info criterion	-0.306284
Sum squared resid	0.680210	Schwarz criterion	-0.157067
Log likelihood	6.215986	F-statistic	59.28991
Durbin-Watson stat	0.583158	Prob(F-statistic)	0.000000

Dependent Variable: LGDPKOM
Method: Least Squares
Date: 06/17/13 Time: 01:12
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.17762	0.851125	15.48258	0.0000
LPELKOM	0.272711	0.088278	3.089240	0.0063
LM	0.066949	0.031027	2.157790	0.0447

R-squared	0.877949	Mean dependent var	17.87594
Adjusted R-squared	0.864388	S.D. dependent var	0.244565
S.E. of regression	0.090063	Akaike info criterion	-1.845060
Sum squared resid	0.146003	Schwarz criterion	-1.695843
Log likelihood	22.37313	F-statistic	64.73952
Durbin-Watson stat	0.893882	Prob(F-statistic)	0.000000

Dependent Variable: LM
Method: Least Squares
Date: 06/17/13 Time: 01:13
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-57.15159	17.14886	-3.332675	0.0037
LPELKOM	1.182613	0.684875	1.726758	0.1013
LGDPKOM	3.069655	1.422592	2.157790	0.0447

R-squared	0.839779	Mean dependent var	14.02412
Adjusted R-squared	0.821977	S.D. dependent var	1.445368
S.E. of regression	0.609841	Akaike info criterion	1.980328
Sum squared resid	6.694318	Schwarz criterion	2.129546
Log likelihood	-17.79344	F-statistic	47.17244
Durbin-Watson stat	1.486008	Prob(F-statistic)	0.000000

5. Sektor Umum

Dependent Variable: LPELUMU
Method: Least Squares
Date: 06/17/13 Time: 01:14
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.57251	5.681894	2.388729	0.0281
LGDPUMU	-0.282201	0.414935	-0.680110	0.5051
LM	0.312893	0.083320	3.755306	0.0014

R-squared	0.786774	Mean dependent var	13.37509
Adjusted R-squared	0.763082	S.D. dependent var	0.426128
S.E. of regression	0.207415	Akaike info criterion	-0.176630
Sum squared resid	0.774375	Schwarz criterion	-0.027413
Log likelihood	4.854620	F-statistic	33.20864
Durbin-Watson stat	1.106915	Prob(F-statistic)	0.000001

Dependent Variable: LGDPUMU
Method: Least Squares
Date: 06/17/13 Time: 01:15
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.51298	1.293973	11.21582	0.0000
LPELUMU	-0.088778	0.130535	-0.680110	0.5051
LM	0.208450	0.038485	5.416407	0.0000

R-squared	0.855399	Mean dependent var	16.24888
Adjusted R-squared	0.839332	S.D. dependent var	0.290234
S.E. of regression	0.116336	Akaike info criterion	-1.333107
Sum squared resid	0.243613	Schwarz criterion	-1.183890
Log likelihood	16.99763	F-statistic	53.24003
Durbin-Watson stat	1.823043	Prob(F-statistic)	0.000000

Dependent Variable: LM
Method: Least Squares
Date: 06/17/13 Time: 01:16
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-53.06447	5.860553	-9.054516	0.0000
LPELUMU	1.403974	0.373864	3.755306	0.0014
LGDPUMU	2.973148	0.548915	5.416407	0.0000

R-squared	0.916837	Mean dependent var	14.02412
Adjusted R-squared	0.907597	S.D. dependent var	1.445368
S.E. of regression	0.439361	Akaike info criterion	1.324572
Sum squared resid	3.474681	Schwarz criterion	1.473789
Log likelihood	-10.90800	F-statistic	99.22177
Durbin-Watson stat	2.611265	Prob(F-statistic)	0.000000

LAMPIRAN V

UJI HETEROSKEDASTISITAS

1. Agregat

White Heteroskedasticity Test *(no cross term)*:

F-statistic	1.421266	Probability	0.274304
Obs*R-squared	7.949339	Probability	0.241838

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:19
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23.43720	10.35208	2.264010	0.0400
LPELA	1.099049	0.445152	2.468930	0.0270
LPELA^2	-0.032245	0.013109	-2.459698	0.0275
LGDPA	-3.500182	1.440755	-2.429409	0.0292
LGDPA^2	0.092884	0.038249	2.428386	0.0292
LM	0.025356	0.013920	1.821550	0.0900
LM^2	-0.000916	0.000503	-1.820665	0.0901

R-squared	0.378540	Mean dependent var	0.001643
Adjusted R-squared	0.112200	S.D. dependent var	0.002323
S.E. of regression	0.002189	Akaike info criterion	-9.149470
Sum squared resid	6.71E-05	Schwarz criterion	-8.801296
Log likelihood	103.0694	F-statistic	1.421266
Durbin-Watson stat	1.268900	Prob(F-statistic)	0.274304

White Heteroskedasticity Test *(cross term)*:

F-statistic	2.287748	Probability	0.098351
Obs*R-squared	13.68750	Probability	0.133884

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:20
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	37.76969	29.88912	1.263660	0.2325
LPELA	-3.968910	2.040096	-1.945452	0.0777
LPELA^2	-0.326236	0.106538	-3.062157	0.0108
LPELA*LGDPA	0.818861	0.304100	2.692735	0.0209
LPA*LAPP	-0.021312	0.012879	-1.654816	0.1262
LGDPA	-0.623570	4.562352	-0.136677	0.8938
LGDPA^2	-0.356234	0.240793	-1.479417	0.1671
LGDPA*LM	-0.000260	0.037749	-0.006875	0.9946
LM	0.350371	0.514512	0.680978	0.5100
LM^2	0.000771	0.002194	0.351196	0.7321

R-squared	0.651786	Mean dependent var	0.001643
Adjusted R-squared	0.366883	S.D. dependent var	0.002323
S.E. of regression	0.001849	Akaike info criterion	-9.443009
Sum squared resid	3.76E-05	Schwarz criterion	-8.945618
Log likelihood	109.1516	F-statistic	2.287748
Durbin-Watson stat	2.266797	Prob(F-statistic)	0.098351

2. Sektor Rumah Tangga

White Heteroskedasticity Test *(no cross term)*:

F-statistic	1.148038	Probability	0.385994
Obs*R-squared	6.925086	Probability	0.327831

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:21
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.483614	3.658928	-0.132174	0.8967
LPELRT	0.664101	0.657582	1.009914	0.3297
LPELRT^2	-0.019517	0.019364	-1.007917	0.3306
LGDPRT	-0.553878	0.906158	-0.611238	0.5508
LGDPR^2	0.014780	0.024412	0.605444	0.5546
LM	0.002676	0.010248	0.261157	0.7978
LM^2	-5.89E-05	0.000369	-0.159557	0.8755

R-squared	0.329766	Mean dependent var	0.002279
Adjusted R-squared	0.042523	S.D. dependent var	0.002163
S.E. of regression	0.002116	Akaike info criterion	-9.216918
Sum squared resid	6.27E-05	Schwarz criterion	-8.868744
Log likelihood	103.7776	F-statistic	1.148038
Durbin-Watson stat	1.980771	Prob(F-statistic)	0.385994

White Heteroskedasticity Test *(cross term)*:

F-statistic	1.162432	Probability	0.400187
Obs*R-squared	10.23673	Probability	0.331662

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:21
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.932750	6.403753	-0.301815	0.7684
LPELRT	-0.103793	0.984402	-0.105438	0.9179
LPELRT^2	-0.124557	0.078241	-1.591969	0.1397
LPELRT*LGDPRT	0.229954	0.162418	1.415815	0.1845
LPELRT*LM	0.007951	0.008812	0.902337	0.3862
LGDPRT	0.343527	1.359449	0.252696	0.8052
LGDPRT^2	-0.114172	0.087752	-1.301081	0.2198
LGDPR*LM	-0.004201	0.013225	-0.317648	0.7567
LM	-0.042976	0.148614	-0.289177	0.7778
LM^2	-0.000541	0.000800	-0.676061	0.5130

R-squared	0.487464	Mean dependent var	0.002279
Adjusted R-squared	0.068116	S.D. dependent var	0.002163
S.E. of regression	0.002088	Akaike info criterion	-9.199459
Sum squared resid	4.80E-05	Schwarz criterion	-8.702067
Log likelihood	106.5943	F-statistic	1.162432
Durbin-Watson stat	2.392309	Prob(F-statistic)	0.400187

3. Sektor Industri

White Heteroskedasticity Test *(no cross term)*:

F-statistic	6.611041	Probability	0.001765
Obs*R-squared	15.52170	Probability	0.016565

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:22
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.20487	12.99247	1.016348	0.3267
LPELIND	-9.521243	2.869110	-3.318536	0.0051
LPELIND^2	0.444260	0.134069	3.313668	0.0051
LGDPIND	4.233128	1.068373	3.962220	0.0014
LGDPIND^2	-0.116544	0.029734	-3.919486	0.0015
LM	-0.081827	0.025643	-3.190979	0.0065
LM^2	0.002675	0.000933	2.865434	0.0125

R-squared	0.739128	Mean dependent var	0.005990
Adjusted R-squared	0.627326	S.D. dependent var	0.007510
S.E. of regression	0.004585	Akaike info criterion	-7.671033
Sum squared resid	0.000294	Schwarz criterion	-7.322859
Log likelihood	87.54585	F-statistic	6.611041
Durbin-Watson stat	1.662978	Prob(F-statistic)	0.001765

White Heteroskedasticity Test *(cross term)*:

F-statistic	4.312619	Probability	0.013038
Obs*R-squared	16.36271	Probability	0.059683

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:23
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	32.47989	41.01999	0.791806	0.4452
LPELIND	-4.902520	4.659455	-1.052166	0.3153
LPELIND^2	0.863527	0.505093	1.709641	0.1154
LPELIND*LGDPIND	-0.838254	0.812043	-1.032279	0.3241
LPELIND*LM	0.107772	0.093388	1.154023	0.2729
LGDPIND	-1.310771	5.963164	-0.219811	0.8300
LGDPIND^2	0.334584	0.385010	0.869029	0.4034
LGDPI*LM	-0.125478	0.101572	-1.235362	0.2424
LM	0.785730	1.266069	0.620606	0.5475
LM^2	0.011371	0.007608	1.494505	0.1632

R-squared	0.779177	Mean dependent var	0.005990
Adjusted R-squared	0.598503	S.D. dependent var	0.007510
S.E. of regression	0.004759	Akaike info criterion	-7.551984
Sum squared resid	0.000249	Schwarz criterion	-7.054592
Log likelihood	89.29583	F-statistic	4.312619
Durbin-Watson stat	1.938678	Prob(F-statistic)	0.013038

4. Sektor Komersial

White Heteroskedasticity Test *(no cross term)*:

F-statistic	1.369582	Probability	0.292688
Obs*R-squared	7.767184	Probability	0.255661

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:23
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.33315	24.27624	1.620233	0.1275
LPELKOM	1.546805	0.705441	2.192680	0.0457
LPELKOM^2	-0.056596	0.025922	-2.183328	0.0465
LGDPKOM	-5.611877	3.184208	-1.762409	0.0998
LGDPKOM^2	0.157034	0.089521	1.754172	0.1013
LM	0.032491	0.034091	0.953080	0.3567
LM^2	-0.001056	0.001204	-0.876894	0.3953

R-squared	0.369866	Mean dependent var	0.004757
Adjusted R-squared	0.099808	S.D. dependent var	0.008227
S.E. of regression	0.007806	Akaike info criterion	-6.606729
Sum squared resid	0.000853	Schwarz criterion	-6.258555
Log likelihood	76.37066	F-statistic	1.369582
Durbin-Watson stat	1.894365	Prob(F-statistic)	0.292688

White Heteroskedasticity Test *(cross term)*:

F-statistic	0.789599	Probability	0.632760
Obs*R-squared	8.242072	Probability	0.509947

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:24
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16.48425	94.86359	-0.173768	0.8652
LPELKOM	-0.198124	4.653041	-0.042579	0.9668
LPELKOM^2	-0.125363	0.152882	-0.819998	0.4296
LPELKOM*LGDPKOM	0.200757	0.470023	0.427121	0.6775
LPELKOM*LM	0.003591	0.030213	0.118841	0.9075
LGDPKOM	2.515886	14.11676	0.178220	0.8618
LGDPKOM^2	-0.163257	0.567698	-0.287577	0.7790
LGDPKOM*LM	0.039615	0.090697	0.436783	0.6707
LM	-0.648135	1.346224	-0.481447	0.6396
LM^2	-0.003851	0.006820	-0.564739	0.5836

R-squared	0.392480	Mean dependent var	0.004757
Adjusted R-squared	-0.104583	S.D. dependent var	0.008227
S.E. of regression	0.008647	Akaike info criterion	-6.357562
Sum squared resid	0.000822	Schwarz criterion	-5.860170
Log likelihood	76.75440	F-statistic	0.789599
Durbin-Watson stat	1.892787	Prob(F-statistic)	0.632760

5. Sektor Umum

White Heteroskedasticity Test *(no cross term)*:

F-statistic	0.839826	Probability	0.559629
Obs*R-squared	5.557975	Probability	0.474478

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/17/13 Time: 01:24
Sample: 1990 2010
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.961140	9.840440	-0.300915	0.7679
LPELUMU	-0.787963	0.584609	-1.347846	0.1991
LPELUMU^2	0.030095	0.022389	1.344220	0.2003
LGDPUMU	1.010103	1.170171	0.863210	0.4026
LGDPUMU^2	-0.031080	0.035956	-0.864392	0.4019
LM	-0.008273	0.043693	-0.189347	0.8525
LM^2	0.000140	0.001580	0.088710	0.9306

R-squared	0.264665	Mean dependent var	0.005368
Adjusted R-squared	-0.050478	S.D. dependent var	0.007494
S.E. of regression	0.007680	Akaike info criterion	-6.639101
Sum squared resid	0.000826	Schwarz criterion	-6.290926
Log likelihood	76.71056	F-statistic	0.839826
Durbin-Watson stat	2.318361	Prob(F-statistic)	0.559629

White Heteroskedasticity Test *(cross term)*:

F-statistic	1.586473	Probability	0.232116
Obs*R-squared	11.86171	Probability	0.221218

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/17/13 Time: 01:25

Sample: 1990 2010

Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-98.36191	54.09726	-1.818242	0.0963
LPELUMU	6.241622	4.477756	1.393918	0.1909
LPELUMU^2	-0.011326	0.047254	-0.239688	0.8150
LPELUMU*LGDPUMU	-0.459205	0.356821	-1.286935	0.2245
LPELUMU*LM	0.112522	0.050114	2.245298	0.0463
LGDPUMU	9.900924	5.429192	1.823646	0.0955
LGDPUMU^2	-0.187009	0.180226	-1.037634	0.3217
LGDPUMU*LM	0.165421	0.102350	1.616228	0.1343
LM	-3.436028	1.753128	-1.959941	0.0758
LM^2	-0.027521	0.014053	-1.958360	0.0760

R-squared	0.564843	Mean dependent var	0.005368
Adjusted R-squared	0.208806	S.D. dependent var	0.007494
S.E. of regression	0.006665	Akaike info criterion	-6.878006
Sum squared resid	0.000489	Schwarz criterion	-6.380614
Log likelihood	82.21906	F-statistic	1.586473
Durbin-Watson stat	2.861196	Prob(F-statistic)	0.232116

LAMPIRAN VI

PENYEMBUHAN AUTOKORELASI UJI HAC

1. Agregat

Dependent Variable: LLA
Method: Least Squares
Date: 06/17/13 Time: 01:36
Sample: 1990 2010
Included observations: 21
Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.910755	3.008721	-2.961642	0.0087
LPELA	0.962805	0.061493	15.65727	0.0000
LGDPA	0.154707	0.217868	0.710095	0.4873
LM	0.056871	0.026326	2.160311	0.0453

R-squared	0.993051	Mean dependent var	11.22098
Adjusted R-squared	0.991824	S.D. dependent var	0.498277
S.E. of regression	0.045054	Akaike info criterion	-3.192256
Sum squared resid	0.034508	Schwarz criterion	-2.993299
Log likelihood	37.51868	F-statistic	809.7480
Durbin-Watson stat	1.044721	Prob(F-statistic)	0.000000

2. Sektor Rumah Tangga

Dependent Variable: LLRT
Method: Least Squares
Date: 06/17/13 Time: 01:41
Sample: 1990 2010
Included observations: 21
Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.16512	1.052116	-12.51299	0.0000
LPELRT	1.076744	0.126383	8.519682	0.0000
LGDPRT	0.250894	0.148212	1.692804	0.1087
LM	0.029910	0.014535	2.057782	0.0553

R-squared	0.992011	Mean dependent var	10.17274
Adjusted R-squared	0.990601	S.D. dependent var	0.547270
S.E. of regression	0.053056	Akaike info criterion	-2.865285
Sum squared resid	0.047854	Schwarz criterion	-2.666329
Log likelihood	34.08550	F-statistic	703.6479
Durbin-Watson stat	0.769383	Prob(F-statistic)	0.000000

3. Sektor Industri

Dependent Variable: LLIND
Method: Least Squares
Date: 06/17/13 Time: 01:42
Sample: 1990 2010
Included observations: 21
Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-18.33960	4.103796	-4.468935	0.0003
LPELIND	0.353911	0.645054	0.548654	0.5904
LGDPIND	1.412801	0.436717	3.235050	0.0049
LM	-0.036963	0.070430	-0.524820	0.6065

R-squared	0.960804	Mean dependent var	10.36287
Adjusted R-squared	0.953887	S.D. dependent var	0.400565
S.E. of regression	0.086017	Akaike info criterion	-1.898894
Sum squared resid	0.125783	Schwarz criterion	-1.699937
Log likelihood	23.93839	F-statistic	138.9050
Durbin-Watson stat	0.701813	Prob(F-statistic)	0.000000

4. Sektor Komersial

Dependent Variable: LLKOM
Method: Least Squares
Date: 06/17/13 Time: 01:43
Sample: 1990 2010
Included observations: 21
Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13.99284	2.535574	-5.518606	0.0000
LPELKOM	1.278004	0.101383	12.60576	0.0000
LGDPKOM	0.291406	0.190694	1.528134	0.1449
LM	0.022184	0.021621	1.026037	0.3193

R-squared	0.991066	Mean dependent var	9.145186
Adjusted R-squared	0.989489	S.D. dependent var	0.747697
S.E. of regression	0.076655	Akaike info criterion	-2.129357
Sum squared resid	0.099892	Schwarz criterion	-1.930401
Log likelihood	26.35825	F-statistic	628.6085
Durbin-Watson stat	0.753642	Prob(F-statistic)	0.000000

5. Sektor Umum

Dependent Variable: LLUMU
Method: Least Squares
Date: 06/17/13 Time: 01:45
Sample: 1990 2010
Included observations: 21
Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.936053	1.561744	-6.362153	0.0000
LPELUMU	0.670623	0.102707	6.529488	0.0000
LGDPUMU	0.555462	0.108615	5.114039	0.0001
LM	0.021427	0.030015	0.713869	0.4850

R-squared	0.973369	Mean dependent var	8.359727
Adjusted R-squared	0.968670	S.D. dependent var	0.460051
S.E. of regression	0.081431	Akaike info criterion	-2.008480
Sum squared resid	0.112727	Schwarz criterion	-1.809523
Log likelihood	25.08904	F-statistic	207.1187
Durbin-Watson stat	0.802296	Prob(F-statistic)	0.000000

LAMPIRAN VII.

ELASTISITAS KONSUMSI LISTRIK

TAHUN	ELASTISITAS KONSUMSI LISTRIK				
	AGREGAT	RT	IND	KOM	UMU
1991	1,58	1,44	1,03	1,67	-0,02
1992	1,78	3,17	0,61	-5,87	0,41
1993	1,75	0,77	-7,06	0,94	51,77
1994	1,94	2,11	3,26	1,63	3,47
1995	1,40	1,49	1,04	3,61	7,72
1996	1,84	1,65	0,95	4,41	5,00
1997	2,80	2,32	1,35	9,14	227,93
1998	-0,10	-0,91	0,67	-0,21	0,10
1999	11,61	2,51	-4,62	3,68	4,18
2000	2,22	5,01	0,45	1,15	0,72
2001	1,78	2,89	0,89	2,35	0,59
2002	0,65	0,17	-30,45	0,43	-0,37
2003	0,87	0,23	-0,32	1,59	2,44
2004	2,41	-4,11	0,80	3,22	4,85
2005	1,06	1,43	0,98	2,98	1,14
2006	0,94	6,42	0,43	1,64	0,73
2007	1,52	0,37	1,78	3,46	1,90
2008	1,15	-0,50	0,76	-35,67	0,56
2009	0,61	-0,73	1,56	1,49	0,38
2010	0,83	-0,97	1,92	1,19	12,62
Rata-rata	**1,93**	**1,24**	**-1,20**	**0,14**	**16,31**

Sumber: Lampiran A, diolah.