LAMPIRAN

Lampiran I

Tahun	Y	X1	X2	X3
2000	407,2	4731,21	9725	2004,88
2001	492,4	4159,86	10265	3069,89
2002	575,2	3980,82	9260	3001,91
2003	471,3	4302,94	8570	2189,57
2004	512,6	4655,82	8985	2415,71
2005	866,4	4571,87	9705	4628,31
2006	1902,1	4356,75	9200	9348,82
2007	1338,1	4356,35	9125	6339,25
2008	1546,6	4849,18	9666	9704,92
2009	2075	5035,14	9447	5149,92
2010	2876,3	5495,39	9036	7479,08
2011	1043,5	5905,63	9113	8828,17
2012	958,4	5954,48	9718	7962,25
2013	902,2	4919,56	12250	7389,67
2014	432,4	4601,46	12550	6971

Penjelasan:

1. Variabel dependen ekspor biji tembaga Indonesia ke Jepang (Y) dalam *Free On Board* (FOB) Juta dollar USD.
2. Variabel independen PDB Jepang X_1 dalam satuan milyar dollar USD.
3. Kurs rupiah - dollar USD X_2 satuan rupiah.
4. Harga biji tembaga Indonesia X_3 Dollar USD /Ton.

Lampiran II

Hasil Estimasi Uji MWD untuk Model Linier

Dependent Variable: Y
Method: Least Squares
Date: 04/17/16 Time: 11:07
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2576.232	685.3881	3.758793	0.0037
X1	0.012568	0.106518	0.117987	0.9084
X2	-0.266486	0.047965	-5.555892	0.0002
X3	0.184101	0.023663	7.780147	0.0000
Z1	1469.545	157.5265	9.328873	0.0000

R-squared	0.946998	Mean dependent var	1093.313
Adjusted *R-squared*	0.925797	S.D. dependent var	728.6091
S.E. of regression	198.4751	Akaike info criterion	13.68041
Sum squared resid	393923.7	Schwarz criterion	13.91642
Log likelihood	-97.60305	Hannan-Quinn criter.	13.67789
F-statistic	44.66775	Durbin-Watson stat	2.148615
Prob(F-statistic)	0.000002		

Lampiran III

Hasil Estimasi Uji MWD untuk Model *Log* Linier

Dependent Variable: *LOG*(Y)
Method: Least Squares
Date: 04/17/16 Time: 11:15
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.18699	3.882093	6.487992	0.0001
LOG(X1)	-0.235357	0.313121	-0.751649	0.4696
LOG(X2)	-2.664254	0.306854	-8.682471	0.0000
LOG(X3)	0.942047	0.069129	13.62738	0.0000
Z2	-0.000636	6.23E-05	-10.20990	0.0000

R-squared	0.974796	Mean dependent var	6.807197
Adjusted *R-squared*	0.964715	S.D. dependent var	0.629676
S.E. of regression	0.118280	Akaike info criterion	-1.170319
Sum squared resid	0.139902	Schwarz criterion	-0.934302
Log likelihood	13.77739	Hannan-Quinn criter.	-1.172833
F-statistic	96.69229	Durbin-Watson stat	2.172020
Prob(F-statistic)	0.000000		

Lampiran IV

Hasil Regresi Model *Log*

Dependent Variable: *LOG*(Y)
Method: Least Squares
Date: 04/17/16 Time: 13:30
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.67797	12.50976	2.052634	0.0647
LOG(X1)	-0.115915	1.008384	-0.114952	0.9106
LOG(X2)	-2.821724	0.987642	-2.857031	0.0156
LOG(X3)	0.940259	0.222780	4.220578	0.0014

R-squared	0.712069	Mean dependent var	6.807197
Adjusted *R-squared*	0.633543	S.D. dependent var	0.629676
S.E. of regression	0.381179	Akaike info criterion	1.132082
Sum squared resid	1.598270	Schwarz criterion	1.320895
Log likelihood	-4.490614	Hannan-Quinn criter.	1.130071
F-statistic	9.067884	Durbin-Watson stat	1.820045
Prob(F-statistic)	0.002605		

Uji Multikolinieritas

	LOG(X1)	*LOG*(X2)	*LOG*(X3)
LOG(X1)	1	-0.0048465	0.5195305
LOG(X2)	-0.0048465	1	0.2524622
LOG(X3)	0.5195305	0.2524622	1

Lampiran V

Hasil Uji *White Heteroskedastisitas*

Heteroskedasticity Test: White

F-statistic	1.011933	Prob. F(9,5)	0.5247
Obs*R-squared	9.683640	Prob. Chi-Square(9)	0.3767
Scaled explained SS	5.791963	Prob. Chi-Square(9)	0.7605

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 04/22/16 Time: 21:02
Sample: 2000 2014
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	289.1420	1265.046	0.228562	0.8283
LOG(X1)^2	-5.694172	7.551269	-0.754068	0.4848
LOG(X1)*LOG(X2)	1.722369	13.20779	0.130406	0.9013
LOG(X1)*LOG(X3)	1.244525	2.496165	0.498575	0.6392
LOG(X1)	71.11984	117.9960	0.602731	0.5730
LOG(X2)^2	8.041146	9.301364	0.864513	0.4268
LOG(X2)*LOG(X3)	-2.290307	3.854799	-0.594144	0.5783
LOG(X2)	-143.8979	229.7884	-0.626219	0.5586
LOG(X3)^2	-0.380189	0.229625	-1.655693	0.1587
LOG(X3)	16.84474	29.08728	0.579110	0.5876

R-squared	0.645576	Mean dependent var	0.106551
Adjusted R-squared	0.007613	S.D. dependent var	0.164493
S.E. of regression	0.163866	Akaike info criterion	-0.544818
Sum squared resid	0.134260	Schwarz criterion	-0.072784
Log likelihood	14.08613	Hannan-Quinn criter.	-0.549846
F-statistic	1.011933	Durbin-Watson stat	2.113636
Prob(F-statistic)	0.524711		

Lampiran VI

Hasil Uji *LM Autokorelasi*

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.340865	Prob. F(2,9)	0.0479
Obs*R-squared	7.365000	Prob. Chi-Square(2)	0.0252

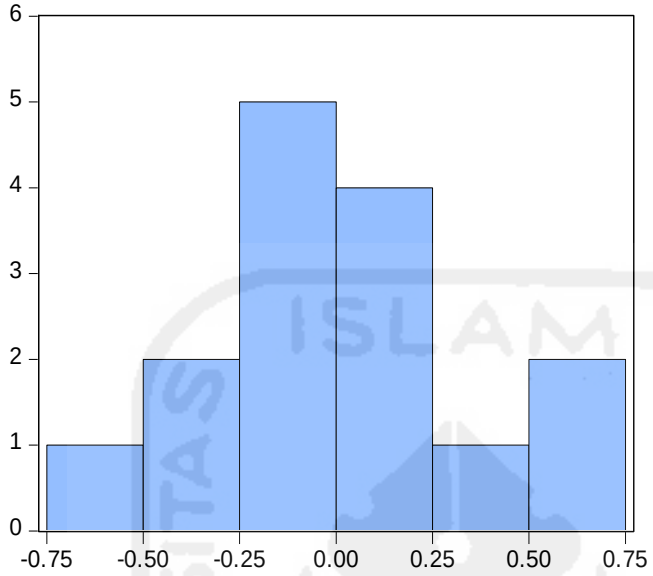
Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 04/23/16 Time: 11:40
Sample: 2000 2014
Included observations: 15
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.935245	9.919711	0.195091	0.8497
LOG(X1)	1.501806	0.947571	1.584901	0.1474
LOG(X2)	-1.589079	0.966160	-1.644737	0.1344
LOG(X3)	-0.007127	0.179960	-0.039604	0.9693
RESID(-1)	0.038376	0.258490	0.148460	0.8853
RESID(-2)	-1.087822	0.370587	-2.935401	0.0166

R-squared	0.491000	Mean dependent var	4.27E-15
Adjusted *R-squared*	0.208222	S.D. dependent var	0.337879
S.E. of regression	0.300651	Akaike info criterion	0.723441
Sum squared resid	0.813519	Schwarz criterion	1.006661
Log likelihood	0.574191	Hannan-Quinn criter.	0.720424
F-statistic	1.736346	Durbin-Watson stat	1.582215
Prob(F-statistic)	0.222305		

Lampiran VII

Hasil Uji Normalitas



Series: Residuals	
Sample 2000 2014	
Observations 15	
Mean	4.27e-15
Median	-0.008509
Maximum	0.740208
Minimum	-0.537024
Std. Dev.	0.337879
Skewness	0.776358
Kurtosis	3.224407
Jarque-Bera	1.538303
Probability	0.463406