

# LAMPIRAN

## Lampiran I

### Data Permintaan Ekspor Kakao Indonesia Oleh Malaysia 2000-2014

Tahun	Ekspor Kakao Indonesia ke Malaysia (ton)	Harga Kakao Indonesia (US\$/Kg)	Harga Kakao Dunia (US\$/Kg)	GDP Malaysia (US\$)	Harga Gula Dunia (US\$/kg)
2000	61820,6	0,032351676	10938,3	4004,557	2,27
2001	78217,7	0,025582445	14560	3878,771	2,19
2002	75935,3	0,02636455	21009	4132,668	3,04
2003	132482,8	0,015118944	18623	4431,239	3,27
2004	126208,1	0,015878537	16907,8	4924,586	3,31
2005	157535,1	0,012727322	17202,5	5564,173	2,47
2006	193357,2	0,010374581	15965,4	6194,672	1,7
2007	184776,2	0,010861788	19308,95	7240,682	2,76
2008	211470,3	0,009495423	27484,5	8486,599	2,37
2009	183539,1	0,010945897	28106	7312,008	2,37
2010	203847,7	0,009860303	28141,83	9069,042	1,56
2011	143296,0	0,014033888	24846,32	10427,756	1,28
2012	102350,1	0,019658017	21467,4	10834,659	1,07
2013	134774,4	0,014936071	28034,7	10973,656	1,21
2014	43733,0	0,04605218	35951,6	11307,065	1,15

## Lampiran II

### Uji Akar Unit Menggunakan Data pada Level

#### Variabel EXP Kakao Indonesia ke Malaysia

##### Level

Null Hypothesis: Y has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 3 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.837317	0.9255
Test critical values:		
1% level	-5.124875	
5% level	-3.933364	
10% level	-3.420030	

##### First Difference

Null Hypothesis: D(Y) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 1 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.468273	0.0212
Test critical values:		
1% level	-4.992279	
5% level	-3.875302	
10% level	-3.388330	

## Variabel HKI

### Level

Null Hypothesis: HKI has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 2 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	1.568127	0.9999
Test critical values:		
1% level	-4.992279	
5% level	-3.875302	
10% level	-3.388330	

### First Difference

Null Hypothesis: D(HKI) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 1 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.962845	0.0104
Test critical values:		
1% level	-4.992279	
5% level	-3.875302	
10% level	-3.388330	

## Variabel HKD

### Level

Null Hypothesis: HKD has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.182517	0.9170
Test critical values:		
1% level	-4.121990	
5% level	-3.144920	
10% level	-2.713751	

### First Difference

Null Hypothesis: D(HKD) has a unit root

Exogenous: Constant

Lag Length: 3 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.431103	0.0006
Test critical values:		
1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

## Variabel GDP

### Level

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.024767	0.9405
Test critical values:		
1% level	-4.004425	
5% level	-3.098896	
10% level	-2.690439	

### First Difference

Null Hypothesis: D(GDP) has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.637687	0.0222
Test critical values:		
1% level	-4.121990	
5% level	-3.144920	
10% level	-2.713751	

## Variabel HRG

### Level

Null Hypothesis: HRG has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.010139	0.7186
Test critical values:		
1% level	-4.004425	
5% level	-3.098896	
10% level	-2.690439	

### First Difference

Null Hypothesis: D(HRG) has a unit root

Exogenous: Constant

Lag Length: 3 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.190734	0.0117
Test critical values:		
1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

### Lampiran III

#### Uji Stasioneritas Residual Regresi

##### Level

Null Hypothesis: ECT has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.165050	0.4703
Test critical values:		
1% level	-4.800080	
5% level	-3.791172	
10% level	-3.342253	

##### First Difference

Null Hypothesis: D(ECT) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=3)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.359538	0.0333
Test critical values:		
1% level	-4.057910	
5% level	-3.119910	
10% level	-2.701103	



## Lampiran IV

### Uji Kointegrasi Johansen

Date: 01/20/17 Time: 20:11

Sample (adjusted): 2002 2014

Included observations: 13 after adjustments

Trend assumption: Linear deterministic trend

Series: HKI HKD GDP HRG

Lags interval (in first differences): 1 to 1

#### Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.950537	85.68615	47.85613	0.0000
At most 1 *	0.893190	46.60128	29.79707	0.0003
At most 2 *	0.584964	17.52419	15.49471	0.0244
At most 3 *	0.374137	6.092112	3.841466	0.0136

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

#### Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.950537	39.08487	27.58434	0.0011
At most 1 *	0.893190	29.07710	21.13162	0.0031
At most 2	0.584964	11.43207	14.26460	0.1338
At most 3 *	0.374137	6.092112	3.841466	0.0136

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

#### Unrestricted Cointegrating Coefficients (normalized by $b'S_{11}^{-1}b=I$ ):

HKI	HKD	GDP	HRG
96.34722	-0.000284	0.001388	2.562125

-121.6658	-4.25E-05	-0.000535	-2.985956
-18.15126	-0.000259	8.58E-05	0.288095
-236.5602	-8.43E-05	-3.60E-05	-0.080104

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Unrestricted Adjustment Coefficients (alpha):

D(HKI)	0.004236	0.003854	-0.004715	0.000754
D(HKD)	2201.403	2470.509	1079.520	519.6006
D(GDP)	-335.8620	180.9487	-95.32637	258.7643
D(HRG)	-0.073882	0.332344	0.151743	-0.205066

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1 Cointegrating Equation(s):      Log likelihood      -171.4661

Normalized cointegrating coefficients (standard error in parentheses)

HKI	HKD	GDP	HRG
1.000000	-2.95E-06	1.44E-05	0.026593
	(3.5E-07)	(1.2E-06)	(0.00293)

Adjustment coefficients (standard error in parentheses)

D(HKI)	0.408146
	(0.27515)
D(HKD)	212099.1
	(113995.)
D(GDP)	-32359.37
	(17729.4)
D(HRG)	-7.118328
	(19.1211)

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2 Cointegrating Equation(s):      Log likelihood      -156.9276

Normalized cointegrating coefficients (standard error in parentheses)

HKI	HKD	GDP	HRG
1.000000	0.000000	5.46E-06	0.024759
		(8.0E-07)	(0.00268)
0.000000	1.000000	-3.036989	-621.7922
		(0.35209)	(1177.34)

Adjustment coefficients (standard error in parentheses)

D(HKI)	-0.060804	-1.37E-06
	(0.38120)	(7.1E-07)

D(HKD)	-88477.45 (112768.)	-0.730289 (0.20870)
D(GDP)	-54374.64 (26512.5)	0.087715 (0.04907)
D(HRG)	-47.55318 (23.8453)	6.87E-06 (4.4E-05)

3 Cointegrating Equation(s):      Log likelihood      -151.2116

Normalized cointegrating coefficients (standard error in parentheses)

HKI	HKD	GDP	HRG
1.000000	0.000000	0.000000	0.029972 (0.00581)
0.000000	1.000000	0.000000	-3523.480 (2698.49)
0.000000	0.000000	1.000000	-955.4489 (945.016)

Adjustment coefficients (standard error in parentheses)

D(HKI)	0.024777 (0.26413)	-1.44E-07 (6.5E-07)	3.42E-06 (2.5E-06)
D(HKD)	-108072.1 (93946.5)	-1.010350 (0.23270)	1.827763 (0.89601)
D(GDP)	-52644.35 (26092.7)	0.112445 (0.06463)	-0.571234 (0.24886)
D(HRG)	-50.30751 (22.2725)	-3.25E-05 (5.5E-05)	-0.000267 (0.00021)

## Lampiran V

### Uji Jangka Panjang

Dependent Variable: Y

Method: Least Squares

Date: 01/20/17 Time: 19:35

Sample: 2000 2014

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	222378.3	61361.30	3.624081	0.0047
HKI	-5127849.	635576.5	-8.068029	0.0000
HKD	3.102913	1.666714	1.861695	0.0923
GDP	-5.365975	6.216518	-0.863180	0.4083
HRG	-10362.06	15711.26	-0.659531	0.5245
R-squared	0.885129	Mean dependent var		135556.2
Adjusted R-squared	0.839181	S.D. dependent var		54080.93
S.E. of regression	21687.66	Akaike info criterion		23.06808
Sum squared resid	4.70E+09	Schwarz criterion		23.30409
Log likelihood	-168.0106	Hannan-Quinn criter.		23.06556
F-statistic	19.26361	Durbin-Watson stat		1.190807
Prob(F-statistic)	0.000109			

## Lampiran VI

### Uji Autokorelasi Jangka Panjang

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.811517	Prob. F(2,8)	0.4777
Obs*R-squared	2.529921	Prob. Chi-Square(2)	0.2823

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 01/20/17 Time: 20:16

Sample: 2000 2014

Included observations: 15

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16155.17	65024.63	-0.248447	0.8100
HKI	385833.6	748014.0	0.515811	0.6199
HKD	0.017708	1.913853	0.009252	0.9928
GDP	0.787164	6.815046	0.115504	0.9109
HRG	1743.464	16699.90	0.104400	0.9194
RESID(-1)	0.531141	0.441588	1.202799	0.2634
RESID(-2)	-0.113212	0.488899	-0.231565	0.8227
R-squared	0.168661	Mean dependent var		5.34E-12
Adjusted R-squared	-0.454843	S.D. dependent var		18329.42
S.E. of regression	22108.37	Akaike info criterion		23.15002
Sum squared resid	3.91E+09	Schwarz criterion		23.48045
Log likelihood	-166.6252	Hannan-Quinn criter.		23.14651
F-statistic	0.270506	Durbin-Watson stat		1.834923
Prob(F-statistic)	0.935774			

## Lampiran VII

### Uji Heteroskedastisitas Jangka Panjang

Heteroskedasticity Test: White

F-statistic	0.184696	Prob. F(4,10)	0.9411
Obs*R-squared	1.031939	Prob. Chi-Square(4)	0.9049
Scaled explained SS	0.125471	Prob. Chi-Square(4)	0.9981

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 01/20/17 Time: 20:18

Sample: 2000 2014

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.75E+08	3.42E+08	0.805636	0.4392
HKI^2	1.29E+10	1.52E+11	0.084873	0.9340
HKD^2	-0.172368	0.415319	-0.415025	0.6869
GDP^2	2.146312	4.072990	0.526962	0.6097
HRG^2	-1118127.	36991671	-0.030226	0.9765
R-squared	0.068796	Mean dependent var		3.14E+08
Adjusted R-squared	-0.303686	S.D. dependent var		2.40E+08
S.E. of regression	2.74E+08	Akaike info criterion		41.95729
Sum squared resid	7.51E+17	Schwarz criterion		42.19331
Log likelihood	-309.6797	Hannan-Quinn criter.		41.95478
F-statistic	0.184696	Durbin-Watson stat		1.592093
Prob(F-statistic)	0.941059			

## Lampiran VIII

### Uji Multikolinieritas Jangka Panjang

	HKI	HKD	GDP	HRG
HKI	1	0.112960	0.004547	-0.187832
HKD	0.112690	1	0.789159	-0.488016
GDP	0.004547	0.789159	1	-0.810405
HRG	-0.187832	-0.488016	-0.810405	1



## Lampiran IX

### Uji Jangka Pendek

Dependent Variable: D(Y)

Method: Least Squares

Date: 01/20/17 Time: 20:13

Sample (adjusted): 2001 2014

Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7508.355	6195.088	-1.211985	0.2601
D(HKI)	-4417211.	536017.6	-8.240794	0.0000
D(HKD)	3.680981	1.265975	2.907626	0.0197
D(GDP)	3.600921	6.812597	0.528568	0.6115
D(HRG)	-16948.68	9185.435	-1.845169	0.1022
ECT(-1)	-0.549972	0.271420	-2.026280	0.0773
R-squared	0.897686	Mean dependent var	-1291.971	
Adjusted R-squared	0.833739	S.D. dependent var	41522.98	
S.E. of regression	16931.04	Akaike info criterion	22.60921	
Sum squared resid	2.29E+09	Schwarz criterion	22.88309	
Log likelihood	-152.2645	Hannan-Quinn criter.	22.58386	
F-statistic	14.03807	Durbin-Watson stat	1.201768	
Prob(F-statistic)	0.000870			



## Lampiran X

### Uji Autokorelasi Jangka Pendek

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.153594	Prob. F(2,7)	0.8604
Obs*R-squared	0.588548	Prob. Chi-Square(2)	0.7451

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 01/20/17 Time: 20:27

Sample: 2001 2014

Included observations: 14

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	623.1216	8056.552	0.077343	0.9405
D(HKI)	35334.04	659301.9	0.053593	0.9588
D(HKD)	0.000591	1.616956	0.000365	0.9997
D(GDP)	-1.098619	8.980800	-0.122330	0.9061
D(HRG)	-1295.275	12482.22	-0.103770	0.9203
RESID(-1)	0.224948	0.406605	0.553235	0.5973
RESID(-2)	-0.039754	0.408165	-0.097398	0.9251
R-squared	0.042039	Mean dependent var		-1.17E-12
Adjusted R-squared	-0.779070	S.D. dependent var		16338.37
S.E. of regression	21792.41	Akaike info criterion		23.12336
Sum squared resid	3.32E+09	Schwarz criterion		23.44289
Log likelihood	-154.8635	Hannan-Quinn criter.		23.09379
F-statistic	0.051198	Durbin-Watson stat		1.874524
Prob(F-statistic)	0.999010			

## Lampiran XI

### Uji Heteroskedastisitas Jangka Pendek

Heteroskedasticity Test: White

F-statistic	0.616500	Prob. F(4,9)	0.6618
Obs*R-squared	3.010988	Prob. Chi-Square(4)	0.5560
Scaled explained SS	1.241680	Prob. Chi-Square(4)	0.8712

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 01/20/17 Time: 20:28

Sample: 2001 2014

Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.83E+08	1.93E+08	1.990857	0.0777
D(HKI)^2	1.87E+11	5.01E+11	0.373122	0.7177
D(HKD)^2	-5.062019	5.268730	-0.960767	0.3618
D(GDP)^2	73.98488	122.4981	0.603968	0.5608
D(HRG)^2	-3.68E+08	3.01E+08	-1.222110	0.2527
R-squared	0.215071	Mean dependent var		2.48E+08
Adjusted R-squared	-0.133787	S.D. dependent var		3.63E+08
S.E. of regression	3.87E+08	Akaike info criterion		42.65788
Sum squared resid	1.35E+18	Schwarz criterion		42.88612
Log likelihood	-293.6052	Hannan-Quinn criter.		42.63675
F-statistic	0.616500	Durbin-Watson stat		2.690145
Prob(F-statistic)	0.661794			

## Lampiran XII

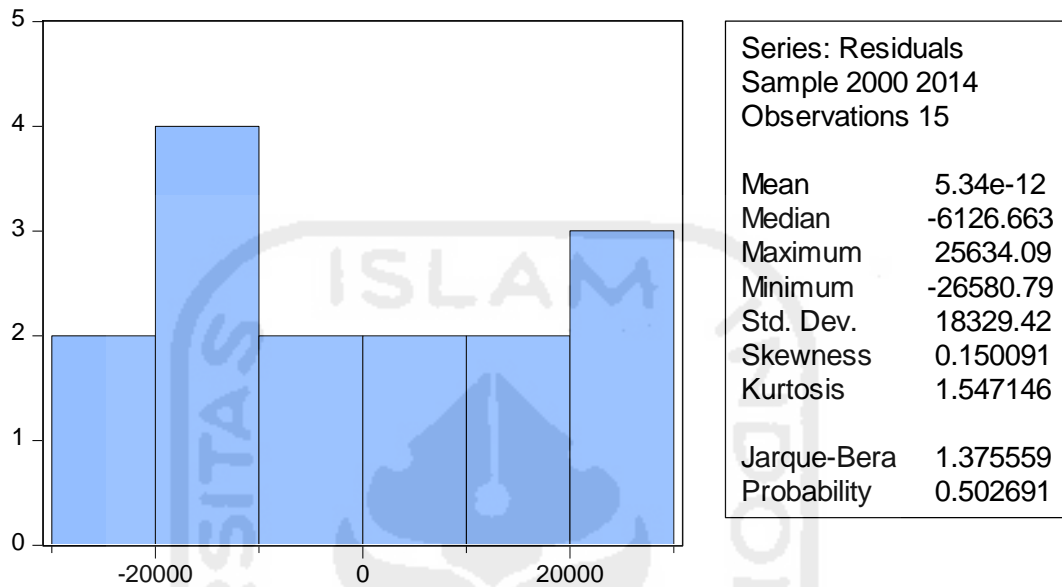
### Uji Multikolinieritas Jangka Pendek

	D(HKI)	D(HKD)	D(GDP)	D(HRG)
D(HKI)	1	0.299305	0.003275	0.017819
D(HKD)	0.299305	1	-0.084858	0.318777
D(GDP)	0.003275	-0.084858	1	-0.267068
D(HRG)	0.017819	0.318777	-0.267068	1



## Lampiran XII

### Uji Normalitas



## Lampiran XIV

### Uji Statistik Deskriptif

	<b>Y</b>	<b>HKI</b>	<b>HKD</b>	<b>GDP</b>	<b>HRG</b>
<b>Mean</b>	135556.2	0.018283	21903.15	7252.142	2.134667
<b>Median</b>	134774.4	0.014936	21009.00	7240.682	2.270000
<b>Maximum</b>	211470.3	0.046052	35951.60	11307.07	3.310000
<b>Minimum</b>	43733.00	0.009495	10938.30	3878.771	1.070000
<b>Std. Dev</b>	54080.93	0.010299	6692.747	2765.086	0.771519
<b>Skewness</b>	-0.197783	1.503244	0.364585	0.210022	0.046965
<b>Kurtosis</b>	1.814815	4.511489	2.451949	1.543883	1.738323
<b>Jarque-Bera</b>	0.975710	7.077235	0.520031	1.435446	1.000407
<b>Probability</b>	0.613942	0.029053	0.771040	0.487862	0.606407
<b>Sum</b>	2033344.	0.274742	328547.3	108782.1	32.02000
<b>Sum sq.dev</b>	4.09E+10	0.001485	6.27E+08	1.07E+08	8.333373
<b>observations</b>	15	15	15	15	15