ภาคผนวก

ภาคผนวก ก

ผลการทดสอบ Unit Root Test โดยการทดสอบ Augmented Dickey-Fuller

1) ผลการทดสอบ Unit Root Test : Level without intercept and trend

1.1) ตลาดอนุพันธ์ไทย

Null Hypothesis: THAILAND has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-27.23712	0.0000
Test critical values:	1% level	-2.568609	
	5% level	-1.941322	
	10% level	-1.616364	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(THAILAND)
Method: Least Squares
Date: 05/06/09   Time: 15:29
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 635 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
THAILAND(-1)	-1.083700	0.039788	-27.23712	0.0000
R-squared	0.539194	Mean dependent var		8.86E-05
Adjusted R-squared	0.539194	S.D. dependent var		0.032028
S.E. of regression	0.021741	Akaike info criterion		-4.817648
Sum squared resid	0.299677	Schwarz criterion		-4.810635
Log likelihood	1530.603	Durbin-Watson stat		1.980983

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

1.2) ตลาดอนุพันธ์ดาวโจนส์

Null Hypothesis: DOWJONES has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.91542	0.0000
Test critical values:	1% level	-2.568487	
	5% level	-1.941306	
	10% level	-1.616375	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOWJONES)
Method: Least Squares
Date: 05/06/09   Time: 15:33
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 657 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DOWJONES(-1)	-1.381591	0.057770	-23.91542	0.0000
D(DOWJONES(-1))	0.214055	0.038298	5.589234	0.0000
R-squared	0.588213	Mean dependent var		9.87E-06
Adjusted R-squared	0.587585	S.D. dependent var		0.024949
S.E. of regression	0.016022	Akaike info criterion		-5.426667
Sum squared resid	0.168142	Schwarz criterion		-5.413006
Log likelihood	1784.660	Durbin-Watson stat		1.953794

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

1.3) ตลาดอนุพันธ์เอสแอนด์พี

Null Hypothesis: S_P has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.22254	0.0000
Test critical values:	1% level	-2.568460	
	5% level	-1.941302	
	10% level	-1.616378	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(S_P)
Method: Least Squares
Date: 05/06/09   Time: 15:34
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 662 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
S_P(-1)	-1.320519	0.056864	-23.22254	0.0000
D(S_P(-1))	0.197576	0.038324	5.155461	0.0000
R-squared	0.568460	Mean dependent var		4.08E-06
Adjusted R-squared	0.567806	S.D. dependent var		0.025491
S.E. of regression	0.016758	Akaike info criterion		-5.336838
Sum squared resid	0.185353	Schwarz criterion		-5.323257
Log likelihood	1768.493	Durbin-Watson stat		1.971285

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

1.4) ตลาดอนุพันธ์นิเคอิ

Null Hypothesis: JAPAN has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-25.70349	0.0000
Test critical values:	1% level	-2.568721	
	5% level	-1.941338	
	10% level	-1.616354	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(JAPAN)
Method: Least Squares
Date: 05/06/09   Time: 15:36
Sample (adjusted): 5/02/2006 11/28/2008
Included observations: 616 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JAPAN(-1)	-1.036251	0.040316	-25.70349	0.0000
R-squared	0.517900	Mean dependent var		2.23E-05
Adjusted R-squared	0.517900	S.D. dependent var		0.028808
S.E. of regression	0.020002	Akaike info criterion		-4.984306
Sum squared resid	0.246059	Schwarz criterion		-4.977125
Log likelihood	1536.166	Durbin-Watson stat		2.000867

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

1.5) ตลาดอนุพันธ์ฮั่งเส็ง

Null Hypothesis: HONG_KONG has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-26.39903	0.0000
Test critical values:	1% level	-2.568597	
	5% level	-1.941321	
	10% level	-1.616365	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HONG_KONG)
Method: Least Squares
Date: 05/06/09   Time: 15:37
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 637 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HONG_KONG(-1)	-1.045978	0.039622	-26.39903	0.0000
R-squared	0.522848	Mean dependent var		8.22E-06
Adjusted R-squared	0.522848	S.D. dependent var		0.032345
S.E. of regression	0.022343	Akaike info criterion		-4.763072
Sum squared resid	0.317487	Schwarz criterion		-4.756075
Log likelihood	1518.038	Durbin-Watson stat		2.002303

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2) การทดสอบ Unit Root Test : Level with intercept

2.1) ตลาดอนุพันธ์ไทย

Null Hypothesis: THAILAND has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-27.25636	0.0000
Test critical values:	1% level	-3.440419	
	5% level	-2.865874	
	10% level	-2.569136	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(THAILAND)
Method: Least Squares
Date: 05/06/09   Time: 15:42
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 635 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
THAILAND(-1)	-1.085353	0.039820	-27.25636	0.0000
C	-0.000875	0.000863	-1.013503	0.3112
R-squared	0.539941	Mean dependent var		8.86E-05
Adjusted R-squared	0.539214	S.D. dependent var		0.032028
S.E. of regression	0.021741	Akaike info criterion		-4.816120
Sum squared resid	0.299192	Schwarz criterion		-4.802093
Log likelihood	1531.118	F-statistic		742.9094
Durbin-Watson stat	1.980760	Prob(F-statistic)		0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2.2) ตลาดอนุพันธ์ดาวโจนส์

Null Hypothesis: DOWJONES has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.91134	0.0000
Test critical values:	1% level	-3.440074	
	5% level	-2.865722	
	10% level	-2.569054	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOWJONES)
Method: Least Squares
Date: 05/06/09   Time: 15:43
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 657 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DOWJONES(-1)	-1.382553	0.057820	-23.91134	0.0000
D(DOWJONES(-1))	0.214569	0.038326	5.598563	0.0000
C	-0.000377	0.000626	-0.603082	0.5467

R-squared	0.588442	Mean dependent var	9.87E-06
Adjusted R-squared	0.587184	S.D. dependent var	0.024949
S.E. of regression	0.016030	Akaike info criterion	-5.424179
Sum squared resid	0.168048	Schwarz criterion	-5.403687
Log likelihood	1784.843	F-statistic	467.5422
Durbin-Watson stat	1.953882	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2.3) ตลาดอนุพันธ์เอสแอนด์พี

Null Hypothesis: S_P has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.23732	0.0000
Test critical values:	1% level	-3.439999	
	5% level	-2.865689	
	10% level	-2.569037	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(S_P)
Method: Least Squares
Date: 05/06/09   Time: 15:44
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 662 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
S_P(-1)	-1.322672	0.056920	-23.23732	0.0000
D(S_P(-1))	0.198717	0.038349	5.181805	0.0000
C	-0.000594	0.000652	-0.910648	0.3628

R-squared	0.569002	Mean dependent var	4.08E-06
Adjusted R-squared	0.567694	S.D. dependent var	0.025491
S.E. of regression	0.016760	Akaike info criterion	-5.335074
Sum squared resid	0.185120	Schwarz criterion	-5.314703
Log likelihood	1768.910	F-statistic	435.0054
Durbin-Watson stat	1.971591	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2.4) ตลาดอนุพันธ์นิเคอิ

Null Hypothesis: JAPAN has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-25.73913	0.0000
Test critical values:	1% level	-3.440736	
	5% level	-2.866014	
	10% level	-2.569211	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(JAPAN)
Method: Least Squares
Date: 05/06/09   Time: 15:45
Sample (adjusted): 5/02/2006 11/28/2008
Included observations: 616 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JAPAN(-1)	-1.038500	0.040347	-25.73913	0.0000
C	-0.000955	0.000807	-1.184188	0.2368
R-squared	0.518998	Mean dependent var		2.23E-05
Adjusted R-squared	0.518215	S.D. dependent var		0.028808
S.E. of regression	0.019996	Akaike info criterion		-4.983341
Sum squared resid	0.245499	Schwarz criterion		-4.968979
Log likelihood	1536.869	F-statistic		662.5029
Durbin-Watson stat	2.001091	Prob(F-statistic)		0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2.5) ตลาดอนุพันธ์ฮั่งเส็ง

Null Hypothesis: HONG_KONG has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-26.37834	0.0000
Test critical values:	1% level	-3.440387	
	5% level	-2.865860	
	10% level	-2.569128	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HONG_KONG)
Method: Least Squares
Date: 05/06/09   Time: 15:45
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 637 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HONG_KONG(-1)	-1.045982	0.039653	-26.37834	0.0000
C	-3.66E-05	0.000886	-0.041349	0.9670

R-squared	0.522849	Mean dependent var	8.22E-06
Adjusted R-squared	0.522098	S.D. dependent var	0.032345
S.E. of regression	0.022360	Akaike info criterion	-4.759935
Sum squared resid	0.317486	Schwarz criterion	-4.745942
Log likelihood	1518.039	F-statistic	695.8167
Durbin-Watson stat	2.002302	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

3) **การทดสอบ Unit Root Test : Level with Trend and intercept**

3.1) ตลาดอนุพันธ์ไทย

Null Hypothesis: THAILAND has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-27.35648	0.0000
Test critical values:	1% level	-3.972572	
	5% level	-3.416911	
	10% level	-3.130816	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(THAILAND)
Method: Least Squares
Date: 05/06/09   Time: 15:47
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 635 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
THAILAND(-1)	-1.090297	0.039855	-27.35648	0.0000
C	0.001754	0.001730	1.013658	0.3111
@TREND(4/28/2006)	-8.26E-06	4.71E-06	-1.752439	0.0802

R-squared	0.542165	Mean dependent var	8.86E-05
Adjusted R-squared	0.540717	S.D. dependent var	0.032028
S.E. of regression	0.021705	Akaike info criterion	-4.817818
Sum squared resid	0.297745	Schwarz criterion	-4.796777
Log likelihood	1532.657	F-statistic	374.2055
Durbin-Watson stat	1.980124	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

3.2) ตลาดอนุพันธ์ดาวโจนส์

Null Hypothesis: DOWJONES has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-24.03548	0.0000
Test critical values:	1% level	-3.972083	
	5% level	-3.416672	
	10% level	-3.130675	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DOWJONES)
Method: Least Squares
Date: 05/06/09   Time: 15:48
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 657 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DOWJONES(-1)	-1.392023	0.057915	-24.03548	0.0000
D(DOWJONES(-1))	0.219443	0.038333	5.724634	0.0000
C	0.001709	0.001258	1.359231	0.1745
@TREND(4/28/2006)	-6.31E-06	3.30E-06	-1.911391	0.0564

R-squared	0.590732	Mean dependent var	9.87E-06
Adjusted R-squared	0.588852	S.D. dependent var	0.024949
S.E. of regression	0.015997	Akaike info criterion	-5.426714
Sum squared resid	0.167113	Schwarz criterion	-5.399391
Log likelihood	1786.675	F-statistic	314.1772
Durbin-Watson stat	1.954648	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

3.3) ตลาดอนุพันธ์เอสแอนด์พี

Null Hypothesis: S_P has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.38453	0.0000
Test critical values:	1% level	-3.971976	
	5% level	-3.416620	
	10% level	-3.130644	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(S_P)
Method: Least Squares
Date: 05/06/09   Time: 15:49
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 662 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
S_P(-1)	-1.333688	0.057033	-23.38453	0.0000
D(S_P(-1))	0.204428	0.038356	5.329769	0.0000
C	0.001745	0.001309	1.332302	0.1832
@TREND(4/28/2006)	-7.03E-06	3.42E-06	-2.057441	0.0400

R-squared	0.571757	Mean dependent var	4.08E-06
Adjusted R-squared	0.569805	S.D. dependent var	0.025491
S.E. of regression	0.016719	Akaike info criterion	-5.338466
Sum squared resid	0.183937	Schwarz criterion	-5.311304
Log likelihood	1771.032	F-statistic	292.8374
Durbin-Watson stat	1.972915	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

3.4) ตลาดอนุพันธ์นิเคอิ

Null Hypothesis: JAPAN has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=18)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-25.78845	0.0000
Test critical values:	1% level	-3.973022	
	5% level	-3.417130	
	10% level	-3.130946	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(JAPAN)
Method: Least Squares
Date: 05/06/09   Time: 15:50
Sample (adjusted): 5/02/2006 11/28/2008
Included observations: 616 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
JAPAN(-1)	-1.041359	0.040381	-25.78845	0.0000
C	0.000895	0.001617	0.553664	0.5800
@TREND(4/28/2006)	-5.99E-06	4.53E-06	-1.320274	0.1872
R-squared	0.520362	Mean dependent var		2.23E-05
Adjusted R-squared	0.518797	S.D. dependent var		0.028808
S.E. of regression	0.019984	Akaike info criterion		-4.982933
Sum squared resid	0.244802	Schwarz criterion		-4.961392
Log likelihood	1537.743	F-statistic		332.5239
Durbin-Watson stat	2.001272	Prob(F-statistic)		0.000000

ที่มา: การคำนวณ โดยใช้โปรแกรม EVIEWS 5.1

3.5) ตลาดอนุพันธ์ฮั่งเส็ง

Null Hypothesis: HONG_KONG has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-26.47147	0.0000
Test critical values:	1% level	-3.972526	
	5% level	-3.416888	
	10% level	-3.130803	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HONG_KONG)
Method: Least Squares
Date: 05/06/09   Time: 15:51
Sample (adjusted): 5/03/2006 11/28/2008
Included observations: 637 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HONG_KONG(-1)	-1.050562	0.039687	-26.47147	0.0000
C	0.002580	0.001779	1.450799	0.1473
@TREND(4/28/2006)	-8.18E-06	4.82E-06	-1.696091	0.0904

R-squared	0.525005	Mean dependent var	8.22E-06
Adjusted R-squared	0.523506	S.D. dependent var	0.032345
S.E. of regression	0.022327	Akaike info criterion	-4.761322
Sum squared resid	0.316052	Schwarz criterion	-4.740333
Log likelihood	1519.481	F-statistic	350.3749
Durbin-Watson stat	2.002529	Prob(F-statistic)	0.000000

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

ภาคผนวก ข

การประมาณค่าพารามิเตอร์

1) การประมาณค่าพารามิเตอร์ของอัตราผลตอบแทนของดัชนีราคาในตลาดหลักทรัพย์ไทย จาก แบบจำลอง ARIMA-EGARCH

Dependent Variable: THAILAND
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 05/06/09   Time: 14:52
Sample (adjusted): 5/08/2006 11/28/2008
Included observations: 633 after adjustments
Convergence achieved after 47 iterations
MA backcast: 5/02/2006 5/04/2006, Variance backcast: ON
LOG(GARCH) = C(4) + C(5)*ABS(RESID(-1)/@SQRT(GARCH(-1))) +
    C(6)*RESID(-1)/@SQRT(GARCH(-1)) + C(7)*LOG(GARCH(-1))

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000908	0.000596	1.523739	0.1276
AR(3)	0.927687	0.058350	15.89880	0.0000
MA(3)	-0.942209	0.055496	-16.97789	0.0000
Variance Equation				
C(4)	-0.711572	0.118553	-6.002131	0.0000
C(5)	0.192285	0.043456	4.424819	0.0000
C(6)	-0.194966	0.026880	-7.253103	0.0000
C(7)	0.930773	0.012433	74.86085	0.0000
R-squared	-0.003520	Mean dependent var		-0.000801
Adjusted R-squared	-0.013139	S.D. dependent var		0.021835
S.E. of regression	0.021978	Akaike info criterion		-5.210525
Sum squared resid	0.302377	Schwarz criterion		-5.161309
Log likelihood	1656.131	Durbin-Watson stat		2.136551
Inverted AR Roots	.98	-.49-.84i	-.49+.84i	
Inverted MA Roots	.98	-.49-.85i	-.49+.85i	

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

2) การประมาณค่าพารามิเตอร์ของอัตราผลตอบแทนของดัชนีราคาในตลาดหลักทรัพย์ดาวโจนส์

จากแบบจำลอง ARIMA-EGARCH

Dependent Variable: DOWJONES
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 05/06/09   Time: 14:38
Sample (adjusted): 5/23/2006 11/28/2008
Included observations: 643 after adjustments
Convergence achieved after 46 iterations
MA backcast: 5/01/2006 5/22/2006, Variance backcast: ON
LOG(GARCH) = C(4) + C(5)*ABS(RESID(-1)/@SQRT(GARCH(-1))) +
    C(6)*RESID(-1)/@SQRT(GARCH(-1)) + C(7)*LOG(GARCH(-1))

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000642	0.000320	2.005354	0.0449
AR(16)	0.697797	0.086899	8.029981	0.0000
MA(16)	-0.698869	0.083679	-8.351753	0.0000

Variance Equation				
C(4)	-0.260703	0.050096	-5.204033	0.0000
C(5)	0.080819	0.020989	3.850526	0.0001
C(6)	-0.216270	0.019793	-10.92653	0.0000
C(7)	0.979494	0.004911	199.4559	0.0000

R-squared	0.000163	Mean dependent var	-0.000223
Adjusted R-squared	-0.009270	S.D. dependent var	0.016678
S.E. of regression	0.016755	Akaike info criterion	-6.357712
Sum squared resid	0.178555	Schwarz criterion	-6.309091
Log likelihood	2051.004	F-statistic	0.017256
Durbin-Watson stat	2.271660	Prob(F-statistic)	0.999978

Inverted AR Roots	.98	.90+.37i	.90-.37i	.69+.69i
	.69-.69i	.37-.90i	.37+.90i	.00-.98i
	-.00+.98i	-.37-.90i	-.37+.90i	-.69-.69i
	-.69-.69i	-.90+.37i	-.90-.37i	-.98
Inverted MA Roots	.98	.90+.37i	.90-.37i	.69+.69i
	.69+.69i	.37-.90i	.37+.90i	.00+.98i
	.00-.98i	-.37-.90i	-.37+.90i	-.69+.69i
	-.69-.69i	-.90+.37i	-.90-.37i	-.98

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

3) การประมาณค่าพารามิเตอร์ของอัตราผลตอบแทนของดัชนีราคาในตลาดหลักทรัพย์เอสแอนด์พี

จากแบบจำลอง ARIMA-EGARCH

Dependent Variable: S_P
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 05/06/09   Time: 14:50
Sample (adjusted): 5/16/2006 11/28/2008
Included observations: 653 after adjustments
Convergence achieved after 32 iterations
MA backcast: 5/01/2006 5/15/2006, Variance backcast: ON
LOG(GARCH) = C(4) + C(5)*ABS(RESID(-1)/@SQRT(GARCH(-1))) +
    C(6)*RESID(-1)/@SQRT(GARCH(-1)) + C(7)*LOG(GARCH(-1))

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000762	0.000310	2.456176	0.0140
AR(11)	0.849604	0.043568	19.50060	0.0000
MA(11)	-0.839314	0.048344	-17.36114	0.0000
Variance Equation				
C(4)	-0.241754	0.047925	-5.044452	0.0000
C(5)	0.042191	0.018076	2.334160	0.0196
C(6)	-0.236001	0.023181	-10.18101	0.0000
C(7)	0.978898	0.004596	213.0102	0.0000
R-squared	0.003801	Mean dependent var		-0.000420
Adjusted R-squared	-0.005452	S.D. dependent var		0.017263
S.E. of regression	0.017310	Akaike info criterion		-6.273504
Sum squared resid	0.193555	Schwarz criterion		-6.225462
Log likelihood	2055.299	F-statistic		0.410758
Durbin-Watson stat	2.198978	Prob(F-statistic)		0.872091
Inverted AR Roots	.99	.83+.53i	.83-.53i	.41-.90i
	.41+.90i	-.14-.98i	-.14+.98i	-.65+.74i
	-.65-.74i	-.95+.28i	-.95-.28i	
Inverted MA Roots	.98	.83+.53i	.83-.53i	.41+.90i
	.41-.90i	-.14-.97i	-.14+.97i	-.64+.74i
	-.64-.74i	-.94-.28i	-.94+.28i	

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

4) การประมาณค่าพารามิเตอร์ของอัตราผลตอบแทนของดัชนีราคาในตลาดหลักทรัพย์นิเคอิ
จากแบบจำลอง ARIMA-EGARCH

Dependent Variable: JAPAN
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 05/06/09   Time: 14:48
Sample (adjusted): 5/12/2006 11/28/2008
Included observations: 611 after adjustments
Convergence achieved after 58 iterations
MA backcast: 5/01/2006 5/11/2006, Variance backcast: ON
LOG(GARCH) = C(6) + C(7)*ABS(RESID(-1)/@SQRT(GARCH(-1))) +
    C(8)*RESID(-1)/@SQRT(GARCH(-1)) + C(9)*LOG(GARCH(-1))

	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.000714	0.000529	-1.348681	0.1774
AR(1)	0.134734	0.022390	6.017620	0.0000
AR(6)	-0.836486	0.023323	-35.86505	0.0000
MA(1)	-0.134226	0.009996	-13.42770	0.0000
MA(6)	0.867246	0.008688	99.81698	0.0000
Variance Equation				
C(6)	-0.369716	0.071564	-5.166238	0.0000
C(7)	0.111905	0.035737	3.131316	0.0017
C(8)	-0.177456	0.027457	-6.462966	0.0000
C(9)	0.966635	0.007486	129.1186	0.0000
R-squared	0.008304	Mean dependent var		-0.000921
Adjusted R-squared	-0.004875	S.D. dependent var		0.020056
S.E. of regression	0.020105	Akaike info criterion		-5.642325
Sum squared resid	0.243324	Schwarz criterion		-5.577290
Log likelihood	1732.730	F-statistic		0.630105
Durbin-Watson stat	2.080599	Prob(F-statistic)		0.752776
Inverted AR Roots	.86+.48i	.86-.48i	.02-.97i	.02+.97i
	-.82+.48i	-.82-.48i		
Inverted MA Roots	.87+.49i	.87-.49i	.02-.98i	.02+.98i
	-.82+.49i	-.82-.49i		

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1

5) การประมาณค่าพารามิเตอร์ของอัตราผลตอบแทนของดัชนีราคาในตลาดหลักทรัพย์ฮั่งเส็ง จากแบบจำลอง ARIMA-EGARCH

Dependent Variable: HONG_KONG
Method: ML - ARCH (Marquardt) - Normal distribution
Date: 05/06/09   Time: 14:46
Sample (adjusted): 6/20/2006 11/28/2008
Included observations: 605 after adjustments
Convergence achieved after 17 iterations
MA backcast: 5/02/2006 6/19/2006, Variance backcast: ON
LOG(GARCH) = C(6) + C(7)*ABS(RESID(-1)/@SQRT(GARCH(-1))) +
    C(8)*RESID(-1)/@SQRT(GARCH(-1)) + C(9)*LOG(GARCH(-1))

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000649	0.000591	1.097597	0.2724
AR(1)	0.417353	0.083078	5.023627	0.0000
AR(33)	-0.429587	0.064780	-6.631513	0.0000
MA(1)	-0.429984	0.077129	-5.574876	0.0000
MA(33)	0.472844	0.064811	7.295707	0.0000

Variance Equation				
C(6)	-0.443103	0.106154	-4.174147	0.0000
C(7)	0.222895	0.042135	5.290074	0.0000
C(8)	-0.125859	0.022951	-5.483806	0.0000
C(9)	0.966550	0.010703	90.30984	0.0000

R-squared	0.004050	Mean dependent var	6.15E-05
Adjusted R-squared	-0.009318	S.D. dependent var	0.022693
S.E. of regression	0.022799	Akaike info criterion	-5.289282
Sum squared resid	0.309789	Schwarz criterion	-5.223750
Log likelihood	1609.008	F-statistic	0.302966
Durbin-Watson stat	2.061095	Prob(F-statistic)	0.964872

Inverted AR Roots	.99-.09i	.99+.09i	.95+.27i	.95-.27i
	.88-.44i	.88+.44i	.78+.60i	.78-.60i
	.65-.73i	.65+.73i	.50+.84i	.50-.84i
	.33-.92i	.33+.92i	.15-.96i	.15+.96i
	-.03-.97i	-.03+.97i	-.22+.95i	-.22-.95i
	-.39-.88i	-.39+.88i	-.55-.79i	-.55+.79i
	-.69+.67i	-.69-.67i	-.81+.53i	-.81-.53i
	-.89+.36i	-.89-.36i	-.95+.18i	-.95-.18i
	-.96			
Inverted MA Roots	.99-.09i	.99+.09i	.95+.27i	.95-.27i
	.88+.45i	.88-.45i	.78+.60i	.78-.60i
	.65+.74i	.65-.74i	.50-.84i	.50+.84i

.33+.92i	.33-.92i	.15-.96i	.15+.96i
-.03-.97i	-.03+.97i	-.22-.95i	-.22+.95i
-.39+.89i	-.39-.89i	-.56+.79i	-.56-.79i
-.70+.67i	-.70-.67i	-.81-.53i	-.81+.53i
-.90-.36i	-.90+.36i	-.95+.18i	-.95-.18i
-.97			

ที่มา: การคำนวณโดยใช้โปรแกรม EVIEWS 5.1
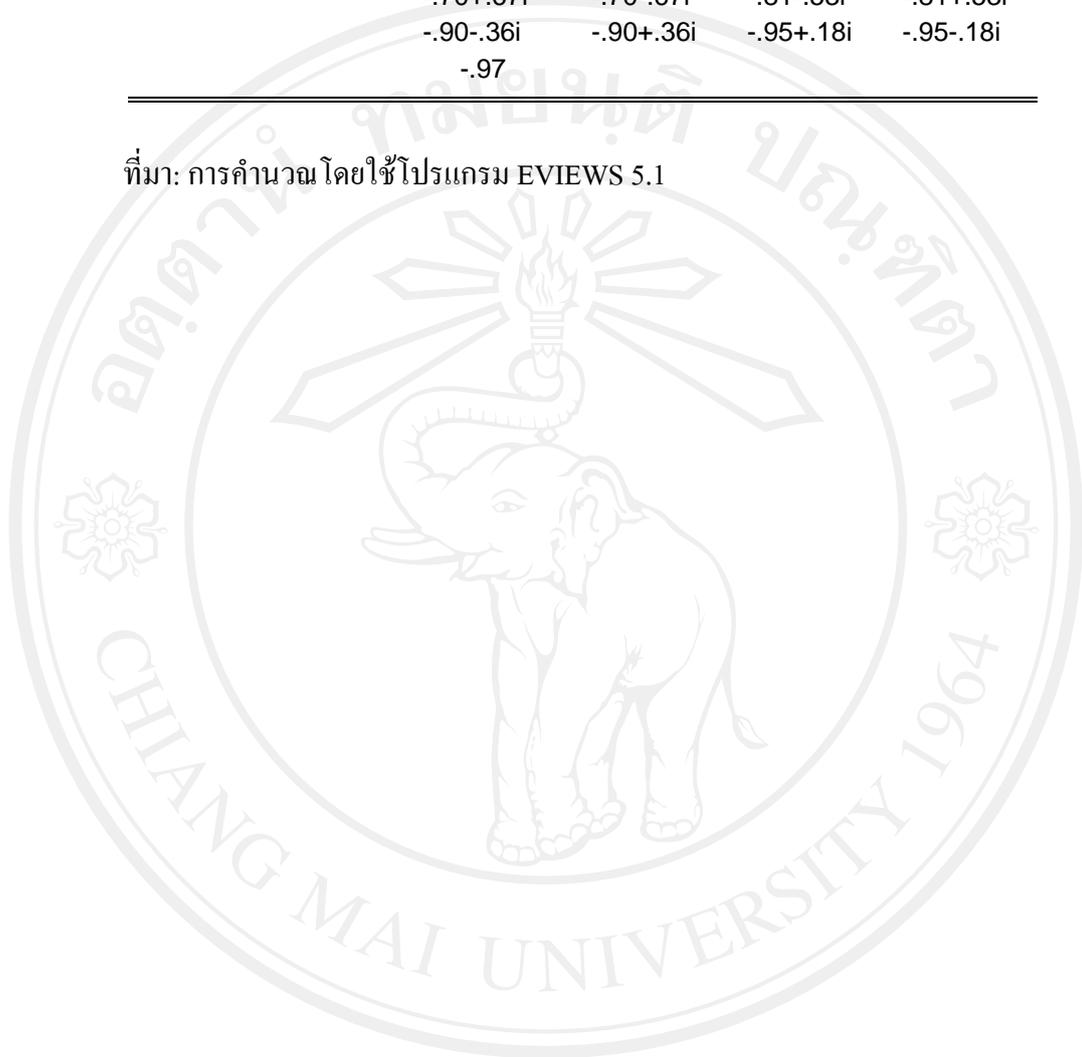
ประวัติผู้เขียน

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