

LAMPIRAN

Lampiran 1

DATA TAHUN 2014-2016

No	Date	IHSG	DJIA	N225	SCI
1	Jan 01, 2014	4,274.18	16,504.29	16,291.31	2,097.53
2	Feb 03, 2014	4,386.26	15,372.80	14,619.13	2,033.08
3	Mar 03, 2014	4,584.21	16,168.03	14,652.23	2,075.24
4	Apr 01, 2014	4,873.93	16,532.61	14,791.99	2,047.46
5	May 01, 2014	4,838.76	16,512.89	14,457.51	2,026.36
6	Jun 02, 2014	4,912.09	16,743.63	14,935.92	2,039.21
7	Jul 01, 2014	4,884.83	16,956.07	15,326.20	2,050.38
8	Aug 01, 2014	5,088.80	16,960.57	15,457.87	2,126.61
9	Sep 01, 2014	5,177.62	17,098.45	15,476.60	2,235.51
10	Oct 01, 2014	5,140.91	16,804.71	16,082.25	2,363.87
11	Nov 03, 2014	5,085.51	17,366.24	16,413.76	2,430.03
12	Dec 01, 2014	5,164.29	17,776.80	17,590.10	2,680.16
13	Jan 01, 2015	5,226.95	17,983.07	17,450.77	3,165.81
14	Feb 02, 2015	5,276.24	17,361.04	17,558.04	3,128.30
15	Mar 02, 2015	5,477.83	18,288.63	18,826.88	3,336.28
16	Apr 01, 2015	5,466.87	17,698.18	19,034.84	3,810.29
17	May 01, 2015	5,086.42	17,840.52	19,520.01	4,441.65
18	Jun 01, 2015	5,213.82	18,040.37	20,569.87	4,828.74
19	Jul 01, 2015	4,904.06	17,757.91	20,329.32	4,053.70
20	Aug 03, 2015	4,800.18	17,598.20	20,548.11	3,622.91
21	Sep 01, 2015	4,412.46	16,058.35	18,165.69	3,166.62
22	Oct 01, 2015	4,254.88	16,272.01	17,722.42	3,052.78
23	Nov 02, 2015	4,464.96	17,828.76	18,683.24	3,325.08
24	Dec 01, 2015	4,557.67	17,888.35	20,012.40	3,456.31
25	Jan 01, 2016	4,615.16	16,466.30	17,518.30	2,737.60
26	Feb 01, 2016	4,770.96	16,516.50	16,026.76	2,687.98
27	Mar 01, 2016	4,845.37	17,685.09	16,758.67	3,003.92
28	Apr 01, 2016	4,838.58	17,773.64	16,666.05	2,938.32
29	May 01, 2016	4,796.87	17,787.20	17,234.98	2,916.62
30	Jun 01, 2016	5,016.65	17,929.99	15,575.92	2,929.61

31	Jul 01, 2016	5,215.99	18,432.24	16,569.27	2,979.34
32	Aug 01, 2016	5,386.08	18,400.88	16,887.40	3,085.49
33	Sep 01, 2016	5,364.80	18,308.15	16,449.84	3,004.70
34	Oct 01, 2016	5,422.54	18,142.42	17,425.02	3,100.49
35	Nov 01, 2016	5,148.91	19,123.58	18,308.48	3,250.03
36	Dec 01, 2016	5,296.71	19,762.60	19,114.37	3,103.64

Lampiran 2

UJI LEVEL

Null Hypothesis: IHSG has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.043749	0.2677
Test critical values: 1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(IHSG)
 Method: Least Squares
 Date: 03/02/17 Time: 23:14
 Sample (adjusted): 2014M02 2016M12
 Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHSG(-1)	-0.165004	0.080736	-2.043749	0.0490
C	844.6935	399.9426	2.112037	0.0423
R-squared	0.112352	Mean dependent var		29.21514
Adjusted R-squared	0.085454	S.D. dependent var		168.7652
S.E. of regression	161.3933	Akaike info criterion		13.06101
Sum squared resid	859577.7	Schwarz criterion		13.14989
Log likelihood	-226.5677	Hannan-Quinn criter.		13.09169
F-statistic	4.176909	Durbin-Watson stat		1.634130
Prob(F-statistic)	0.049028			

Null Hypothesis: DJIA has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.545960	0.4990
Test critical values: 1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DJIA)
 Method: Least Squares
 Date: 03/02/17 Time: 23:14
 Sample (adjusted): 2014M02 2016M12
 Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DJIA(-1)	-0.201476	0.130324	-1.545960	0.1317
C	3592.902	2266.364	1.585315	0.1224
R-squared	0.067533	Mean dependent var		93.09457
Adjusted R-squared	0.039276	S.D. dependent var		645.2795
S.E. of regression	632.4804	Akaike info criterion		15.79262
Sum squared resid	13201039	Schwarz criterion		15.88150
Log likelihood	-274.3709	Hannan-Quinn criter.		15.82330
F-statistic	2.389992	Durbin-Watson stat		1.784970
Prob(F-statistic)	0.131652			

Null Hypothesis: N225 has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.490606	0.5265
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(N225)
 Method: Least Squares
 Date: 03/02/17 Time: 23:14
 Sample (adjusted): 2014M02 2016M12
 Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
N225(-1)	-0.138787	0.093108	-1.490606	0.1456
C	2459.616	1604.173	1.533261	0.1347
R-squared	0.063083	Mean dependent var		80.65886
Adjusted R-squared	0.034692	S.D. dependent var		975.8264
S.E. of regression	958.7505	Akaike info criterion		16.62458
Sum squared resid	30333683	Schwarz criterion		16.71346
Log likelihood	-288.9302	Hannan-Quinn criter.		16.65526
F-statistic	2.221908	Durbin-Watson stat		1.740013

Prob(F-statistic) 0.145562

Null Hypothesis: SCI has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.101067	0.2455
Test critical values:		
1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SCI)
Method: Least Squares
Date: 03/02/17 Time: 23:15
Sample (adjusted): 2014M03 2016M12
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SCI(-1)	-0.145696	0.069344	-2.101067	0.0439
D(SCI(-1))	0.376112	0.162380	2.316253	0.0273
C	447.8160	208.6495	2.146259	0.0398
R-squared	0.212485	Mean dependent var		31.48706
Adjusted R-squared	0.161677	S.D. dependent var		297.4702
S.E. of regression	272.3636	Akaike info criterion		14.13625
Sum squared resid	2299640.	Schwarz criterion		14.27093
Log likelihood	-237.3163	Hannan-Quinn criter.		14.18218
F-statistic	4.182157	Durbin-Watson stat		1.849259
Prob(F-statistic)	0.024661			

Lampiran 3

UJI FIRST DEFFERENT

Null Hypothesis: D(IHSG) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.895020	0.0004
Test critical values: 1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(IHSG,2)
 Method: Least Squares
 Date: 03/02/17 Time: 23:15
 Sample (adjusted): 2014M03 2016M12
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IHSG(-1))	-0.860216	0.175733	-4.895020	0.0000
C	23.18167	29.78028	0.778424	0.4420
R-squared	0.428175	Mean dependent var		1.050588
Adjusted R-squared	0.410306	S.D. dependent var		223.5071
S.E. of regression	171.6346	Akaike info criterion		13.18563
Sum squared resid	942669.7	Schwarz criterion		13.27542
Log likelihood	-222.1558	Hannan-Quinn criter.		13.21625
F-statistic	23.96122	Durbin-Watson stat		2.017825
Prob(F-statistic)	0.000027			

Null Hypothesis: D(DJIA) has a unit root
 Exogenous: Constant
 Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.795130	0.0000
Test critical values: 1% level	-3.646342	
5% level	-2.954021	
10% level	-2.615817	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DJIA,2)
 Method: Least Squares
 Date: 03/02/17 Time: 23:15
 Sample (adjusted): 2014M04 2016M12
 Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DJIA(-1))	-1.593202	0.234462	-6.795130	0.0000
D(DJIA(-1),2)	0.492786	0.153609	3.208054	0.0032
C	144.8017	97.71880	1.481820	0.1488
R-squared	0.642647	Mean dependent var	-4.733636	
Adjusted R-squared	0.618823	S.D. dependent var	889.1964	
S.E. of regression	548.9855	Akaike info criterion	15.54053	
Sum squared resid	9041551.	Schwarz criterion	15.67658	
Log likelihood	-253.4187	Hannan-Quinn criter.	15.58630	
F-statistic	26.97529	Durbin-Watson stat	2.161020	
Prob(F-statistic)	0.000000			

Null Hypothesis: D(N225) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.876490	0.0000
Test critical values:		
1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(N225,2)
 Method: Least Squares
 Date: 03/02/17 Time: 23:16
 Sample (adjusted): 2014M03 2016M12
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(N225(-1))	-0.995124	0.169340	-5.876490	0.0000
C	131.9237	164.1666	0.803597	0.4276
R-squared	0.519037	Mean dependent var	72.88441	
Adjusted R-squared	0.504006	S.D. dependent var	1356.661	
S.E. of regression	955.4531	Akaike info criterion	16.61927	
Sum squared resid	29212499	Schwarz criterion	16.70906	
Log likelihood	-280.5276	Hannan-Quinn criter.	16.64989	

F-statistic	34.53313	Durbin-Watson stat	1.993463
Prob(F-statistic)	0.000002		

Null Hypothesis: D(SCI) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.051636	0.0035
Test critical values:		
1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(SCI,2)
 Method: Least Squares
 Date: 03/02/17 Time: 23:16
 Sample (adjusted): 2014M03 2016M12
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SCI(-1))	-0.682000	0.168327	-4.051636	0.0003
C	20.70778	49.46902	0.418601	0.6783
R-squared	0.339058	Mean dependent var		-2.410000
Adjusted R-squared	0.318404	S.D. dependent var		347.0571
S.E. of regression	286.5263	Akaike info criterion		14.21056
Sum squared resid	2627115.	Schwarz criterion		14.30035
Log likelihood	-239.5795	Hannan-Quinn criter.		14.24118
F-statistic	16.41575	Durbin-Watson stat		1.808184
Prob(F-statistic)	0.000303			

Lampiran 4

Pengujian Panjang *Lag* Menggunakan Nilai LR

VAR Lag Order Selection Criteria

Endogenous variables: D(IHSG) D(DJIA) D(N225) D(SCI)

Exogenous variables: C

Date: 03/02/17 Time: 23:18

Sample: 2014M01 2016M12

Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-962.6556	NA	3.26e+20	58.58519	58.76658*	58.64622*
1	-948.9038	23.33628	3.77e+20	58.72144	59.62842	59.02661
2	-925.9116	33.44327*	2.59e+20*	58.29767*	59.93023	58.84698

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Lampiran 5

Hasil Uji Kointegrasi (Johansen's Cointegration Test)

Date: 03/02/17 Time: 23:22
 Sample (adjusted): 2014M05 2016M12
 Included observations: 32 after adjustments
 Trend assumption: Linear deterministic trend
 Series: D(IHSG) D(DJIA) D(N225) D(SCI)
 Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.752034	73.77342	47.85613	0.0000
At most 1	0.331282	29.15057	29.79707	0.0592
At most 2 *	0.270588	16.27400	15.49471	0.0381
At most 3 *	0.175556	6.177475	3.841466	0.0129

Trace test indicates 1 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 *	0.752034	44.62285	27.58434	0.0001
At most 1	0.331282	12.87657	21.13162	0.4636
At most 2	0.270588	10.09653	14.26460	0.2057
At most 3 *	0.175556	6.177475	3.841466	0.0129

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

Lampiran 6

Hasil Uji Stabilitas Estimasi VECM

Roots of Characteristic Polynomial
Endogenous variables: D(IHSG) D(DJIA) D(N225)
D(SCI)
Exogenous variables: C
Lag specification: 1 2
Date: 03/02/17 Time: 23:21

Root	Modulus
0.170093 - 0.809355i	0.827035
0.170093 + 0.809355i	0.827035
-0.756404	0.756404
-0.171985 - 0.586241i	0.610948
-0.171985 + 0.586241i	0.610948
0.553539 - 0.143157i	0.571751
0.553539 + 0.143157i	0.571751
-0.328934	0.328934

No root lies outside the unit circle.
VAR satisfies the stability condition.

Lampiran 7

Uji Kausalitas Granger

Pairwise Granger Causality Tests

Date: 03/02/17 Time: 23:24

Sample: 2014M01 2016M12

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DJIA does not Granger Cause IHSG	34	0.75301	0.4799
IHSG does not Granger Cause DJIA		0.98618	0.3852
N225 does not Granger Cause IHSG	34	3.82999	0.0334
IHSG does not Granger Cause N225		2.72486	0.0823
SCI does not Granger Cause IHSG	34	2.97715	0.0667
IHSG does not Granger Cause SCI		1.70849	0.1989
N225 does not Granger Cause DJIA	34	1.71377	0.1979
DJIA does not Granger Cause N225		2.12178	0.1380
SCI does not Granger Cause DJIA	34	0.41059	0.6671
DJIA does not Granger Cause SCI		0.31604	0.7315
SCI does not Granger Cause N225	34	4.77325	0.0161
N225 does not Granger Cause SCI		1.03860	0.3667

Lampiran 8

Hasil Estimasi VECM (Vector Error Correction Model) Jangka Pendek dan Jangka Panjang

Vector Error Correction Estimates

Date: 03/02/17 Time: 23:25

Sample (adjusted): 2014M04 2016M12

Included observations: 33 after adjustments

Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1			
IHSG(-1)	1.000000			
DJIA(-1)	-0.393171 (0.05010) [-7.84758]			
N225(-1)	0.007558 (0.04513) [0.16746]			
SCI(-1)	0.326698 (0.12604) [2.59192]			
C	783.1026			

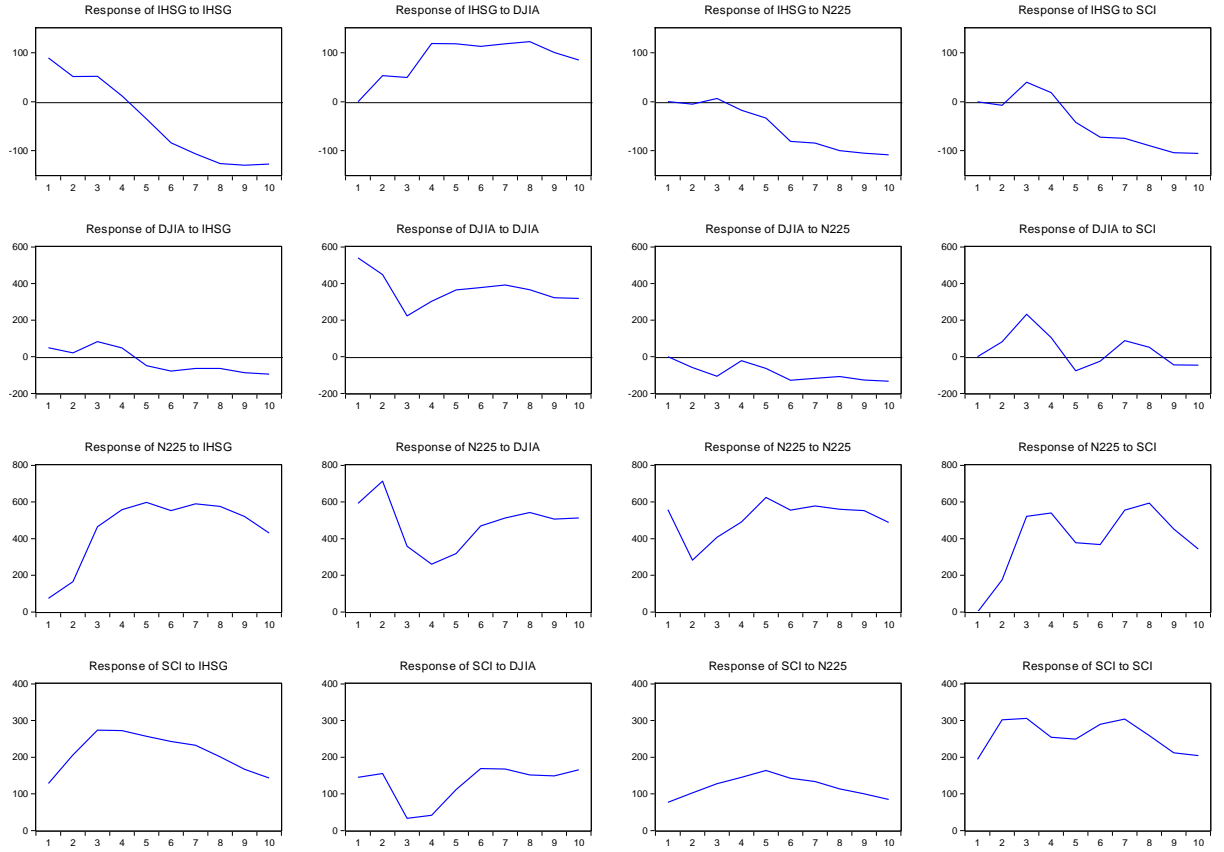
Error Correction:	D(IHSG)	D(DJIA)	D(N225)	D(SCI)
CointEq1	-0.660053 (0.09452) [-6.98322]	-0.525441 (0.57459) [-0.91446]	1.115148 (0.86457) [1.28983]	0.110844 (0.30123) [0.36797]
D(IHSG(-1))	0.232154 (0.11498) [2.01912]	-0.206712 (0.69896) [-0.29574]	-1.229812 (1.05170) [-1.16936]	0.045057 (0.36643) [0.12296]
D(IHSG(-2))	0.261883 (0.11051) [2.36985]	0.031295 (0.67177) [0.04659]	0.524189 (1.01080) [0.51859]	0.637233 (0.35218) [1.80938]
D(DJIA(-1))	-0.146382 (0.05889) [-2.48556]	-0.307623 (0.35802) [-0.85924]	1.099756 (0.53869) [2.04152]	-0.051839 (0.18769) [-0.27619]
D(DJIA(-2))	-0.258969 (0.05181) [-4.99826]	-0.399362 (0.31497) [-1.26795]	-0.099690 (0.47392) [-0.21035]	-0.188362 (0.16512) [-1.14073]

D(N225(-1))	0.001610 (0.03036) [0.05305]	-0.160770 (0.18453) [-0.87123]	-0.627124 (0.27766) [-2.25862]	-0.030694 (0.09674) [-0.31728]
D(N225(-2))	0.005447 (0.02767) [0.19686]	-0.297083 (0.16822) [-1.76605]	-0.276993 (0.25311) [-1.09434]	0.023800 (0.08819) [0.26988]
D(SCI(-1))	0.176477 (0.07928) [2.22611]	0.591953 (0.48192) [1.22831]	0.535975 (0.72513) [0.73914]	0.517543 (0.25265) [2.04844]
D(SCI(-2))	0.420380 (0.07859) [5.34912]	0.875741 (0.47775) [1.83307]	1.198505 (0.71885) [1.66726]	-0.249097 (0.25046) [-0.99455]
C	16.95392 (16.3271) [1.03839]	147.1377 (99.2533) [1.48245]	48.78377 (149.343) [0.32666]	14.28882 (52.0344) [0.27460]
R-squared	0.803052	0.442517	0.474609	0.362121
Adj. R-squared	0.725985	0.224371	0.269021	0.112516
Sum sq. Resids	183382.6	6776902.	15343069	1862609.
S.E. equation	89.29253	542.8148	816.7558	284.5751
F-statistic	10.42022	2.028537	2.308545	1.450778
Log likelihood	-189.1015	-248.6616	-262.1445	-227.3512
Akaike AIC	12.06676	15.67646	16.49360	14.38492
Schwarz SC	12.52025	16.12995	16.94709	14.83841
Mean dependent	21.59091	108.9264	135.2164	31.16364
S.D. dependent	170.5800	616.3460	955.2999	302.0764
Determinant resid covariance (dof adj.)		2.73E+19		
Determinant resid covariance		6.44E+18		
Log likelihood		-901.8893		
Akaike information criterion		57.32662		
Schwarz criterion		59.32197		

Lampiran 9

Hasil Analisis IRF IHSG terhadap *shock* DJIA, N225 dan SCI

Response to Cholesky One S.D. Innovations



Lampiran 10

Hasil Analisis VDC IHSG

Variance Decomposition of IHSG:					
Period	S.E.	IHSG	DJIA	N225	SCI
1	89.29253	100.0000	0.000000	0.000000	0.000000
2	116.4123	78.28235	21.11442	0.176824	0.426412
3	142.5431	65.38996	26.20089	0.318921	8.090233
4	187.6485	38.13348	55.17076	1.053713	5.642054
5	231.2399	27.46403	62.64435	2.814675	7.076954
6	291.9047	25.50776	54.32077	9.509867	10.66160
7	351.3654	26.88232	48.85578	12.35385	11.90805
8	415.4331	28.53135	43.65907	14.62048	13.18910
9	470.8123	29.84479	38.57424	16.37845	15.20252
10	517.8742	30.71358	34.57835	17.95389	16.75418