

# LAMPIRAN

**Lampiran 1.**  
**Data Penelitian**

Tahun	Ekspor (Ton)	Produksi Dunia (Ton)	Kurs (Rp)	Harga (US\$/Ton)	GDPUS (US\$ Triliun)
1986	303	35941618	1283	1280	8620329556000
1987	2440	38734382	1644	1300	8918556111500
1988	3812	37288974	1686	1360	9291088337100
1989	301	38315806	1770	1400	9632318080900
1990	2774	43468901	1843	1480	9813979778100
1991	7916	43996586	1950	1580	9803355251400
1992	10145	45734253	2030	1790	10148672802600
1993	1959	47116504	2087	1570	10428049966100
1994	25340	48615761	2161	1520	10848179316700
1995	23721	50406745	2249	1530	11139375598200
1996	24150	49444194	2342	1420	11559608689600
1997	26749	50144766	2909	1370	12073689496400
1998	22391	49006290	10014	2190	12614760729600
1999	23533	49343377	7855	2260	13214370076500
2000	31373	51225620	8422	2220	13759791088900
2001	34820	51972109	10261	2910	13897160696600
2002	48550	53566981	9311	2990	14139206884300
2003	36833	54282133	8577	3100	14543759394100
2004	31186	54960182	8939	3120	15096260979200
2005	51456	57425983	9705	2950	15626624902700
2006	62410	57930985	9159	3190	16072760713800
2007	60648	61923706	9141	3640	16374313262900
2008	55431	60359208	9699	3010	16351949257700
2009	46706	61266622	10390	3980	15937140029500
2010	47097	60104774	9090	3940	16345731096000
2011	51664	58444931	8770	3520	16599226497500
2012	61511	61876444	9387	3920	16972633708700
2013	75930	62070018	10461	3990	17285283381500
2014	86797	60987911	11865	3590	17709113869100
2015	85715	59235236	13389	4500	18219297584000
2016	86783	59437531	12935	4570	18504833179600
2017	88098	60773435	13343	5020	18915087242800
2018	90123	61774432	13751	5600	19468792890719,4

## Lampiran 2. Hasil Uji Stasioner

### Uji Stasioner Ekspor Tingkat Level

Null Hypothesis: EKSPOR has a unit root  
Exogenous: Constant  
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.372460	0.9024
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
Dependent Variable: D(EKSPOR)  
Method: Least Squares  
Date: 01/20/20 Time: 10:01  
Sample (adjusted): 1987 2018  
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EKSPOR(-1)	-0.019299	0.051816	-0.372460	0.7122
C	3541.786	2435.980	1.453947	0.1563
R-squared	0.004603	Mean dependent var		2806.875
Adjusted R-squared	-0.028577	S.D. dependent var		7968.055
S.E. of regression	8081.104	Akaike info criterion		20.89291
Sum squared resid	1.96E+09	Schwarz criterion		20.98451
Log likelihood	-332.2865	Hannan-Quinn criter.		20.92327
F-statistic	0.138726	Durbin-Watson stat		2.003723
Prob(F-statistic)	0.712169			

## Uji Stasioner Ekspor Tingkat 1<sup>st</sup> Difference

Null Hypothesis: D(EKSPOR) has a unit root  
 Exogenous: Constant  
 Lag Length: 8 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.778659	0.0094
Test critical values: 1% level	-3.752946	
5% level	-2.998064	
10% level	-2.638752	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(EKSPOR,2)  
 Method: Least Squares  
 Date: 02/06/20 Time: 10:03  
 Sample (adjusted): 1996 2018  
 Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EKSPOR(-1))	-5.243663	1.387705	-3.778659	0.0023
D(EKSPOR(-1),2)	4.473652	1.338581	3.342085	0.0053
D(EKSPOR(-2),2)	3.734230	1.223427	3.052270	0.0093
D(EKSPOR(-3),2)	3.335817	1.104117	3.021252	0.0098
D(EKSPOR(-4),2)	2.662879	0.951501	2.798609	0.0151
D(EKSPOR(-5),2)	2.160240	0.764267	2.826550	0.0143
D(EKSPOR(-6),2)	1.601185	0.561253	2.852878	0.0136
D(EKSPOR(-7),2)	0.876216	0.358477	2.444270	0.0295
D(EKSPOR(-8),2)	0.693924	0.199826	3.472646	0.0041
C	14952.26	3987.333	3.749941	0.0024
R-squared	0.824990	Mean dependent var	158.4348	
Adjusted R-squared	0.703829	S.D. dependent var	9989.985	
S.E. of regression	5436.707	Akaike info criterion	20.33875	
Sum squared resid	3.84E+08	Schwarz criterion	20.83245	
Log likelihood	-223.8957	Hannan-Quinn criter.	20.46292	
F-statistic	6.809053	Durbin-Watson stat	1.970436	
Prob(F-statistic)	0.001130			

## Uji Stasioner Produksi Dunia Tingkat Level

Null Hypothesis: PRODUKSIDUNIA has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.034271	0.2715
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(PRODUKSIDUNIA)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:09  
 Sample (adjusted): 1987 2018  
 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PRODUKSIDUNIA(-1)	-0.072666	0.035721	-2.034271	0.0508
C	4611795.	1891212.	2.438540	0.0209

R-squared	0.121221	Mean dependent var	807275.4
Adjusted R-squared	0.091928	S.D. dependent var	1668352.
S.E. of regression	1589820.	Akaike info criterion	31.45660
Sum squared resid	7.58E+13	Schwarz criterion	31.54821
Log likelihood	-501.3056	Hannan-Quinn criter.	31.48697
F-statistic	4.138257	Durbin-Watson stat	2.320791
Prob(F-statistic)	0.050848		

## Uji Stasioner Produksi Dunia Tingkat 1<sup>st</sup> Difference

Null Hypothesis: D(PRODUKSIDUNIA) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.240449	0.0000
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	
10% level	-2.619160	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PRODUKSIDUNIA,2)

Method: Least Squares

Date: 01/20/20 Time: 10:11

Sample (adjusted): 1988 2018

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PRODUKSIDUNIA(-1))	-1.122482	0.179872	-6.240449	0.0000
C	841339.0	332826.2	2.527863	0.0172

R-squared	0.573173	Mean dependent var	57798.94
Adjusted R-squared	0.558455	S.D. dependent var	2513895.
S.E. of regression	1670455.	Akaike info criterion	31.55743
Sum squared resid	8.09E+13	Schwarz criterion	31.64995
Log likelihood	-487.1402	Hannan-Quinn criter.	31.58759
F-statistic	38.94320	Durbin-Watson stat	1.858162
Prob(F-statistic)	0.000001		

## Uji Stasioner Kurs Tingkat Level

Null Hypothesis: KURS has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.860565	0.7876
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(KURS)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:13  
 Sample (adjusted): 1987 2018  
 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KURS(-1)	-0.054383	0.063194	-0.860565	0.3963
C	771.4386	513.6582	1.501852	0.1436

R-squared	0.024091	Mean dependent var	389.6250
Adjusted R-squared	-0.008439	S.D. dependent var	1458.043
S.E. of regression	1464.182	Akaike info criterion	17.47644
Sum squared resid	64314880	Schwarz criterion	17.56805
Log likelihood	-277.6231	Hannan-Quinn criter.	17.50681
F-statistic	0.740572	Durbin-Watson stat	2.359815
Prob(F-statistic)	0.396303		

## Uji Stasioner Kurs Tingkat 1<sup>st</sup> Difference

Null Hypothesis: D(KURS) has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.706873	0.0000
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	
10% level	-2.619160	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(KURS,2)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:14  
 Sample (adjusted): 1988 2018  
 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(KURS(-1))	-1.216023	0.181310	-6.706873	0.0000
C	474.5884	273.6054	1.734573	0.0934

R-squared	0.608014	Mean dependent var	1.516129
Adjusted R-squared	0.594497	S.D. dependent var	2311.397
S.E. of regression	1471.878	Akaike info criterion	17.48881
Sum squared resid	62826297	Schwarz criterion	17.58132
Log likelihood	-269.0765	Hannan-Quinn criter.	17.51896
F-statistic	44.98215	Durbin-Watson stat	2.075746
Prob(F-statistic)	0.000000		



## Uji Stasioner Harga Dunia Tingkat Level

Null Hypothesis: HARGADUNIA has a unit root  
 Exogenous: Constant  
 Lag Length: 3 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.720573	0.9905
Test critical values:		
1% level	-3.679322	
5% level	-2.967767	
10% level	-2.622989	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(HARGADUNIA)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:15  
 Sample (adjusted): 1990 2018  
 Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HARGADUNIA(-1)	0.046633	0.064717	0.720573	0.4781
D(HARGADUNIA(-1))	-0.430969	0.216871	-1.987217	0.0584
D(HARGADUNIA(-2))	-0.124320	0.231824	-0.536268	0.5967
D(HARGADUNIA(-3))	0.411913	0.205516	2.004290	0.0564
C	35.20722	174.8718	0.201332	0.8421
R-squared	0.368691	Mean dependent var		144.8276
Adjusted R-squared	0.263473	S.D. dependent var		386.9904
S.E. of regression	332.1195	Akaike info criterion		14.60445
Sum squared resid	2647281.	Schwarz criterion		14.84019
Log likelihood	-206.7646	Hannan-Quinn criter.		14.67828
F-statistic	3.504069	Durbin-Watson stat		1.916284
Prob(F-statistic)	0.021739			

## Uji Stasioner Harga Dunia Tingkat 1<sup>st</sup> Difference

Null Hypothesis: D(HARGADUNIA) has a unit root  
 Exogenous: Constant  
 Lag Length: 2 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.029757	0.0032
Test critical values:		
1% level	-3.679322	
5% level	-2.967767	
10% level	-2.622989	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(HARGADUNIA,2)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:20  
 Sample (adjusted): 1990 2018  
 Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(HARGADUNIA(-1))	-0.961300	0.473604	-2.029757	0.0532
D(HARGADUNIA(-1),2)	-0.398055	0.351441	-1.132638	0.2681
D(HARGADUNIA(-2),2)	-0.458208	0.193329	-2.370091	0.0258
C	146.0866	82.27630	1.775561	0.0880
R-squared	0.758723	Mean dependent var		18.62069
Adjusted R-squared	0.729770	S.D. dependent var		632.7193
S.E. of regression	328.9105	Akaike info criterion		14.55689
Sum squared resid	2704554.	Schwarz criterion		14.74548
Log likelihood	-207.0749	Hannan-Quinn criter.		14.61596
F-statistic	26.20516	Durbin-Watson stat		1.921283
Prob(F-statistic)	0.000000			

## Uji Stasioner GDPUS Tingkat Level

Null Hypothesis: GDPUS has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.694390	0.4244
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(GDPUS)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:24  
 Sample (adjusted): 1987 2018  
 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPUS(-1)	-0.183618	0.108368	-1.694390	0.1005
C	2.81E+17	1.52E+17	1.853591	0.0737

R-squared	0.087340	Mean dependent var	3.39E+16
Adjusted R-squared	0.056918	S.D. dependent var	2.41E+17
S.E. of regression	2.34E+17	Akaike info criterion	82.88722
Sum squared resid	1.64E+36	Schwarz criterion	82.97883
Log likelihood	-1324.196	Hannan-Quinn criter.	82.91759
F-statistic	2.870957	Durbin-Watson stat	2.715014
Prob(F-statistic)	0.100550		

## Uji Stasioner GDP US Tingkat 1<sup>st</sup> Difference

Null Hypothesis: D(GDPUS) has a unit root  
 Exogenous: Constant  
 Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.284846	0.0000
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	
10% level	-2.619160	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
 Dependent Variable: D(GDPUS,2)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:25  
 Sample (adjusted): 1988 2018  
 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPUS(-1))	-1.496692	0.161197	-9.284846	0.0000
C	5.05E+16	3.92E+16	1.288408	0.2078

R-squared	0.748282	Mean dependent var	8.24E+1
Adjusted R-squared	0.739602	S.D. dependent var	4
S.E. of regression	2.16E+17	Akaike info criterion	4.24E+1
Sum squared resid	1.36E+36	Schwarz criterion	7
Log likelihood	-1280.333	Hannan-Quinn criter.	82.73118
F-statistic	86.20837	Durbin-Watson stat	82.82369
Prob(F-statistic)	0.000000		82.76133
			2.290976

### Lampiran 3. Hasil Uji Estimasi Jangka Panjang

Dependent Variable: LOG(EKSPOR)  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:27  
 Sample: 1986 2018  
 Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-169.1611	23.74264	-7.124783	0.0000
LOG(PRODUKSIDUN IA)	8.919000	1.362129	6.547835	0.0000
LOG(KURS)	0.580383	0.343475	1.689739	0.1022
LOG(HARGADUNIA)	-1.570004	0.617550	-2.542311	0.0168
LOG(GDPUS)	0.671177	0.243239	2.759333	0.0101
R-squared	0.891357	Mean dependent var	9.987087	
Adjusted R-squared	0.875836	S.D. dependent var	1.536861	
S.E. of regression	0.541542	Akaike info criterion	1.749936	
Sum squared resid	8.211509	Schwarz criterion	1.976680	
Log likelihood	-23.87395	Hannan-Quinn criter.	1.826229	
F-statistic	57.43095	Durbin-Watson stat	1.761319	
Prob(F-statistic)	0.000000			

### Lampiran 4. Hasil Uji ECT Tingkat Level

Null Hypothesis: ECT has a unit root  
Exogenous: Constant  
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.418274	0.0001
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation  
Dependent Variable: D(ECT)  
Method: Least Squares  
Date: 01/20/20 Time: 10:30  
Sample (adjusted): 1987 2018  
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.938047	0.173127	-5.418274	0.0000
C	0.029755	0.087129	0.341506	0.7351

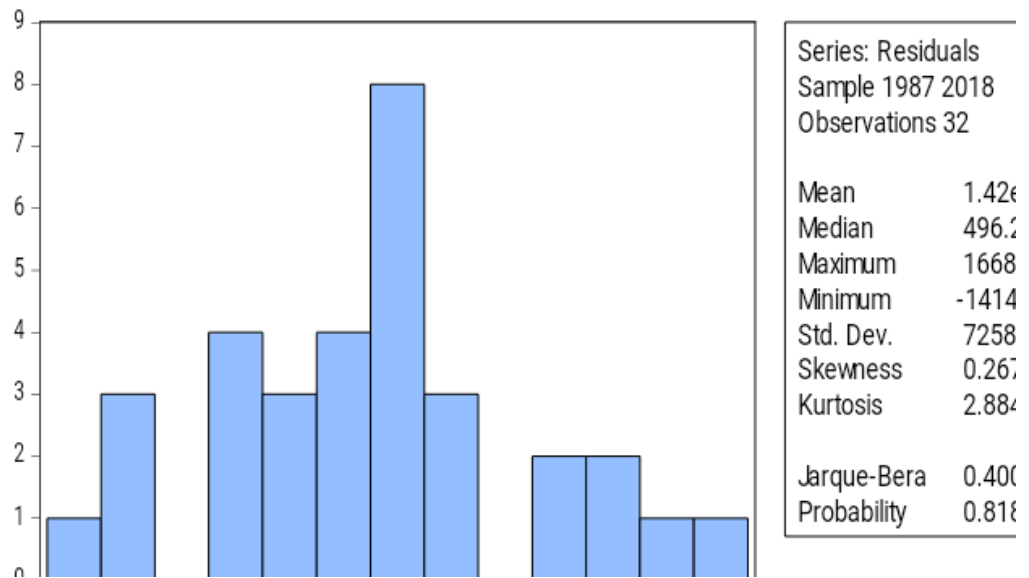
R-squared	0.494590	Mean dependent var	0.039328
Adjusted R-squared	0.477742	S.D. dependent var	0.681876
S.E. of regression	0.492774	Akaike info criterion	1.482928
Sum squared resid	7.284780	Schwarz criterion	1.574537
Log likelihood	-21.72685	Hannan-Quinn criter.	1.513294
F-statistic	29.35769	Durbin-Watson stat	1.835809
Prob(F-statistic)	0.000007		

### Lampiran 5. Hasil Uji Estimasi Jangka Pendek

Dependent Variable: D(LOG(EKSPOR))  
 Method: Least Squares  
 Date: 01/20/20 Time: 10:32  
 Sample (adjusted): 1987 2018  
 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.070932	0.107389	0.660521	0.5147
D(LOG(PRODUKSIDUNI A))	5.821781	2.782659	2.092164	0.0463
D(LOG(KURS))	0.275847	0.486867	0.566576	0.5759
D(LOG(HARGADUNIA))	-0.918843	0.861696	-1.066319	0.2961
D(LOG(GDPUS))	0.804518	0.157190	5.118121	0.0000
ECT(-1)	-0.976026	0.187747	-5.198617	0.0000
R-squared	0.746369	Mean dependent var	0.177975	
Adjusted R-squared	0.697593	S.D. dependent var	0.917919	
S.E. of regression	0.504778	Akaike info criterion	1.637963	
Sum squared resid	6.624813	Schwarz criterion	1.912789	
Log likelihood	-20.20741	Hannan-Quinn criter.	1.729060	
F-statistic	15.30219	Durbin-Watson stat	1.541388	
Prob(F-statistic)	0.000000			

### Lampiran 6. Uji Normalitas





## Lampiran 7. Hasil Uji Linearitas

Ramsey RESET Test

Equation: UNTITLED

Specification: D(LOG(EKSPOR)) C D(LOG(PRODUKSIDUNIA))

D(LOG(KURS)) D(LOG(HARGADUNIA)) D(LOG(GDPUS)) ECT(-1)

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.769832	25	0.4486
F-statistic	0.592642	(1, 25)	0.4486
Likelihood ratio	0.749730	1	0.3866

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.153409	1	0.153409
Restricted SSR	6.624813	26	0.254801
Unrestricted SSR	6.471404	25	0.258856
Unrestricted SSR	6.471404	25	0.258856

LR test summary:

	Value	df
Restricted LogL	-20.20741	26
Unrestricted LogL	-19.83255	25

Unrestricted Test Equation:

Dependent Variable: D(LOG(EKSPOR))

Method: Least Squares

Date: 01/20/20 Time: 10:48

Sample: 1987 2018

Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.049312	0.111824	0.440977	0.6630
D(LOG(PRODUKSIDUNIA))	4.377854	3.374086	1.297493	0.2063
D(LOG(KURS))	0.182224	0.505572	0.360432	0.7216
D(LOG(HARGADUNIA))	-0.657075	0.932717	-0.704474	0.4876
D(LOG(GDPUS))	0.793867	0.159039	4.991643	0.0000
ECT(-1)	-0.938106	0.195541	-4.797490	0.0001
FITTED^2	0.064883	0.084282	0.769832	0.4486
R-squared	0.752242	Mean dependent var		0.177975
Adjusted R-squared	0.692780	S.D. dependent var		0.917919
S.E. of regression	0.508779	Akaike info criterion		1.677034
Sum squared resid	6.471404	Schwarz criterion		1.997664
Log likelihood	-19.83255	Hannan-Quinn criter.		1.783314
F-statistic	12.65080	Durbin-Watson stat		1.570683
Prob(F-statistic)	0.000002			

