



ภาคผนวก

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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ข้อมูลที่ใช้ในการศึกษา

ตารางภาคผนวกที่ 1 แสดงข้อมูลที่ใช้ในการศึกษา

หน่วย: บาท, *เหรียญสหรัฐ/บาเรล

เดือน ปี	มูลค่าข้าวส่งออก ₁	มูลค่ายางพารา ₂	ดัชนีบอกลด ₃	ราคาน้ำมันดิบ ₄ *	อัตราแลกเปลี่ยน ₅
ม.ค. 45	5,932,848,693	4,970,700,000	39,988.32	19.71	44.0215
ก.พ. 45	4,610,205,215	4,398,300,000	45,003.15	20.72	43.8204
มี.ค. 45	4,872,723,619	5,170,200,000	46,980.44	24.53	43.3876
เม.ย. 45	3,996,458,226	4,416,800,000	44,386.94	26.18	43.4182
พ.ค. 45	5,210,391,470	4,174,900,000	44,097.44	27.04	42.7939
มิ.ย. 45	2,739,366,419	5,821,300,000	41,707.50	25.52	42.1511
ก.ค. 45	2,745,055,066	6,073,000,000	40,656.00	26.97	41.2049
ส.ค.45	2,925,909,611	6,486,000,000	43,739.92	28.39	42.1784
ก.ย.45	3,404,584,867	8,255,100,000	59,122.75	29.66	42.8223
ต.ค.45	5,664,251,713	9,042,500,000	61,341.93	28.84	43.6571
พ.ย.45	4,141,201,270	8,383,300,000	67,813.20	26.35	43.3176
ธ.ค.45	2,616,058,432	7,414,000,000	74,873.05	29.46	43.2767
ม.ค. 46	3,039,255,765	10,363,900,000	65,438.10	32.95	42.7711
ก.พ. 46	2,773,683,550	11,193,500,000	75,463.91	35.83	42.8767
มี.ค. 46	2,537,500,455	11,532,100,000	83,008.59	33.51	42.7501
เม.ย. 46	3,106,952,665	7,983,700,000	91,591.91	28.17	42.8793
พ.ค. 46	2,923,234,612	7,863,600,000	88,695.90	28.11	42.1477
มิ.ย. 46	3,208,541,776	8,187,000,000	89,398.75	30.66	41.6548
ก.ค. 46	4,256,048,205	8,783,300,000	91,514.76	30.75	41.7772
ส.ค.46	4,511,577,366	7,880,800,000	93,136.80	31.57	41.6651
ก.ย.46	3,984,189,373	9,884,100,000	119,720.00	28.31	40.497
ต.ค.46	4,246,786,012	9,811,300,000	181,744.50	30.34	39.7279

ที่มา: 1. สมาคมผู้ส่งออกข้าวไทย 2. สถาบันวิจัยยาง กรมวิชาการเกษตร 3.ฐานข้อมูล Reuters

4.ธนาคารแห่งประเทศไทย 5.กรมเศรษฐกิจระหว่างประเทศ กระทรวงการต่างประเทศไทย

ตารางภาคผนวกที่ 1 แสดงข้อมูลที่ใช้ในการศึกษา (ต่อ)

หน่วย: บาท, *เหรียญสหรัฐ/บาเรล

เดือน ปี	มูลค่าข้าวส่งออก ₁	มูลค่ายางพารา ₂	ดัชนีบอกลติ ₃	ราคาน้ำมันดิบ ₄ *	อัตราแลกเปลี่ยน ₅
พ.ย.46	4,562,787,620	9,778,400,000	176,238.30	31.11	39.9048
ธ.ค.46	4,583,193,934	12,565,100,000	188,622.50	32.13	39.7113
ม.ค. 47	3,210,769,409	11,155,600,000	217,765.70	34.31	39.0928
ก.พ. 47	4,322,039,367	11,818,300,000	206,572.80	34.68	39.0964
มี.ค. 47	5,292,043,507	11,945,700,000	189,118.80	36.74	39.4517
เม.ย. 47	5,334,010,090	9,741,700,000	158,320.00	36.75	39.4415
พ.ค. 47	6,460,803,041	10,222,500,000	133,148.70	40.28	40.5678
มิ.ย. 47	7,461,199,416	10,519,700,000	122,934.50	38.03	40.8035
ก.ค. 47	7,795,669,767	11,842,500,000	167,061.00	40.78	40.9353
ส.ค.47	5,748,508,897	11,523,800,000	174,137.60	44.90	41.5032
ก.ย.47	7,095,055,884	7,594,200,000	169,864.90	45.94	41.471
ต.ค.47	8,774,316,793	15,443,200,000	201,949.70	53.28	41.3138
พ.ย.47	7,110,302,993	12,740,000,000	238,288.40	48.47	40.3416
ธ.ค.47	5,745,843,741	12,905,900,000	178,632.30	43.15	39.2197
ม.ค. 48	6,002,546,859	11,495,100,000	172,967.50	46.84	38.7502
ก.พ. 48	4,377,798,818	10,750,800,000	180,675.00	48.15	38.4796
มี.ค. 48	4,543,575,746	11,363,400,000	181,353.10	54.19	38.6061
เม.ย. 48	4,772,181,288	9,131,300,000	151,805.50	52.98	39.5287
พ.ค. 48	4,386,564,471	9,685,000,000	130,755.80	49.83	39.8378
มิ.ย. 48	4,995,996,867	9,237,500,000	104,129.90	56.35	40.9221
ก.ค. 48	4,566,333,260	12,004,600,000	75,100.52	59.00	41.7628
ส.ค.48	4,893,404,522	15,393,000,000	106,907.00	64.99	41.1914
ก.ย.48	4,336,166,250	14,913,000,000	119,245.10	65.59	41.0518
ต.ค.48	4,884,960,447	14,146,000,000	126,885.90	62.26	40.9075
พ.ย.48	3,813,824,338	16,009,900,000	114,179.40	58.32	41.124

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4.ธนาคารแห่งประเทศไทย 5.กรมเศรษฐกิจระหว่างประเทศ กระทรวงการต่างประเทศไทย

ตารางภาคผนวกที่ 1 แสดงข้อมูลที่ใช้ในการศึกษา (ต่อ)

หน่วย: บาท, *เหรียญสหรัฐ/บาเรล

เดือน ปี	มูลค่าข้าวส่งออก ₁	มูลค่ายางพารา ₂	ดัชนีบอกลติ ₃	ราคาน้ำมันดิบ ₄ *	อัตราแลกเปลี่ยน ₅
ธ.ค.48	4,440,196,314	14,550,200,000	98,723.10	59.41	41.0747
ม.ค. 49	4,520,362,379	15,185,400,000	80,992.52	65.49	39.6158
ก.พ. 49	4,362,656,901	16,503,300,000	104,680.80	61.63	39.4094
มี.ค. 49	4,280,801,207	17,903,300,000	97,007.05	62.69	38.9776
เม.ย. 49	4,250,336,498	13,912,000,000	88,847.36	69.44	37.9933
พ.ค. 49	5,879,968,837	14,983,100,000	92,811.59	70.84	38.0132
มิ.ย. 49	5,062,495,852	16,311,400,000	112,928.40	70.95	38.3499
ก.ค. 49	4,441,339,171	19,786,700,000	124,337.20	74.41	38.0043
ส.ค.49	4,087,726,543	20,920,500,000	144,531.80	73.04	37.6357
ก.ย.49	5,462,244,675	18,466,500,000	148,097.20	63.8	37.4289
ต.ค.49	5,659,826,246	17,399,200,000	148,057.00	58.89	37.338
พ.ย.49	4,745,482,557	17,698,000,000	155,575.70	59.08	36.5437
ธ.ค.49	4,123,665,729	16,400,700,000	155,741.70	61.96	35.8337
ม.ค. 50	3,748,454,610	14,531,700,000	146,396.30	54.51	35.971
ม.ค. 51	8,601,170,725	20,591,700,000	187,612.00	92.97	33.1846
ก.พ. 51	9,210,290,447	18,160,200,000	235,241.70	95.39	32.6045
มี.ค. 51	11,826,216,235	18,990,900,000	253,420.20	105.45	31.4561
เม.ย. 51	9,993,338,979	15,906,300,000	296,023.80	112.58	31.5916
พ.ค. 51	16,174,562,243	16,225,500,000	371,571.20	125.40	32.1136
มิ.ย. 51	20,463,687,859	17,750,500,000	320,080.80	133.88	33.2025
ก.ค. 51	19,018,940,923	23,844,000,000	279,340.10	133.37	33.503
ส.ค.51	13,384,749,229	23,390,800,000	232,799.70	116.67	33.8556
ก.ย.51	11,656,762,836	24,573,000,000	108,734.60	104.11	34.2905
ต.ค.51	8,167,136,246	21,649,600,000	29,810.53	76.61	34.4285
พ.ย.51	5,117,895,226	12,500,500,000	25,353.90	57.31	35.0905

ที่มา: 1. สมาคมผู้ส่งออกข้าวไทย 2. สถาบันวิจัยยาง กรมวิชาการเกษตร 3.ฐานข้อมูล Reuters
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ตารางภาคผนวกที่ 1 แสดงข้อมูลที่ใช้ในการศึกษา (ต่อ)

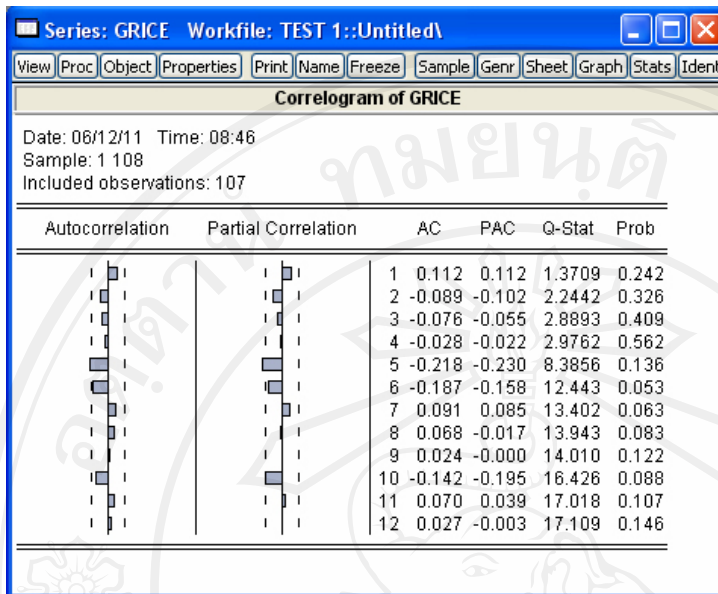
หน่วย: บาท, *เหรียญสหรัฐ/บาเรล

เดือน ปี	มูลค่าข้าวส่งออก ₁	มูลค่ายางพารา ₂	ดัชนีบอกลติ ₃	ราคาน้ำมันดิบ ₄ *	อัตราแลกเปลี่ยน ₅
ธ.ค.51	6,289,887,650	10,045,200,000	26,865.54	41.12	35.035
ม.ค. 52	6,958,706,669	10,282,400,000	37,385.80	41.71	34.9168
ก.พ. 52	7,613,809,176	11,926,800,000	71,774.04	39.09	35.3258
มี.ค. 52	6,992,086,025	10,773,300,000	57,267.90	47.94	35.7832
เม.ย. 52	7,886,189,612	8,245,000,000	62,956.50	49.65	35.4573
พ.ค. 52	10,657,494,729	8,061,900,000	119,809.30	59.03	34.5738
มิ.ย. 52	10,631,513,975	9,728,100,000	127,888.30	69.64	34.1377
ก.ค. 52	8,569,379,361	11,114,600,000	113,900.00	64.15	34.0492
ส.ค.52	9,497,126,829	11,360,800,000	82,338.20	71.05	34.0205
ก.ย.52	9,557,320,099	12,095,100,000	74,170.20	69.41	33.8284
ต.ค.52	9,216,572,129	14,267,400,000	103,764.30	75.72	33.4118
พ.ย.52	6,716,631,771	16,962,100,000	129,126.10	77.99	33.284
ธ.ค.52	8,016,891,527	21,370,700,000	100,186.70	74.47	33.2322
ม.ค. 53	9,531,555,306	22,066,800,000	94,468.16	78.33	33.0353
ก.พ. 53	9,242,180,202	20,618,700,000	90,354.00	76.39	33.1491
มี.ค. 53	8,807,934,404	20,669,800,000	96,955.32	81.20	32.5077
เม.ย. 53	7,094,946,277	14,099,200,000	108,434.80	84.29	32.2877
พ.ค. 53	8,077,449,509	17,053,500,000	132,575.80	73.74	32.3946
มิ.ย. 53	6,297,159,552	20,966,200,000	77,954.41	75.34	32.4723
ก.ค. 53	7,570,541,745	20,200,600,000	63,357.07	76.32	32.3265
ส.ค.53	6,398,645,837	21,317,800,000	84,808.38	76.60	31.7424
ก.ย.53	9,451,298,548	21,530,500,000	74,162.72	75.24	30.8341
ต.ค.53	10,401,222,194	21,269,600,000	80,125.76	81.89	29.9704
พ.ย.53	10,550,230,500	22,615,800,000	63,284.85	84.25	29.886
ธ.ค.53	12,614,836,901	26,853,900,000	53,207.73	89.15	30.1176

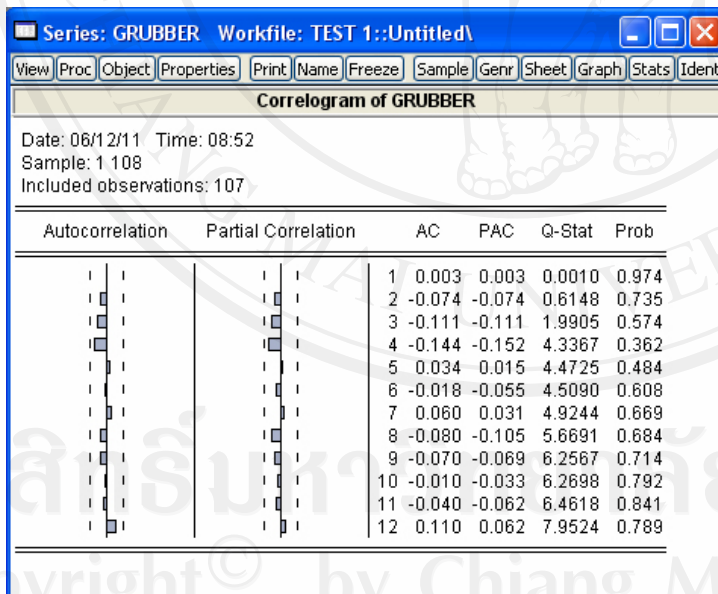
ที่มา: 1. สมาคมผู้ส่งออกข้าวไทย 2. สถาบันวิจัยยาง กรมวิชาการเกษตร 3.ฐานข้อมูล Reuters

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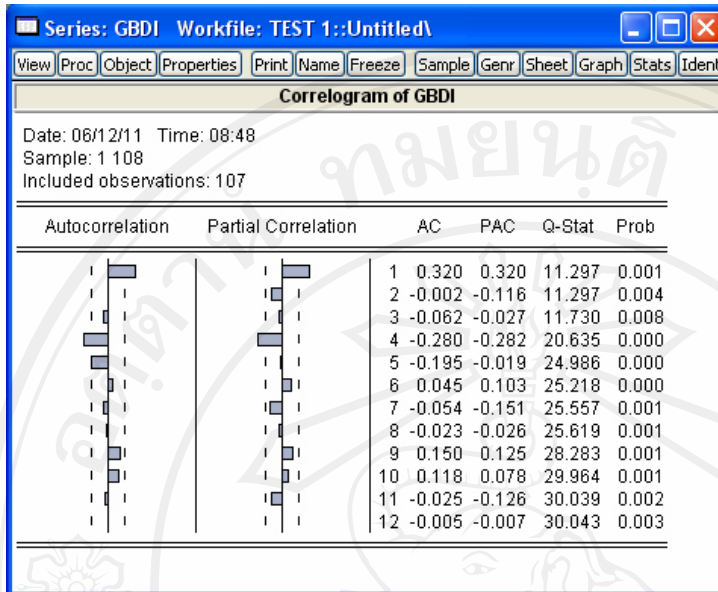
รูปภาคผนวกที่ 1 แสดงผลการทดสอบ Autocorrelation ของ GRICE



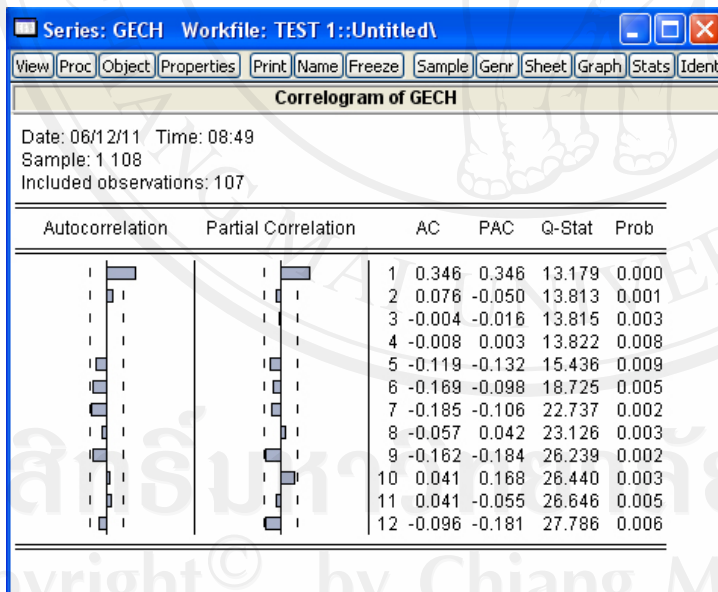
รูปภาคผนวกที่ 2 แสดงผลการทดสอบ Autocorrelation ของ GRUBBER



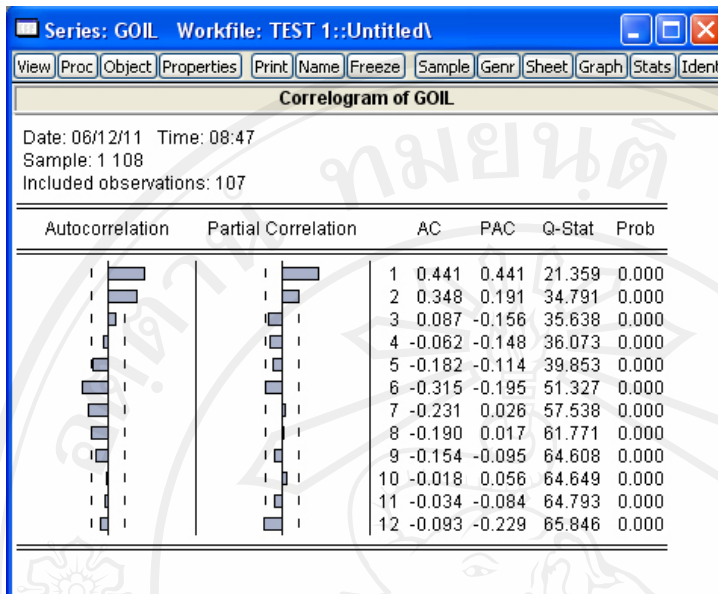
รูปภาคผนวกที่ 3 แสดงผลการทดสอบ Autocorrelation ของ GBDI



รูปภาคผนวกที่ 4 แสดงผลการทดสอบ Autocorrelation ของ GECH



รูปภาคผนวกที่ 5 แสดงผลการทดสอบ Autocorrelation ของ GOIL



ตารางภาคผนวกที่ 2 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test
ของตัวแปร GBDI แบบจำลอง Intercept (At Level)

Null Hypothesis: GBDI has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic	-7.293547
Test critical values:	
1% level	-2.586960
5% level	-1.943882
10% level	-1.614731

*MacKinnon (1996)

DF-GLS Test Equation on GLS Detrended Residuals

Dependent Variable: D(GLSRESID)

Method: Least Squares

Date: 04/30/11 Time: 09:03

Sample (adjusted): 3 108

Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.673410	0.092330	-7.293547	0.0000

R-squared	0.336254	Mean dependent var	-142.3769
Adjusted R-squared	0.336254	S.D. dependent var	34389.61
S.E. of regression	28017.42	Akaike info criterion	23.32843
Sum squared resid	8.24E+10	Schwarz criterion	23.35356
Log likelihood	-1235.407	Hannan-Quinn criter.	23.33861
Durbin-Watson stat	1.926653		

ตารางภาคผนวกที่ 3 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GBDI แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GBDI has a unit root Exogenous: Constant, Linear Trend Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-7.395257
Test critical values:				
1% level				-3.572800
5% level				-3.024000
10% level				-2.734000
*Elliott-Rothenberg-Stock (1996, Table 1) DF-GLS Test Equation on GLS Detrended Residuals Dependent Variable: D(GLSRESID) Method: Least Squares Date: 04/30/11 Time: 09:15 Sample (adjusted): 3 108 Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.685054	0.092634	-7.395257	0.0000
R-squared	0.342474	Mean dependent var		-39.00322
Adjusted R-squared	0.342474	S.D. dependent var		34389.61
S.E. of regression	27885.83	Akaike info criterion		23.31901
Sum squared resid	8.17E+10	Schwarz criterion		23.34414
Log likelihood	-1234.908	Hannan-Quinn criter.		23.32920
Durbin-Watson stat	1.924181			

ตารางภาคผนวกที่ 4 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GOIL แบบจำลอง Intercept (At Level)

Null Hypothesis: GOIL has a unit root Exogenous: Constant Lag Length: 1 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-4.383311
Test critical values:				
1% level				-2.587172
5% level				-1.943912
10% level				-1.614713

*MacKinnon (1996)
DF-GLS Test Equation on GLS Detrended Residuals
Dependent Variable: D(GLSRESID)
Method: Least Squares
Date: 04/30/11 Time: 09:17
Sample (adjusted): 4 108

Included observations: 105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.447055	0.101990	-4.383311	0.0000
D(GLSRESID(-1))	-0.193508	0.096740	-2.000292	0.0481
R-squared	0.303896	Mean dependent var		0.010381
Adjusted R-squared	0.297138	S.D. dependent var		6.435156
S.E. of regression	5.395035	Akaike info criterion		6.227699
Sum squared resid	2997.959	Schwarz criterion		6.278251
Log likelihood	-324.9542	Hannan-Quinn criter.		6.248183
Durbin-Watson stat	1.938739			

ตารางภาคผนวกที่ 5 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GOIL แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GOIL has a unit root		
Exogenous: Constant, Linear Trend		
Lag Length: 1 (Automatic based on Modified SIC, MAXLAG=12)		
		t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic		-4.387286
Test critical values:	1% level	-3.574000
	5% level	-3.025000
	10% level	-2.735000

*Elliott-Rothenberg-Stock (1996, Table 1)
 DF-GLS Test Equation on GLS Detrended Residuals
 Dependent Variable: D(GLSRESID)
 Method: Least Squares
 Date: 04/30/11 Time: 09:19
 Sample (adjusted): 4 108
 Included observations: 105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.447250	0.101942	-4.387286	0.0000
D(GLSRESID(-1))	-0.193433	0.096715	-2.000036	0.0481
R-squared	0.304097	Mean dependent var		0.006540
Adjusted R-squared	0.297341	S.D. dependent var		6.435156
S.E. of regression	5.394254	Akaike info criterion		6.227410
Sum squared resid	2997.091	Schwarz criterion		6.277961
Log likelihood	-324.9390	Hannan-Quinn criter.		6.247894
Durbin-Watson stat	1.939080			

ตารางภาคผนวกที่ 6 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GECHแบบจำลอง Intercept (At Level)

Null Hypothesis: GECH has a unit root				
Exogenous: Constant				
Lag Length: 2 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-5.237613
Test critical values:	1% level			-2.587387
	5% level			-1.943943
	10% level			-1.614694
*MacKinnon (1996)				
DF-GLS Test Equation on GLS Detrended Residuals				
Dependent Variable: D(GLSRESID)				
Method: Least Squares				
Date: 04/30/11 Time: 09:20				
Sample (adjusted): 5 108				
Included observations: 104 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.691986	0.132119	-5.237613	0.0000
D(GLSRESID(-1))	0.060828	0.118126	0.514939	0.6077
D(GLSRESID(-2))	0.018020	0.100494	0.179319	0.8580
R-squared	0.324690	Mean dependent var		0.001933
Adjusted R-squared	0.311317	S.D. dependent var		0.598458
S.E. of regression	0.496642	Akaike info criterion		1.466527
Sum squared resid	24.91197	Schwarz criterion		1.542807
Log likelihood	-73.25940	Hannan-Quinn criter.		1.497430
Durbin-Watson stat	1.971026			

ตารางภาคผนวกที่ 7 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GECHแบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GECH has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 2 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-5.206682
Test critical values:	1% level			-3.575200
	5% level			-3.026000
	10% level			-2.736000

*Elliott-Rothenberg-Stock (1996, Table 1)

DF-GLS Test Equation on GLS Detrended Residuals

Dependent Variable: D(GLSRESID)

Method: Least Squares

Date: 04/30/11 Time: 09:22
 Sample (adjusted): 5 108
 Included observations: 104 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.684222	0.131412	-5.206682	0.0000
D(GLSRESID(-1))	0.056606	0.117980	0.479794	0.6324
D(GLSRESID(-2))	0.016700	0.100608	0.165989	0.8685
R-squared	0.322992	Mean dependent var		0.000691
Adjusted R-squared	0.309586	S.D. dependent var		0.598458
S.E. of regression	0.497266	Akaike info criterion		1.469038
Sum squared resid	24.97461	Schwarz criterion		1.545319
Log likelihood	-73.38999	Hannan-Quinn criter.		1.499942
Durbin-Watson stat	1.972993			

ตารางภาคผนวกที่ 8 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test
 ของตัวแปร GRICEแบบจำลอง Intercept (At Level)

Null Hypothesis: GRICE has a unit root
 Exogenous: Constant
 Lag Length: 11 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic	-0.913591
Test critical values:	
1% level	-2.589531
5% level	-1.944248
10% level	-1.614510

*MacKinnon (1996)
 DF-GLS Test Equation on GLS Detrended Residuals
 Dependent Variable: D(GLSRESID)
 Method: Least Squares
 Date: 04/30/11 Time: 09:25
 Sample (adjusted): 14 108
 Included observations: 95 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.173247	0.189633	-0.913591	0.3636
D(GLSRESID(-1))	-0.550008	0.206579	-2.662461	0.0093
D(GLSRESID(-2))	-0.537050	0.207139	-2.592696	0.0113
D(GLSRESID(-3))	-0.520068	0.209792	-2.478966	0.0152
D(GLSRESID(-4))	-0.425280	0.209512	-2.029860	0.0456
D(GLSRESID(-5))	-0.608248	0.204605	-2.972798	0.0039
D(GLSRESID(-6))	-0.602490	0.196828	-3.060992	0.0030
D(GLSRESID(-7))	-0.345173	0.186113	-1.854640	0.0672
D(GLSRESID(-8))	-0.310654	0.174104	-1.784299	0.0780
D(GLSRESID(-9))	-0.140093	0.157529	-0.889315	0.3764
D(GLSRESID(-10))	-0.300969	0.132005	-2.279988	0.0252
D(GLSRESID(-11))	-0.104325	0.109896	-0.949307	0.3452

R-squared 0.467290 Mean dependent var 17277991

Adjusted R-squared	0.396690	S.D. dependent var	2.02E+09
S.E. of regression	1.57E+09	Akaike info criterion	45.30050
Sum squared resid	2.04E+20	Schwarz criterion	45.62309
Log likelihood	-2139.774	Hannan-Quinn criter.	45.43085
Durbin-Watson stat	1.983766		

ตารางภาคผนวกที่ 9 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GRICEแบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRICE has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 12 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic	-1.849644
Test critical values:	
1% level	-3.602800
5% level	-3.049200
10% level	-2.758000

*Elliott-Rothenberg-Stock (1996, Table 1)

DF-GLS Test Equation on GLS Detrended Residuals

Dependent Variable: D(GLSRESID)

Method: Least Squares

Date: 04/30/11 Time: 09:26

Sample (adjusted): 15 108

Included observations: 94 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.512242	0.276941	-1.849644	0.0680
D(GLSRESID(-1))	-0.241851	0.276368	-0.875104	0.3841
D(GLSRESID(-2))	-0.267371	0.271004	-0.986594	0.3268
D(GLSRESID(-3))	-0.275172	0.260552	-1.056110	0.2941
D(GLSRESID(-4))	-0.199406	0.255287	-0.781104	0.4370
D(GLSRESID(-5))	-0.410413	0.245392	-1.672482	0.0983
D(GLSRESID(-6))	-0.441361	0.238768	-1.848493	0.0682
D(GLSRESID(-7))	-0.221967	0.222480	-0.997696	0.3214
D(GLSRESID(-8))	-0.216270	0.201374	-1.073969	0.2860
D(GLSRESID(-9))	-0.070055	0.183931	-0.380879	0.7043
D(GLSRESID(-10))	-0.261271	0.162648	-1.606356	0.1121
D(GLSRESID(-11))	-0.090554	0.137418	-0.658967	0.5118
D(GLSRESID(-12))	-0.029352	0.110514	-0.265592	0.7912

R-squared	0.486364	Mean dependent var	7063749.
Adjusted R-squared	0.410270	S.D. dependent var	2.03E+09
S.E. of regression	1.56E+09	Akaike info criterion	45.29726
Sum squared resid	1.96E+20	Schwarz criterion	45.64900
Log likelihood	-2115.971	Hannan-Quinn criter.	45.43934
Durbin-Watson stat	1.975105		

ตารางภาคผนวกที่ 10 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GRUBBERแบบจำลอง Intercept (At Level)

Null Hypothesis: GRUBBER has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-9.842870
Test critical values:	1% level			-2.586960
	5% level			-1.943882
	10% level			-1.614731
*MacKinnon (1996)				
DF-GLS Test Equation on GLS Detrended Residuals				
Dependent Variable: D(GLSRESID)				
Method: Least Squares				
Date: 04/30/11 Time: 09:27				
Sample (adjusted): 3 108				
Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.977200	0.099280	-9.842870	0.0000
R-squared	0.479787	Mean dependent var		45382075
Adjusted R-squared	0.479787	S.D. dependent var		3.17E+09
S.E. of regression	2.29E+09	Akaike info criterion		45.94966
Sum squared resid	5.50E+20	Schwarz criterion		45.97478
Log likelihood	-2434.332	Hannan-Quinn criter.		45.95984
Durbin-Watson stat	1.960417			

ตารางภาคผนวกที่ 11 ผลการทดสอบ Unit root ด้วยวิธี Dickey – Fuller test

ของตัวแปร GRUBBERแบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRUBBER has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
				t-Statistic
Elliott-Rothenberg-Stock DF-GLS test statistic				-9.648565
Test critical values:	1% level			-3.572800
	5% level			-3.024000
	10% level			-2.734000
*Elliott-Rothenberg-Stock (1996, Table 1)				
DF-GLS Test Equation on GLS Detrended Residuals				
Dependent Variable: D(GLSRESID)				
Method: Least Squares				
Date: 04/30/11 Time: 09:28				
Sample (adjusted): 3 108				
Included observations: 106 after adjustments				

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GLSRESID(-1)	-0.947966	0.098249	-9.648565	0.0000
R-squared	0.469906	Mean dependent var		28912012
Adjusted R-squared	0.469906	S.D. dependent var		3.17E+09
S.E. of regression	2.31E+09	Akaike info criterion		45.96847
Sum squared resid	5.60E+20	Schwarz criterion		45.99360
Log likelihood	-2435.329	Hannan-Quinn criter.		45.97866
Durbin-Watson stat	1.978191			

ตารางภาคผนวกที่ 12 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GBDI แบบจำลอง Intercept (At Level)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.309453	0.0000
Test critical values:		
1% level	-3.493129	
5% level	-2.888932	
10% level	-2.581453	

*MacKinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GBDI)
Method: Least Squares
Date: 04/30/11 Time: 09:39
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.679204	0.092921	-7.309453	0.0000
C	6.897679	2727.973	0.002528	0.9980
R-squared	0.339381	Mean dependent var		-142.3769
Adjusted R-squared	0.333029	S.D. dependent var		34389.61
S.E. of regression	28085.41	Akaike info criterion		23.34258
Sum squared resid	8.20E+10	Schwarz criterion		23.39283
Log likelihood	-1235.157	Hannan-Quinn criter.		23.36294
F-statistic	53.42810	Durbin-Watson stat		1.925471
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 13 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GBDI แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GBDI has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.326012	0.0000
Test critical values:		
1% level	-4.046925	
5% level	-3.452764	
10% level	-3.151911	

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GBDI)
 Method: Least Squares
 Date: 04/30/11 Time: 09:40
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.685303	0.093544	-7.326012	0.0000
C	3467.511	5605.489	0.618592	0.5376
@TREND(1)	-63.47289	89.74933	-0.707224	0.4810
R-squared	0.342573	Mean dependent var		-142.3769
Adjusted R-squared	0.329808	S.D. dependent var		34389.61
S.E. of regression	28153.15	Akaike info criterion		23.35660
Sum squared resid	8.16E+10	Schwarz criterion		23.43198
Log likelihood	-1234.900	Hannan-Quinn criter.		23.38715
F-statistic	26.83574	Durbin-Watson stat		1.924033
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 14 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
 ของตัวแปร GBDI แบบจำลอง None (At Level)

Null Hypothesis: GBDI has a unit root
 Exogenous: None
 Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.344697	0.0000
Test critical values:		
1% level	-2.586960	
5% level	-1.943882	
10% level	-1.614731	

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GBDI)
 Method: Least Squares
 Date: 04/30/11 Time: 09:45
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.679203	0.092475	-7.344697	0.0000

R-squared	0.339381	Mean dependent var	-142.3769
Adjusted R-squared	0.339381	S.D. dependent var	34389.61
S.E. of regression	27951.35	Akaike info criterion	23.32371
Sum squared resid	8.20E+10	Schwarz criterion	23.34883
Log likelihood	-1235.157	Hannan-Quinn criter.	23.33389
Durbin-Watson stat	1.925474		

ตารางภาคผนวกที่ 15 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GOIL แบบจำลอง Intercept (At Level)

Null Hypothesis: GOIL has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.379634	0.0006
Test critical values:		
1% level	-3.493747	
5% level	-2.889200	
10% level	-2.581596	

*MacKinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GOIL)
Method: Least Squares
Date: 04/30/11 Time: 09:46
Sample (adjusted): 4 108
Included observations: 105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.450378	0.102835	-4.379634	0.0000
D(GOIL(-1))	-0.191786	0.097268	-1.971737	0.0513
C	0.285347	0.532310	0.536055	0.5931

R-squared	0.304787	Mean dependent var	0.010381
Adjusted R-squared	0.291156	S.D. dependent var	6.435156
S.E. of regression	5.417943	Akaike info criterion	6.245465
Sum squared resid	2994.119	Schwarz criterion	6.321292
Log likelihood	-324.8869	Hannan-Quinn criter.	6.276192
F-statistic	22.35885	Durbin-Watson stat	1.938544
Prob(F-statistic)	0.000000		

ตารางภาคผนวกที่ 16 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GOIL แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GOIL has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
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Augmented Dickey-Fuller test statistic		-4.350640	0.0039
Test critical values:	1% level	-4.047795	
	5% level	-3.453179	
	10% level	-3.152153	

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GOIL)
 Method: Least Squares
 Date: 04/30/11 Time: 09:47
 Sample (adjusted): 4 108
 Included observations: 105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.450131	0.103463	-4.350640	0.0000
D(GOIL(-1))	-0.191932	0.097792	-1.962659	0.0524
C	0.237736	1.106264	0.214899	0.8303
@TREND(1)	0.000863	0.017551	0.049169	0.9609
R-squared	0.304804	Mean dependent var		0.010381
Adjusted R-squared	0.284155	S.D. dependent var		6.435156
S.E. of regression	5.444634	Akaike info criterion		6.264489
Sum squared resid	2994.048	Schwarz criterion		6.365592
Log likelihood	-324.8857	Hannan-Quinn criter.		6.305458
F-statistic	14.76093	Durbin-Watson stat		1.938746
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 17 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
 ของตัวแปร GOIL แบบจำลอง None (At Level)

Null Hypothesis: GOIL has a unit root
 Exogenous: None
 Lag Length: 1 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.361923	0.0000
Test critical values:		
	1% level	-2.587172
	5% level	-1.943912
	10% level	-1.614713

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GOIL)
 Method: Least Squares
 Date: 04/30/11 Time: 09:48
 Sample (adjusted): 4 108
 Included observations: 105 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.444003	0.101791	-4.361923	0.0000
D(GOIL(-1))	-0.194887	0.096759	-2.014156	0.0466

R-squared	0.302829	Mean dependent var	0.010381
Adjusted R-squared	0.296060	S.D. dependent var	6.435156
S.E. of regression	5.399168	Akaike info criterion	6.229231
Sum squared resid	3002.554	Schwarz criterion	6.279782
Log likelihood	-325.0346	Hannan-Quinn criter.	6.249715
Durbin-Watson stat	1.938700		

ตารางภาคผนวกที่ 18 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GECH แบบจำลอง Intercept (At Level)

Null Hypothesis: GECH has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.238796	0.0000
Test critical values:		
1% level	-3.494378	
5% level	-2.889474	
10% level	-2.581741	

*MacKinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GECH)
Method: Least Squares
Date: 04/30/11 Time: 09:51
Sample (adjusted): 5 108
Included observations: 104 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.697300	0.133103	-5.238796	0.0000
D(GECH(-1))	0.063999	0.118771	0.538841	0.5912
D(GECH(-2))	0.020484	0.101016	0.202781	0.8397
C	-0.088677	0.051836	-1.710723	0.0902

R-squared	0.326200	Mean dependent var	0.001933
Adjusted R-squared	0.305986	S.D. dependent var	0.598458
S.E. of regression	0.498561	Akaike info criterion	1.483519
Sum squared resid	24.85626	Schwarz criterion	1.585226
Log likelihood	-73.14298	Hannan-Quinn criter.	1.524724
F-statistic	16.13733	Durbin-Watson stat	1.971208
Prob(F-statistic)	0.000000		

ตารางภาคผนวกที่ 19 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GECH แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GECH has a unit root Exogenous: Constant, Linear Trend Lag Length: 2 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.215611	0.0002
Test critical values:				
	1% level		-4.048682	
	5% level		-3.453601	
	10% level		-3.152400	
*MacKinnon (1996) one-sided p-values. Augmented Dickey-Fuller Test Equation Dependent Variable: D(GECH) Method: Least Squares Date: 04/30/11 Time: 09:53 Sample (adjusted): 5 108 Included observations: 104 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.698399	0.133905	-5.215611	0.0000
D(GECH(-1))	0.064458	0.119381	0.539932	0.5905
D(GECH(-2))	0.020523	0.101510	0.202175	0.8402
C	-0.073143	0.104093	-0.702669	0.4839
@TREND(1)	-0.000282	0.001639	-0.172365	0.8635
R-squared	0.326402	Mean dependent var		0.001933
Adjusted R-squared	0.299186	S.D. dependent var		0.598458
S.E. of regression	0.500997	Akaike info criterion		1.502450
Sum squared resid	24.84880	Schwarz criterion		1.629584
Log likelihood	-73.12738	Hannan-Quinn criter.		1.553955
F-statistic	11.99299	Durbin-Watson stat		1.970561
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 20 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GECH แบบจำลอง None (At Level)

Null Hypothesis: GECH has a unit root Exogenous: None Lag Length: 2 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.905146	0.0000
Test critical values:				
	1% level		-2.587387	
	5% level		-1.943943	
	10% level		-1.614694	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GECH)
 Method: Least Squares
 Date: 04/30/11 Time: 09:53
 Sample (adjusted): 5 108
 Included observations: 104 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.621642	0.126733	-4.905146	0.0000
D(GECH(-1))	0.017070	0.116657	0.146323	0.8840
D(GECH(-2))	-0.007731	0.100607	-0.076840	0.9389
R-squared	0.306481	Mean dependent var		0.001933
Adjusted R-squared	0.292748	S.D. dependent var		0.598458
S.E. of regression	0.503293	Akaike info criterion		1.493134
Sum squared resid	25.58370	Schwarz criterion		1.569414
Log likelihood	-74.64296	Hannan-Quinn criter.		1.524037
Durbin-Watson stat	1.971679			

ตารางภาคผนวกที่ 21 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
 ของตัวแปร GRICE แบบจำลอง Intercept (At Level)

Null Hypothesis: GRICE has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.058644	0.0000
Test critical values:		
1% level	-3.493129	
5% level	-2.888932	
10% level	-2.581453	

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GRICE)
 Method: Least Squares
 Date: 04/30/11 Time: 09:56
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.886406	0.097852	-9.058644	0.0000
C	70567210	1.48E+08	0.476686	0.6346
R-squared	0.441038	Mean dependent var		31955188
Adjusted R-squared	0.435663	S.D. dependent var		2.03E+09
S.E. of regression	1.52E+09	Akaike info criterion		45.14512
Sum squared resid	2.41E+20	Schwarz criterion		45.19537
Log likelihood	-2390.691	Hannan-Quinn criter.		45.16549
F-statistic	82.05903	Durbin-Watson stat		1.955891
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 22 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GRICE แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRICE has a unit root Exogenous: Constant, Linear Trend Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-9.032131	0.0000
Test critical values:				
	1% level		-4.046925	
	5% level		-3.452764	
	10% level		-3.151911	
*MacKinnon (1996) one-sided p-values. Augmented Dickey-Fuller Test Equation Dependent Variable: D(GRICE) Method: Least Squares Date: 04/30/11 Time: 09:57 Sample (adjusted): 3 108 Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.888005	0.098316	-9.032131	0.0000
C	-40323210	3.04E+08	-0.132848	0.8946
@TREND(1)	2035964.	4859036.	0.419006	0.6761
R-squared	0.441989	Mean dependent var		31955188
Adjusted R-squared	0.431154	S.D. dependent var		2.03E+09
S.E. of regression	1.53E+09	Akaike info criterion		45.16229
Sum squared resid	2.41E+20	Schwarz criterion		45.23767
Log likelihood	-2390.601	Hannan-Quinn criter.		45.19284
F-statistic	40.79205	Durbin-Watson stat		1.956388
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 23 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
ของตัวแปร GRICE แบบจำลอง None (At Level)

Null Hypothesis: GRICE has a unit root Exogenous: None Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-9.082153	0.0000
Test critical values:				
	1% level		-2.586960	
	5% level		-1.943882	
	10% level		-1.614731	

*MacKinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GRICE)

Method: Least Squares
 Date: 04/30/11 Time: 09:58
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.885063	0.097451	-9.082153	0.0000
R-squared	0.439816	Mean dependent var		31955188
Adjusted R-squared	0.439816	S.D. dependent var		2.03E+09
S.E. of regression	1.52E+09	Akaike info criterion		45.12844
Sum squared resid	2.42E+20	Schwarz criterion		45.15356
Log likelihood	-2390.807	Hannan-Quinn criter.		45.13862
Durbin-Watson stat	1.953987			

ตารางภาคผนวกที่ 24 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test
 ของตัวแปร GRUBBER แบบจำลอง Intercept (At Level)

Null Hypothesis: GRUBBER has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-10.01469	0.0000
Test critical values:		
1% level	-3.493129	
5% level	-2.888932	
10% level	-2.581453	

*MacKinnon (1996) one-sided p-values.
 Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GRUBBER)
 Method: Least Squares
 Date: 04/30/11 Time: 09:59
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.996770	0.099531	-10.01469	0.0000
C	2.11E+08	2.22E+08	0.953693	0.3425
R-squared	0.490930	Mean dependent var		45382075
Adjusted R-squared	0.486035	S.D. dependent var		3.17E+09
S.E. of regression	2.27E+09	Akaike info criterion		45.94687
Sum squared resid	5.38E+20	Schwarz criterion		45.99713
Log likelihood	-2433.184	Hannan-Quinn criter.		45.96724
F-statistic	100.2940	Durbin-Watson stat		1.967227
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 25 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test

ของตัวแปร GRUBBER แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRUBBER has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-9.969748	0.0000
Test critical values:	1% level		-4.046925	
	5% level		-3.452764	
	10% level		-3.151911	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GRUBBER)				
Method: Least Squares				
Date: 04/30/11 Time: 09:59				
Sample (adjusted): 3 108				
Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.996795	0.099982	-9.969748	0.0000
C	1.12E+08	4.54E+08	0.246102	0.8061
@TREND(1)	1828728.	7253660.	0.252111	0.8015
R-squared	0.491244	Mean dependent var		45382075
Adjusted R-squared	0.481365	S.D. dependent var		3.17E+09
S.E. of regression	2.29E+09	Akaike info criterion		45.96512
Sum squared resid	5.38E+20	Schwarz criterion		46.04051
Log likelihood	-2433.152	Hannan-Quinn criter.		45.99568
F-statistic	49.72723	Durbin-Watson stat		1.968372
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 26 ผลการทดสอบ Unit root ด้วยวิธี Augmented Dickey – Fuller test

ของตัวแปร GRUBBER แบบจำลอง None (At Level)

Null Hypothesis: GRUBBER has a unit root				
Exogenous: None				
Lag Length: 0 (Automatic based on Modified SIC, MAXLAG=12)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-9.975588	0.0000
Test critical values:	1% level		-2.586960	
	5% level		-1.943882	
	10% level		-1.614731	

*MacKinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GRUBBER)
 Method: Least Squares
 Date: 04/30/11 Time: 10:00
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.989672	0.099209	-9.975588	0.0000
R-squared	0.486478	Mean dependent var		45382075
Adjusted R-squared	0.486478	S.D. dependent var		3.17E+09
S.E. of regression	2.27E+09	Akaike info criterion		45.93671
Sum squared resid	5.43E+20	Schwarz criterion		45.96184
Log likelihood	-2433.646	Hannan-Quinn criter.		45.94690
Durbin-Watson stat	1.962981			

ตารางภาคผนวกที่ 27 ผลการทดสอบ Unit root ด้วยวิธีPhillips Perron test
 ของตัวแปร GBDI แบบจำลอง Intercept (At Level)

Null Hypothesis: GBDI has a unit root
 Exogenous: Constant
 Bandwidth: 15 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-6.891471	0.0000
Test critical values:		
1% level	-3.493129	
5% level	-2.888932	
10% level	-2.581453	

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

Residual variance (no correction) 7.74E+08
 HAC corrected variance (Bartlett kernel) 4.12E+08

Phillips-Perron Test Equation
 Dependent Variable: D(GBDI)
 Method: Least Squares
 Date: 04/30/11 Time: 10:14
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.679204	0.092921	-7.309453	0.0000
C	6.897679	2727.973	0.002528	0.9980
R-squared	0.339381	Mean dependent var		-142.3769
Adjusted R-squared	0.333029	S.D. dependent var		34389.61
S.E. of regression	28085.41	Akaike info criterion		23.34258
Sum squared resid	8.20E+10	Schwarz criterion		23.39283
Log likelihood	-1235.157	Hannan-Quinn criter.		23.36294
F-statistic	53.42810	Durbin-Watson stat		1.925471
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 28 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GBDI แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GBDI has a unit root Exogenous: Constant, Linear Trend Bandwidth: 17 (Newey-West using Bartlett kernel)				
		Adj. t-Stat	Prob.*	
Phillips-Perron test statistic		-6.929676	0.0000	
Test critical values:		1% level	-4.046925	
		5% level	-3.452764	
		10% level	-3.151911	
*MacKinnon (1996) one-sided p-values.				
Residual variance (no correction)			7.70E+08	
HAC corrected variance (Bartlett kernel)			3.24E+08	
Phillips-Perron Test Equation Dependent Variable: D(GBDI) Method: Least Squares Date: 04/30/11 Time: 10:15 Sample (adjusted): 3 108 Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.685303	0.093544	-7.326012	0.0000
C	3467.511	5605.489	0.618592	0.5376
@TREND(1)	-63.47289	89.74933	-0.707224	0.4810
R-squared	0.342573	Mean dependent var	-142.3769	
Adjusted R-squared	0.329808	S.D. dependent var	34389.61	
S.E. of regression	28153.15	Akaike info criterion	23.35660	
Sum squared resid	8.16E+10	Schwarz criterion	23.43198	
Log likelihood	-1234.900	Hannan-Quinn criter.	23.38715	
F-statistic	26.83574	Durbin-Watson stat	1.924033	
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 29 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GBDI แบบจำลอง None (At Level)

Null Hypothesis: GBDI has a unit root Exogenous: None Bandwidth: 15 (Newey-West using Bartlett kernel)				
		Adj. t-Stat	Prob.*	
Phillips-Perron test statistic		-6.939869	0.0000	
Test critical values:		1% level	-2.586960	
		5% level	-1.943882	
		10% level	-1.614731	

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

Residual variance (no correction) 7.74E+08
HAC corrected variance (Bartlett kernel) 4.12E+08

Phillips-Perron Test Equation
Dependent Variable: D(GBDI)
Method: Least Squares
Date: 04/30/11 Time: 10:15
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GBDI(-1)	-0.679203	0.092475	-7.344697	0.0000
R-squared	0.339381	Mean dependent var		-142.3769
Adjusted R-squared	0.339381	S.D. dependent var		34389.61
S.E. of regression	27951.35	Akaike info criterion		23.32371
Sum squared resid	8.20E+10	Schwarz criterion		23.34883
Log likelihood	-1235.157	Hannan-Quinn criter.		23.33389
Durbin-Watson stat	1.925474			

ตารางภาคผนวกที่ 30 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test
ของตัวแปร GOILแบบจำลอง Intercept (At Level)

Null Hypothesis: GOIL has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-6.375478	0.0000
Test critical values:		
1% level	-3.493129	
5% level	-2.888932	
10% level	-2.581453	

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

Residual variance (no correction) 29.40799
HAC corrected variance (Bartlett kernel) 30.51623

Phillips-Perron Test Equation
Dependent Variable: D(GOIL)
Method: Least Squares
Date: 04/30/11 Time: 10:19
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.557322	0.088183	-6.320038	0.0000
C	0.376033	0.534464	0.703571	0.4833
R-squared	0.277491	Mean dependent var		0.036698
Adjusted R-squared	0.270544	S.D. dependent var		6.410168
S.E. of regression	5.474809	Akaike info criterion		6.256879

Sum squared resid	3117.247	Schwarz criterion	6.307133
Log likelihood	-329.6146	Hannan-Quinn criter.	6.277247
F-statistic	39.94287	Durbin-Watson stat	2.162820
Prob(F-statistic)	0.000000		

ตารางภาคผนวกที่ 31 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GOIL แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GOIL has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-6.345818	0.0000
Test critical values:		
1% level	-4.046925	
5% level	-3.452764	
10% level	-3.151911	

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

Residual variance (no correction)	29.40505
HAC corrected variance (Bartlett kernel)	30.52475

Phillips-Perron Test Equation
Dependent Variable: D(GOIL)
Method: Least Squares
Date: 04/30/11 Time: 10:20
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.557671	0.088673	-6.289104	0.0000
C	0.473032	1.095197	0.431915	0.6667
@TREND(1)	-0.001776	0.017475	-0.101623	0.9193

R-squared	0.277564	Mean dependent var	0.036698
Adjusted R-squared	0.263536	S.D. dependent var	6.410168
S.E. of regression	5.501046	Akaike info criterion	6.275647
Sum squared resid	3116.935	Schwarz criterion	6.351027
Log likelihood	-329.6093	Hannan-Quinn criter.	6.306199
F-statistic	19.78655	Durbin-Watson stat	2.162207
Prob(F-statistic)	0.000000		

ตารางภาคผนวกที่ 32 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GOIL แบบจำลอง None (At Level)

Null Hypothesis: GOIL has a unit root
Exogenous: None
Bandwidth: 2 (Newey-West using Bartlett kernel)

Adj. t-Stat Prob.*

Phillips-Perron test statistic		-6.346915	0.0000
Test critical values:	1% level	-2.586960	
	5% level	-1.943882	
	10% level	-1.614731	

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

Residual variance (no correction)	29.54797
HAC corrected variance (Bartlett kernel)	30.56530

Phillips-Perron Test Equation
 Dependent Variable: D(GOIL)
 Method: Least Squares
 Date: 04/30/11 Time: 10:20
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOIL(-1)	-0.551089	0.087526	-6.296291	0.0000
R-squared	0.274052	Mean dependent var		0.036698
Adjusted R-squared	0.274052	S.D. dependent var		6.410168
S.E. of regression	5.461628	Akaike info criterion		6.242760
Sum squared resid	3132.085	Schwarz criterion		6.267887
Log likelihood	-329.8663	Hannan-Quinn criter.		6.252944
Durbin-Watson stat	2.167370			

ตารางภาคผนวกที่ 33 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test
 ของตัวแปร GECH แบบจำลอง Intercept (At Level)

Null Hypothesis: GECH has a unit root
 Exogenous: Constant
 Bandwidth: 0 (Newey-West using Bartlett kernel)

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.076881	0.0000
Test critical values:	1% level	-3.493129	
	5% level	-2.888932	
	10% level	-2.581453	

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

Residual variance (no correction)	0.236599
HAC corrected variance (Bartlett kernel)	0.236599

Phillips-Perron Test Equation
 Dependent Variable: D(GECH)
 Method: Least Squares
 Date: 04/30/11 Time: 10:21
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.652298	0.092173	-7.076881	0.0000
C	-0.082904	0.049255	-1.683161	0.0953
R-squared	0.325036	Mean dependent var		0.004082
Adjusted R-squared	0.318546	S.D. dependent var		0.594873
S.E. of regression	0.491069	Akaike info criterion		1.434223
Sum squared resid	25.07945	Schwarz criterion		1.484476
Log likelihood	-74.01380	Hannan-Quinn criter.		1.454591
F-statistic	50.08225	Durbin-Watson stat		1.958592
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 34 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GECH แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GECH has a unit root			
Exogenous: Constant, Linear Trend			
Bandwidth: 0 (Newey-West using Bartlett kernel)			
		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-7.044458	0.0000
Test critical values:	1% level	-4.046925	
	5% level	-3.452764	
	10% level	-3.151911	
*MacKinnon (1996) one-sided p-values.			
Residual variance (no correction)			0.236546
HAC corrected variance (Bartlett kernel)			0.236546

Phillips-Perron Test Equation
 Dependent Variable: D(GECH)
 Method: Least Squares
 Date: 04/30/11 Time: 10:21
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.652796	0.092668	-7.044458	0.0000
C	-0.070091	0.098332	-0.712796	0.4776
@TREND(1)	-0.000236	0.001567	-0.150797	0.8804
R-squared	0.325185	Mean dependent var		0.004082
Adjusted R-squared	0.312082	S.D. dependent var		0.594873
S.E. of regression	0.493392	Akaike info criterion		1.452870
Sum squared resid	25.07392	Schwarz criterion		1.528250
Log likelihood	-74.00210	Hannan-Quinn criter.		1.483422
F-statistic	24.81719	Durbin-Watson stat		1.958096
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 35 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GECH แบบจำลอง None (At Level)

Null Hypothesis: GECH has a unit root				
Exogenous: None				
Bandwidth: 2 (Newey-West using Bartlett kernel)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-6.807164	0.0000
Test critical values:				
	1% level		-2.586960	
	5% level		-1.943882	
	10% level		-1.614731	
*MacKinnon (1996) one-sided p-values.				
Residual variance (no correction)				0.243044
HAC corrected variance (Bartlett kernel)				0.241603
Phillips-Perron Test Equation				
Dependent Variable: D(GECH)				
Method: Least Squares				
Date: 04/30/11 Time: 10:22				
Sample (adjusted): 3 108				
Included observations: 106 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GECH(-1)	-0.613582	0.090033	-6.815110	0.0000
R-squared	0.306649	Mean dependent var		0.004082
Adjusted R-squared	0.306649	S.D. dependent var		0.594873
S.E. of regression	0.495337	Akaike info criterion		1.442231
Sum squared resid	25.76263	Schwarz criterion		1.467358
Log likelihood	-75.43824	Hannan-Quinn criter.		1.452415
Durbin-Watson stat	1.980106			

ตารางภาคผนวกที่ 36 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GRICE แบบจำลอง Intercept (At Level)

Null Hypothesis: GRICE has a unit root				
Exogenous: Constant				
Bandwidth: 5 (Newey-West using Bartlett kernel)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-8.976778	0.0000
Test critical values:				
	1% level		-3.493129	
	5% level		-2.888932	
	10% level		-2.581453	
*MacKinnon (1996) one-sided p-values.				

Residual variance (no correction)	2.28E+18
HAC corrected variance (Bartlett kernel)	1.73E+18

Phillips-Perron Test Equation
 Dependent Variable: D(GRICE)
 Method: Least Squares
 Date: 04/30/11 Time: 10:22
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.886406	0.097852	-9.058644	0.0000
C	70567210	1.48E+08	0.476686	0.6346
R-squared	0.441038	Mean dependent var		31955188
Adjusted R-squared	0.435663	S.D. dependent var		2.03E+09
S.E. of regression	1.52E+09	Akaike info criterion		45.14512
Sum squared resid	2.41E+20	Schwarz criterion		45.19537
Log likelihood	-2390.691	Hannan-Quinn criter.		45.16549
F-statistic	82.05903	Durbin-Watson stat		1.955891
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 37 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GRICE แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRICE has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 5 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-8.946490	0.0000
Test critical values:		
1% level	-4.046925	
5% level	-3.452764	
10% level	-3.151911	

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

Residual variance (no correction)	2.27E+18
HAC corrected variance (Bartlett kernel)	1.72E+18

Phillips-Perron Test Equation
 Dependent Variable: D(GRICE)
 Method: Least Squares
 Date: 04/30/11 Time: 10:23
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.888005	0.098316	-9.032131	0.0000
C	-40323210	3.04E+08	-0.132848	0.8946
@TREND(1)	2035964.	4859036.	0.419006	0.6761

R-squared	0.441989	Mean dependent var	31955188
Adjusted R-squared	0.431154	S.D. dependent var	2.03E+09
S.E. of regression	1.53E+09	Akaike info criterion	45.16229
Sum squared resid	2.41E+20	Schwarz criterion	45.23767
Log likelihood	-2390.601	Hannan-Quinn criter.	45.19284
F-statistic	40.79205	Durbin-Watson stat	1.956388
Prob(F-statistic)	0.000000		

ตารางภาคผนวกที่ 38 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test
ของตัวแปร GRICE แบบจำลอง None (At Level)

Null Hypothesis: GRICE has a unit root
Exogenous: None
Bandwidth: 5 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-9.002692	0.0000
Test critical values:		
1% level	-2.586960	
5% level	-1.943882	
10% level	-1.614731	

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

Residual variance (no correction)	2.28E+18
HAC corrected variance (Bartlett kernel)	1.75E+18

Phillips-Perron Test Equation
Dependent Variable: D(GRICE)
Method: Least Squares
Date: 04/30/11 Time: 10:24
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRICE(-1)	-0.885063	0.097451	-9.082153	0.0000

R-squared	0.439816	Mean dependent var	31955188
Adjusted R-squared	0.439816	S.D. dependent var	2.03E+09
S.E. of regression	1.52E+09	Akaike info criterion	45.12844
Sum squared resid	2.42E+20	Schwarz criterion	45.15356
Log likelihood	-2390.807	Hannan-Quinn criter.	45.13862
Durbin-Watson stat	1.953987		

ตารางภาคผนวกที่ 39 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GRUBBER แบบจำลอง Intercept (At Level)

Null Hypothesis: GRUBBER has a unit root
Exogenous: Constant
Bandwidth: 18 (Newey-West using Bartlett kernel)

Adj. t-Stat Prob.*

Phillips-Perron test statistic		-10.87223	0.0000
Test critical values:	1% level	-3.493129	
	5% level	-2.888932	
	10% level	-2.581453	

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

Residual variance (no correction)	5.08E+18
HAC corrected variance (Bartlett kernel)	2.04E+18

Phillips-Perron Test Equation
 Dependent Variable: D(GRUBBER)
 Method: Least Squares
 Date: 04/30/11 Time: 10:25
 Sample (adjusted): 3 108
 Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.996770	0.099531	-10.01469	0.0000
C	2.11E+08	2.22E+08	0.953693	0.3425
R-squared	0.490930	Mean dependent var		45382075
Adjusted R-squared	0.486035	S.D. dependent var		3.17E+09
S.E. of regression	2.27E+09	Akaike info criterion		45.94687
Sum squared resid	5.38E+20	Schwarz criterion		45.99713
Log likelihood	-2433.184	Hannan-Quinn criter.		45.96724
F-statistic	100.2940	Durbin-Watson stat		1.967227
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 40 ผลการทดสอบ Unit root ด้วยวิธี Phillips Perron test

ของตัวแปร GRUBBER แบบจำลอง Intercept and trend (At Level)

Null Hypothesis: GRUBBER has a unit root
 Exogenous: Constant, Linear Trend
 Bandwidth: 17 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-10.74592	0.0000
Test critical values:	1% level	-4.046925
	5% level	-3.452764
	10% level	-3.151911

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

Residual variance (no correction)	5.07E+18
HAC corrected variance (Bartlett kernel)	2.09E+18

Phillips-Perron Test Equation
 Dependent Variable: D(GRUBBER)
 Method: Least Squares
 Date: 04/30/11 Time: 10:25

Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.996795	0.099982	-9.969748	0.0000
C	1.12E+08	4.54E+08	0.246102	0.8061
@TREND(1)	1828728.	7253660.	0.252111	0.8015
R-squared	0.491244	Mean dependent var		45382075
Adjusted R-squared	0.481365	S.D. dependent var		3.17E+09
S.E. of regression	2.29E+09	Akaike info criterion		45.96512
Sum squared resid	5.38E+20	Schwarz criterion		46.04051
Log likelihood	-2433.152	Hannan-Quinn criter.		45.99568
F-statistic	49.72723	Durbin-Watson stat		1.968372
Prob(F-statistic)	0.000000			

ตารางภาคผนวกที่ 41 ผลการทดสอบ Unit root ด้วยวิธีPhillips Perron test
ของตัวแปร GRUBBER แบบจำลอง None (At Level)

Null Hypothesis: GRUBBER has a unit root
Exogenous: None
Bandwidth: 15 (Newey-West using Bartlett kernel)

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-10.40044	0.0000
Test critical values:		
1% level	-2.586960	
5% level	-1.943882	
10% level	-1.614731	

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

Residual variance (no correction) 5.12E+18
HAC corrected variance (Bartlett kernel) 2.57E+18

Phillips-Perron Test Equation
Dependent Variable: D(GRUBBER)
Method: Least Squares
Date: 04/30/11 Time: 10:26
Sample (adjusted): 3 108
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRUBBER(-1)	-0.989672	0.099209	-9.975588	0.0000
R-squared	0.486478	Mean dependent var		45382075
Adjusted R-squared	0.486478	S.D. dependent var		3.17E+09
S.E. of regression	2.27E+09	Akaike info criterion		45.93671
Sum squared resid	5.43E+20	Schwarz criterion		45.96184
Log likelihood	-2433.646	Hannan-Quinn criter.		45.94690
Durbin-Watson stat	1.962981			

ตารางภาคผนวกที่ 42 Determining Lag Length (Rice)

VAR Lag Order Selection Criteria

Endogenous variables: GBDI GECH GOIL GRICE

Exogenous variables: C

Date: 04/30/11 Time: 13:19

Sample: 1 108

Included observations: 99

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3765.889	NA	1.40e+28	76.15938	76.26423*	76.20180
1	-3734.221	60.13747	1.02e+28*	75.84285*	76.36712	76.05497*
2	-3721.677	22.80756	1.10e+28	75.91267	76.85635	76.29448
3	-3706.339	26.64701	1.11e+28	75.92605	77.28914	76.47756
4	-3696.108	16.94893	1.26e+28	76.04259	77.82510	76.76379
5	-3675.534	32.42000*	1.16e+28	75.95018	78.15210	76.84108
6	-3659.335	24.21631	1.18e+28	75.94616	78.56750	77.00676
7	-3645.640	19.36758	1.27e+28	75.99272	79.03346	77.22301
8	-3635.484	13.54088	1.48e+28	76.11078	79.57094	77.51077

* 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

ตารางภาคผนวกที่ 43 Determining Lag Length (Rubber)

VAR Lag Order Selection Criteria

Endogenous variables: GBDI GECH GOIL GRUBBER

Exogenous variables: C

Date: 04/30/11 Time: 13:38

Sample: 1 108

Included observations: 99

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3816.673	NA	3.90e+28	77.18530	77.29016*	77.22773
1	-3785.336	59.50720	2.86e+28	76.87548	77.39975	77.08760*
2	-3769.010	29.68486	2.85e+28*	76.86888*	77.81256	77.25070
3	-3760.658	14.50966	3.34e+28	77.02340	78.38649	77.57491
4	-3748.740	19.74317	3.65e+28	77.10586	78.88836	77.82706
5	-3736.321	19.56939	3.98e+28	77.17820	79.38012	78.06910
6	-3709.159	40.60589*	3.23e+28	76.95271	79.57404	78.01330
7	-3699.077	14.25685	3.74e+28	77.07227	80.11301	78.30256
8	-3683.571	20.67501	3.91e+28	77.08224	80.54240	78.48223

* 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

ตารางภาคผนวกที่ 44 Cointegration Rank Test (Trace) of GRICE

Date: 04/30/11 Time: 13:50

Sample (adjusted): 4 108

Included observations: 105 after adjustments

Trend assumption: Linear deterministic trend

Series: GBDI GECH GOIL GRICE

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 *	0.523305	182.3910	47.85613	0.0000
At most 1 *	0.387101	104.5988	29.79707	0.0000
At most 2 *	0.264961	53.19554	15.49471	0.0000
At most 3 *	0.180280	20.87323	3.841466	0.0000

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 *	0.523305	77.79225	27.58434	0.0000
At most 1 *	0.387101	51.40322	21.13162	0.0000
At most 2 *	0.264961	32.32231	14.26460	0.0000
At most 3 *	0.180280	20.87323	3.841466	0.0000

Max-eigenvalue 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 Cointegrating Coefficients (normalized by b'S11*b=l):

GBDI	GECH	GOIL	GRICE
-2.60E-05	-0.276440	-0.088342	1.13E-09
-4.60E-05	-0.425899	0.149757	-2.98E-10
-4.03E-06	-2.501709	-0.061042	2.74E-10
-1.05E-06	-0.012318	-0.196584	1.82E-11

Unrestricted Adjustment Coefficients (alpha):

	GBDI	GECH	GOIL	GRICE
D(GBDI)	6476.904	16141.50	116.8724	7467.445
D(GECH)	-0.099509	0.038684	0.266086	-0.074582
D(GOIL)	0.155731	-1.439346	0.571877	2.101947
D(GRICE)	-1.15E+09	1.84E+08	13355236	3.58E+08

1 Cointegrating Equation(s): Log likelihood -3997.451

Normalized cointegrating coefficients (standard error in parentheses)

GBDI	GECH	GOIL	GRICE
1.000000	10638.04 (9066.31)	3399.584 (951.953)	-4.37E-05 (4.3E-06)

Adjustment coefficients (standard error in parentheses)

D(GBDI)	-0.168309 (0.08344)
D(GECH)	2.59E-06 (1.5E-06)
D(GOIL)	-4.05E-06 (1.5E-05)
D(GRICE)	29885.03 (3696.90)

2 Cointegrating Equation(s): Log likelihood -3971.749

Normalized cointegrating coefficients (standard error in parentheses)

GBDI	GECH	GOIL	GRICE
1.000000	0.000000	-48281.79 (8160.99)	0.000346 (3.7E-05)
0.000000	1.000000	4.858166 (0.83453)	-3.66E-08 (3.8E-09)

Adjustment coefficients (standard error in parentheses)

D(GBDI)	-0.910111 (0.14629)	-8665.130 (1406.92)
D(GECH)	8.08E-07 (3.0E-06)	0.011033 (0.02839)
D(GOIL)	6.21E-05 (2.9E-05)	0.569966 (0.27502)
D(GRICE)	21421.42 (7446.97)	2.39E+08 (7.2E+07)

3 Cointegrating Equation(s): Log likelihood -3955.588

Normalized cointegrating coefficients (standard error in parentheses)

GBDI	GECH	GOIL	GRICE
1.000000	0.000000	0.000000	-1.91E-05 (2.2E-06)
0.000000	1.000000	0.000000	1.05E-10 (6.3E-11)
0.000000	0.000000	1.000000	-7.55E-09 (6.2E-10)

Adjustment coefficients (standard error in parentheses)

D(GBDI)	-0.910581 (0.14671)	-8957.511 (7073.23)	1837.984 (510.602)
D(GECH)	-2.64E-07 (2.6E-06)	-0.654638 (0.12534)	-0.001658 (0.00905)
D(GOIL)	5.98E-05 (2.9E-05)	-0.860703 (1.37484)	-0.264218 (0.09925)
D(GRICE)	21367.62 (7468.28)	2.06E+08 (3.6E+08)	1.28E+08 (2.6E+07)

ตารางภาคผนวกที่ 45 Cointegration Rank Test (Trace) of GRUBBER

Date: 04/30/11 Time: 13:56

Sample (adjusted): 5 108

Included observations: 104 after adjustments

Trend assumption: Linear deterministic trend

Series: GBDI GECH GOIL GRUBBER
 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 *	0.400712	145.0851	47.85613	0.0000
At most 1 *	0.318727	91.83567	29.79707	0.0000
At most 2 *	0.264675	51.92122	15.49471	0.0000
At most 3 *	0.174528	19.94714	3.841466	0.0000

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 *	0.400712	53.24940	27.58434	0.0000
At most 1 *	0.318727	39.91446	21.13162	0.0001
At most 2 *	0.264675	31.97408	14.26460	0.0000
At most 3 *	0.174528	19.94714	3.841466	0.0000

Max-eigenvalue 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 Cointegrating Coefficients (normalized by b*S11*b=l):

GBDI	GECH	GOIL	GRUBBER
-2.12E-05	0.056261	-0.051293	8.86E-10
-4.73E-05	-1.836537	0.015022	-2.94E-10
4.07E-05	-1.445845	-0.241349	3.86E-10
1.04E-05	1.707125	-0.172602	-3.83E-11

Unrestricted Adjustment Coefficients (alpha):

	GBDI	GECH	GOIL	GRUBBER
D(GBDI)	6283.575	13616.82	-4868.458	4907.108
D(GECH)	-0.047945	0.129435	0.096511	-0.188699
D(GOIL)	-1.257006	1.015308	1.722303	1.434076
D(GRUBBER)	-1.48E+09	6346694.	-5.10E+08	61238248

1 Cointegrating Equation(s): Log likelihood -3996.080

Normalized cointegrating coefficients (standard error in parentheses)

GBDI	GECH	GOIL	GRUBBER
1.000000	-2652.132 (16750.1)	2417.943 (1485.79)	-4.18E-05 (5.9E-06)

Adjustment coefficients (standard error in parentheses)

D(GBDI)	-0.133296 (0.06447)
D(GECH)	1.02E-06 (1.2E-06)
D(GOIL)	2.67E-05 (1.2E-05)
D(GRUBBER)	31339.33 (4521.20)

2 Cointegrating Equation(s): Log likelihood -3976.123

Normalized cointegrating coefficients (standard error in parentheses)

	GBDI	GECH	GOIL	GRUBBER
	1.000000	0.000000	2243.139 (1365.42)	-3.87E-05 (5.6E-06)
	0.000000	1.000000	-0.065911 (0.03985)	1.16E-09 (1.6E-10)
Adjustment coefficients (standard error in parentheses)				
D(GBDI)	-0.776915 (0.13964)		-24654.27 (4952.42)	
D(GECH)	-5.10E-06 (2.8E-06)		-0.240409 (0.10001)	
D(GOIL)	-2.13E-05 (2.8E-05)		-1.935370 (0.99486)	
D(GRUBBER)		31039.35 (11041.9)	-94771967 (3.9E+08)	

3 Cointegrating Equation(s): Log likelihood -3960.136

Normalized cointegrating coefficients (standard error in parentheses)

	GBDI	GECH	GOIL	GRUBBER
	1.000000	0.000000	0.000000	-1.97E-05 (3.1E-06)
	0.000000	1.000000	0.000000	5.97E-10 (9.1E-11)
	0.000000	0.000000	1.000000	-8.49E-09 (1.0E-09)
Adjustment coefficients (standard error in parentheses)				
D(GBDI)	-0.975276 (0.17454)		-17615.23 (6191.53)	1057.246 (654.613)
D(GECH)	-1.17E-06 (3.5E-06)		-0.379949 (0.12511)	-0.018889 (0.01323)
D(GOIL)	4.88E-05 (3.4E-05)		-4.425554 (1.19586)	-0.335949 (0.12644)
D(GRUBBER)		10244.33 (13612.2)	6.43E+08 (4.8E+08)	1.99E+08 (5.1E+07)

ตารางภาคผนวกที่ 46 Estimation Vector Regression (VAR) of GRICE

Vector Autoregression Estimates

Date: 04/30/11 Time: 14:42

Sample (adjusted): 3 108

Included observations: 106 after adjustments

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

	GBDI	GECH	GOIL	GRICE
GBDI(-1)	0.223893 (0.10197) [2.19570]	-4.52E-07 (1.8E-06) [-0.24733]	5.71E-05 (1.9E-05) [3.02431]	16401.52 (5341.54) [3.07056]
GECH(-1)	-9719.027 (5422.24) [-1.79244]	0.352610 (0.09720) [3.62754]	-0.503975 (1.00409) [-0.50192]	3.78E+08 (2.8E+08) [1.33216]
GOIL(-1)	482.5724	0.005738	0.234900	32224138

	(532.458)	(0.00955)	(0.09860)	(2.8E+07)
	[0.90631]	[0.60116]	[2.38234]	[1.15531]
GRICE(-1)	1.55E-06	4.28E-13	8.25E-10	-0.049078
	(2.1E-06)	(3.7E-11)	(3.8E-10)	(0.10861)
	[0.74636]	[0.01152]	[2.14772]	[-0.45186]
C	-1629.106	-0.085663	0.386865	1.05E+08
	(2795.03)	(0.05011)	(0.51758)	(1.5E+08)
	[-0.58286]	[-1.70964]	[0.74745]	[0.71637]
R-squared	0.150267	0.124228	0.312010	0.128064
Adj. R-squared	0.116614	0.089544	0.284763	0.093532
Sum sq. resids	7.77E+10	24.96914	2664.299	2.13E+20
S.E. equation	27735.63	0.497211	5.136069	1.45E+09
F-statistic	4.465213	3.581701	11.45113	3.708545
Log likelihood	-1232.277	-73.78016	-321.2931	-2384.111
Akaike AIC	23.34484	1.486418	6.156474	45.07756
Schwarz SC	23.47048	1.612052	6.282108	45.20319
Mean dependent	77.40170	-0.129272	0.645566	75515395
S.D. dependent	29509.56	0.521089	6.073037	1.53E+09
Determinant resid covariance (dof adj.)		7.63E+27		
Determinant resid covariance		6.29E+27		
Log likelihood		-3994.117		
Akaike information criterion		75.73807		
Schwarz criterion		76.24060		

ตารางภาคผนวกที่ 47 Estimation Vector Regression (VAR) of GRUBBER

Vector Autoregression Estimates

Date: 04/30/11 Time: 14:45

Sample (adjusted): 4 108

Included observations: 105 after adjustments

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

	GBDI	GECH	GOIL	GRUBBER
GBDI(-1)	0.245541	-8.49E-07	5.02E-05	1157.848
	(0.10365)	(1.9E-06)	(1.9E-05)	(8012.06)
	[2.36899]	[-0.44132]	[2.59616]	[0.14451]
GBDI(-2)	-0.178951	-1.65E-07	8.27E-06	6541.956
	(0.10693)	(2.0E-06)	(2.0E-05)	(8265.58)
	[-1.67357]	[-0.08291]	[0.41489]	[0.79147]
GECH(-1)	-9559.746	0.361293	-0.481817	6.10E+08
	(5615.24)	(0.10424)	(1.04732)	(4.3E+08)
	[-1.70246]	[3.46600]	[-0.46005]	[1.40455]
GECH(-2)	2367.632	-0.044190	0.097805	1.29E+08
	(5741.72)	(0.10659)	(1.07091)	(4.4E+08)
	[0.41236]	[-0.41460]	[0.09133]	[0.29056]
GOIL(-1)	1277.402	0.006295	0.253177	59339044

	(548.723)	(0.01019)	(0.10234)	(4.2E+07)
	[2.32795]	[0.61801]	[2.47377]	[1.39896]
GOIL(-2)	-129.4595	0.003267	0.243362	1.21E+08
	(545.499)	(0.01013)	(0.10174)	(4.2E+07)
	[-0.23732]	[0.32260]	[2.39191]	[2.87147]
GRUBBER(-1)	-1.27E-06	-7.68E-12	-1.73E-10	-0.144960
	(1.3E-06)	(2.4E-11)	(2.4E-10)	(0.10116)
	[-0.97270]	[-0.31625]	[-0.70706]	[-1.43293]
GRUBBER(-2)	-2.41E-06	-1.93E-11	-6.44E-10	-0.168786
	(1.3E-06)	(2.4E-11)	(2.4E-10)	(0.09805)
	[-1.89912]	[-0.82169]	[-2.72193]	[-1.72147]
C	-968.3084	-0.085544	0.385274	2.46E+08
	(2824.88)	(0.05244)	(0.52688)	(2.2E+08)
	[-0.34278]	[-1.63129]	[0.73124]	[1.12527]
R-squared	0.217987	0.132956	0.356022	0.205650
Adj. R-squared	0.152819	0.060702	0.302358	0.139454
Sum sq. resids	7.15E+10	24.63965	2487.349	4.27E+20
S.E. equation	27291.04	0.506619	5.090175	2.11E+09
F-statistic	3.345010	1.840125	6.634187	3.106689
Log likelihood	-1216.787	-72.88438	-315.1517	-2398.610
Akaike AIC	23.34832	1.559702	6.174318	45.85924
Schwarz SC	23.57580	1.787185	6.401800	46.08672
Mean dependent	59.30752	-0.126381	0.615429	2.07E+08
S.D. dependent	29650.50	0.522733	6.094194	2.27E+09
Determinant resid covariance (dof adj.)		1.89E+28		
Determinant resid covariance		1.32E+28		
Log likelihood		-3995.273		
Akaike information criterion		76.78614		
Schwarz criterion		77.69607		

ตารางภาคผนวกที่ 48 การทดสอบความเสถียรของข้อมูล (GRICE)

Roots of Characteristic Polynomial
 Endogenous variables: GBDI GECH GOIL GRICE
 Exogenous variables: C
 Lag specification: 1 2
 Date: 04/30/11 Time: 15:01

Root	Modulus
-0.031551 - 0.538990i	0.539912
-0.031551 + 0.538990i	0.539912
0.480324 - 0.113795i	0.493620
0.480324 + 0.113795i	0.493620
-0.378035	0.378035
0.142799 - 0.318983i	0.349488
0.142799 + 0.318983i	0.349488
-0.093274	0.093274

No root lies outside the unit circle.

VAR satisfies the stability condition.

ตารางภาคผนวกที่ 49 การทดสอบความเสถียรของข้อมูล (GRUBBER)

Roots of Characteristic Polynomial

Endogenous variables: GBDI GECH GOIL GRUBBER

Exogenous variables: C

Lag specification: 1 2

Date: 04/30/11 Time: 15:03

Root	Modulus
0.457454 - 0.323053i	0.560024
0.457454 + 0.323053i	0.560024
-0.292879 - 0.288973i	0.411441
-0.292879 + 0.288973i	0.411441
0.012414 - 0.289969i	0.290235
0.012414 + 0.289969i	0.290235
0.180536 - 0.116793i	0.215021
0.180536 + 0.116793i	0.215021

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

ตารางภาคผนวกที่ 50 ผลการทดสอบ Impulse Response Function ของ GRICE

Response of GBDI:				
Period	GBDI	GECH	GOIL	GRICE
1	27755.34	0.000000	0.000000	0.000000
2	10230.96	-5136.747	5663.030	2528.023
3	85.95021	-2266.194	231.4864	2421.142
4	-560.0882	-541.2708	-252.8909	-397.7521
5	8.203060	-465.9047	-414.4487	-391.1910
6	-87.08516	-174.5900	-70.97039	150.3154
7	-117.5088	93.20997	-75.99175	117.1130
8	-29.86496	64.16749	-49.54535	-67.07969
9	-11.48673	-8.595790	-27.13760	-40.01076
10	-24.88092	-0.537325	-8.491001	12.43351
11	-15.49138	14.83915	-6.269510	5.491999
12	-2.272749	7.060172	-3.657021	-7.251447
13	-0.362883	-0.304474	-1.063937	-2.784398
14	-1.642863	0.302904	-0.082024	1.435151
15	-0.833345	1.220717	-0.177042	0.325580

Response of GECH:				
Period	GBDI	GECH	GOIL	GRICE
1	-0.080569	0.498456	0.000000	0.000000
2	-0.033104	0.180868	0.039435	-0.008509
3	-0.004739	0.045196	0.018176	-0.051664
4	0.003974	-0.004132	0.015756	-0.007422

5	0.002822	0.001422	0.012338	0.012086
6	0.006607	0.003428	0.006562	0.002131
7	0.006752	-0.001993	0.003649	-0.002172
8	0.003074	-0.003033	0.002243	0.000773
9	0.000913	-0.001026	0.001107	0.001406
10	0.000663	-0.000236	0.000398	0.000172
11	0.000515	-0.000374	0.000173	-0.000154
12	0.000178	-0.000278	0.000101	9.83E-05
13	2.57E-05	-6.32E-05	3.68E-05	0.000107
14	2.69E-05	-7.23E-06	2.01E-06	-3.79E-06
15	2.22E-05	-2.36E-05	-1.18E-06	-1.72E-05

Response of GOIL:

Period	GBDI	GECH	GOIL	GRICE
1	1.406360	-0.634922	4.918910	0.000000
2	2.018759	-0.325248	1.221779	1.090150
3	1.626619	-0.458324	1.401156	0.124434
4	0.908939	-0.570142	0.496523	0.171465
5	0.396529	-0.361059	0.331479	0.160238
6	0.183574	-0.163944	0.110558	0.098122
7	0.103853	-0.086131	0.055952	0.017746
8	0.050442	-0.053925	0.019322	0.011603
9	0.017311	-0.024881	0.009067	0.012206
10	0.005804	-0.008307	0.001408	0.004834
11	0.002795	-0.003800	-0.000233	-0.000289
12	0.000731	-0.002236	-0.000520	9.11E-05
13	-0.000348	-0.000614	-0.000381	0.000542
14	-0.000325	9.20E-05	-0.000347	5.80E-05
15	-0.000131	5.28E-05	-0.000216	-0.000173

Response of GRICE:

Period	GBDI	GECH	GOIL	GRICE
1	3.97E+08	72986759	5.32E+08	1.25E+09
2	4.06E+08	2.54E+08	1.81E+08	-1.03E+08
3	2.98E+08	-2.25E+08	68256384	-2.43E+08
4	36771678	-1.81E+08	57210003	91478704
5	-24973387	2377916.	16749084	89928906
6	18545840	16730854	-1971770.	-20859142
7	19896943	-17861912	470166.0	-19172294
8	-464858.4	-11001200	2472630.	9758817.
9	-3601685.	2666225.	-32273.22	5996959.
10	851568.7	1712493.	-912225.5	-2875873.
11	964767.5	-1346214.	-214941.5	-1469340.
12	-440102.6	-527450.2	73099.11	937011.1
13	-369801.6	427662.9	-73849.52	352893.6
14	70082.36	155133.8	-91593.98	-313246.0
15	52674.45	-107855.6	-13453.00	-96086.48

Cholesky Ordering: GBDI GECH GOIL GRICE

Response of GBDI:				
Period	GBDI	GECH	GOIL	GRUBBER
1	27291.04	0.000000	0.000000	0.000000
2	9493.883	-5411.111	5969.847	-2637.058
3	264.9743	-2045.130	1260.106	-5559.797
4	-613.5235	-877.0373	-429.3356	-1224.876
5	-894.2070	-375.6374	-1587.115	1193.842
6	-788.9045	182.0819	-773.2368	544.8286
7	-428.8374	275.6068	-279.0432	405.6686
8	-146.2189	191.6126	-75.48956	194.4526
9	6.116801	91.96369	55.85309	20.60878
10	49.97959	21.12292	63.88771	-23.21422
11	43.18952	-8.252875	41.88219	-34.85175
12	24.32471	-14.30067	19.55500	-23.66909
13	8.580354	-10.65194	3.773807	-9.965429
14	0.228281	-5.161549	-2.320978	-2.290756
15	-2.468008	-1.412710	-3.344852	1.242476

Response of GECH:				
Period	GBDI	GECH	GOIL	GRUBBER
1	-0.093165	0.497979	0.000000	0.000000
2	-0.047113	0.177044	0.029129	-0.015916
3	-0.006127	0.043998	0.022955	-0.043534
4	0.009048	0.000307	0.009198	-0.012041
5	0.003729	-0.005946	-0.002141	-0.001253
6	-0.000669	-0.002584	-0.001575	-0.001524
7	-0.001762	-0.000519	-0.001988	0.001269
8	-0.001402	0.000371	-0.001409	0.001186
9	-0.000698	0.000496	-0.000474	0.000651
10	-0.000214	0.000322	-7.96E-05	0.000313
11	2.41E-05	0.000147	9.95E-05	3.00E-05
12	9.15E-05	3.10E-05	0.000116	-5.45E-05
13	7.51E-05	-1.80E-05	7.07E-05	-5.94E-05
14	4.02E-05	-2.57E-05	3.09E-05	-4.00E-05
15	1.33E-05	-1.81E-05	5.30E-06	-1.64E-05

Response of GOIL:				
Period	GBDI	GECH	GOIL	GRUBBER
1	1.243950	-0.744953	4.879295	0.000000
2	1.771987	-0.387725	1.199674	-0.357526
3	1.611110	-0.486031	1.598921	-1.497320
4	0.800182	-0.566451	0.528041	-0.495471
5	0.232433	-0.329859	0.085446	-0.362198
6	-0.004293	-0.150977	-0.057352	-0.075596
7	-0.084062	-0.041519	-0.121683	0.062408
8	-0.075033	0.014380	-0.072367	0.052940
9	-0.041937	0.024504	-0.032259	0.040989
10	-0.015271	0.018237	-0.007940	0.018485
11	-0.000587	0.009105	0.004151	0.003508
12	0.004198	0.002489	0.005718	-0.001855
13	0.004013	-0.000523	0.004049	-0.003141
14	0.002370	-0.001270	0.001938	-0.002215
15	0.000903	-0.001001	0.000467	-0.001028

Response of GRUBBER:

Period	GBDI	GECH	GOIL	GRUBBER
1	-2.46E+08	-2.36E+08	2.07E+08	2.07E+09
2	84274927	2.94E+08	2.60E+08	-3.00E+08
3	4.34E+08	50028872	6.14E+08	-3.40E+08
4	2.86E+08	-1.21E+08	1.66E+08	-84437246
5	1.34E+08	-91940347	1.14E+08	-1.92E+08
6	41481568	-64215378	19831170	-48377462
7	-7376279.	-28660517	-27618319	-1605306.
8	-18258193	-4890560.	-20305469	7559095.
9	-14795929	3556310.	-14451402	13638758
10	-7902923.	5215134.	-6054372.	7434912.
11	-2463310.	3579028.	-730569.2	3062831.
12	171288.1	1609278.	929548.4	613904.6
13	938587.0	380097.3	1210812.	-576059.1
14	808099.7	-169299.0	790639.8	-640677.9
15	441607.9	-271951.2	336257.2	-421565.6

Cholesky Ordering: GBDI GECH GOIL GRUBBER

ตารางภาคผนวกที่ 52 ผลการทดสอบ Variance Decomposition ของ GRICE

Variance Decomposition of GRICE:

Period	S.E.	GRICE	GBDI	GECH	GOIL
1	1.42E+09	100.0000	0.000000	0.000000	0.000000
2	1.51E+09	88.53976	6.744120	2.844544	1.871576
3	1.58E+09	81.87190	10.95950	4.451142	2.717465
4	1.59E+09	80.81706	10.76479	5.738332	2.679812
5	1.60E+09	80.77512	10.82099	5.718269	2.685622
6	1.60E+09	80.74813	10.83750	5.728296	2.686077
7	1.60E+09	80.71954	10.85598	5.737077	2.687401
8	1.60E+09	80.71555	10.85540	5.741785	2.687259
9	1.60E+09	80.71454	10.85616	5.741879	2.687421
10	1.60E+09	80.71439	10.85621	5.741987	2.687411
11	1.60E+09	80.71429	10.85626	5.742039	2.687411
12	1.60E+09	80.71427	10.85627	5.742049	2.687413
13	1.60E+09	80.71425	10.85628	5.742055	2.687414
14	1.60E+09	80.71425	10.85628	5.742056	2.687414
15	1.60E+09	80.71425	10.85628	5.742056	2.687414

Variance Decomposition of GBDI:

Period	S.E.	GRICE	GBDI	GECH	GOIL
1	27755.34	7.831804	92.16820	0.000000	0.000000
2	30657.44	11.56018	83.46947	3.071081	1.899272
3	30837.27	11.90318	82.52851	3.634627	1.933679
4	30850.70	11.93456	82.47342	3.659392	1.932624
5	30859.49	11.95639	82.42920	3.677388	1.937014
6	30860.55	11.95613	82.42483	3.680547	1.938496
7	30861.23	11.95583	82.42314	3.681214	1.939817
8	30861.42	11.95640	82.42211	3.681659	1.939832
9	30861.46	11.95662	82.42189	3.681653	1.939836
10	30861.48	11.95661	82.42189	3.681650	1.939851
11	30861.49	11.95660	82.42187	3.681671	1.939857

12	30861.49	11.95661	82.42186	3.681676	1.939856
13	30861.49	11.95661	82.42186	3.681676	1.939856
14	30861.49	11.95661	82.42186	3.681676	1.939856
15	30861.49	11.95661	82.42186	3.681676	1.939856

Variance Decomposition of GECH:

Period	S.E.	GRICE	GBDI	GECH	GOIL
1	0.504925	0.003738	2.822049	97.17421	0.000000
2	0.538875	0.021638	2.939224	96.49844	0.540699
3	0.543554	0.504470	2.901343	95.60145	0.992738
4	0.543863	0.503918	2.903636	95.49844	1.094010
5	0.544146	0.591479	2.901668	95.39912	1.107737
6	0.544241	0.604946	2.909189	95.36936	1.116508
7	0.544303	0.605325	2.923554	95.34889	1.122229
8	0.544325	0.606949	2.925514	95.34435	1.123185
9	0.544330	0.608103	2.925520	95.34314	1.123240
10	0.544331	0.608178	2.925616	95.34294	1.123268
11	0.544331	0.608178	2.925703	95.34284	1.123282
12	0.544331	0.608186	2.925709	95.34282	1.123283
13	0.544331	0.608191	2.925708	95.34282	1.123283
14	0.544331	0.608191	2.925709	95.34282	1.123283
15	0.544331	0.608191	2.925709	95.34282	1.123283

Variance Decomposition of GOIL:

Period	S.E.	GRICE	GBDI	GECH	GOIL
1	5.155255	18.26927	2.545945	2.043612	77.14118
2	5.782646	26.10122	9.016064	2.112588	62.77013
3	6.186572	25.77490	12.87811	2.481093	58.86590
4	6.300860	25.64489	13.95882	3.263284	57.13300
5	6.334350	25.69381	14.04909	3.580055	56.67705
6	6.340853	25.71381	14.07000	3.645325	56.57086
7	6.342560	25.70930	14.08271	3.662636	56.54535
8	6.343030	25.70756	14.08547	3.669564	56.53741
9	6.343121	25.70760	14.08547	3.671093	56.53583
10	6.343131	25.70761	14.08548	3.671263	56.53565
11	6.343133	25.70760	14.08549	3.671297	56.53562
12	6.343133	25.70759	14.08549	3.671309	56.53561
13	6.343133	25.70759	14.08549	3.671310	56.53561
14	6.343133	25.70759	14.08549	3.671310	56.53561
15	6.343133	25.70759	14.08549	3.671310	56.53561

Cholesky Ordering: GRICE GBDI GECH GOIL

ตารางภาคผนวกที่ 53 ผลการทดสอบ Variance Decomposition ของ GRUBBER

Variance Decomposition of GRUBBER:					
Period	S.E.	GRUBBER	GBDI	GECH	GOIL
1	2.11E+09	100.0000	0.000000	0.000000	0.000000
2	2.17E+09	96.73634	0.049411	1.448734	1.765517
3	2.32E+09	86.47870	2.986175	1.271107	9.264018
4	2.35E+09	84.56499	4.311074	1.536068	9.587866
5	2.36E+09	84.01109	4.481480	1.738011	9.769422
6	2.37E+09	83.91573	4.498659	1.820403	9.765206
7	2.37E+09	83.89115	4.498332	1.834849	9.775671
8	2.37E+09	83.87994	4.503091	1.834898	9.782066
9	2.37E+09	83.87373	4.505761	1.835122	9.785391
10	2.37E+09	83.87189	4.506523	1.835694	9.785889
11	2.37E+09	83.87160	4.506582	1.835955	9.785858
12	2.37E+09	83.87155	4.506580	1.836004	9.785865
13	2.37E+09	83.87152	4.506591	1.836005	9.785888
14	2.37E+09	83.87150	4.506600	1.836006	9.785898
15	2.37E+09	83.87149	4.506602	1.836007	9.785900
16	2.37E+09	83.87149	4.506602	1.836008	9.785900
17	2.37E+09	83.87149	4.506602	1.836008	9.785900
18	2.37E+09	83.87149	4.506602	1.836008	9.785900
19	2.37E+09	83.87149	4.506602	1.836008	9.785900
20	2.37E+09	83.87149	4.506602	1.836008	9.785900

Variance Decomposition of GBDI:					
Period	S.E.	GRUBBER	GBDI	GECH	GOIL
1	27291.04	1.359797	98.64020	0.000000	0.000000
2	30113.26	1.809067	90.48356	3.465510	4.241861
3	30717.42	4.536136	86.97119	4.070515	4.422154
4	30763.46	4.644671	86.76958	4.166945	4.418802
5	30842.75	4.763071	86.38533	4.152487	4.699109
6	30867.87	4.784899	86.30102	4.151451	4.762634
7	30876.01	4.798343	86.27117	4.159756	4.770727
8	30877.65	4.801197	86.26365	4.164000	4.771153
9	30877.85	4.801159	86.26257	4.164880	4.771393
10	30877.97	4.801185	86.26212	4.164885	4.771811
11	30878.05	4.801284	86.26184	4.164878	4.772000
12	30878.08	4.801328	86.26173	4.164900	4.772041
13	30878.08	4.801336	86.26171	4.164913	4.772042
14	30878.08	4.801336	86.26171	4.164915	4.772042
15	30878.08	4.801336	86.26171	4.164916	4.772043
16	30878.08	4.801336	86.26170	4.164915	4.772044
17	30878.08	4.801336	86.26170	4.164916	4.772044
18	30878.08	4.801336	86.26170	4.164916	4.772044
19	30878.08	4.801336	86.26170	4.164916	4.772044
20	30878.08	4.801336	86.26170	4.164916	4.772044

Variance Decomposition of GECH:					
Period	S.E.	GRUBBER	GBDI	GECH	GOIL
1	0.506619	0.787572	3.825109	95.38732	0.000000
2	0.539749	0.946490	4.249560	94.48329	0.320664
3	0.543805	1.608639	4.230492	93.59549	0.565376

4	0.544092	1.655693	4.246066	93.49730	0.600945
5	0.544143	1.655876	4.249678	93.49225	0.602192
6	0.544154	1.656366	4.249736	93.49105	0.602845
7	0.544162	1.656900	4.250494	93.48828	0.604322
8	0.544167	1.657315	4.250966	93.48663	0.605091
9	0.544168	1.657436	4.251080	93.48630	0.605186
10	0.544169	1.657463	4.251087	93.48626	0.605189
11	0.544169	1.657463	4.251087	93.48626	0.605192
12	0.544169	1.657464	4.251089	93.48625	0.605197
13	0.544169	1.657465	4.251091	93.48625	0.605199
14	0.544169	1.657465	4.251091	93.48624	0.605200
15	0.544169	1.657465	4.251091	93.48624	0.605200
16	0.544169	1.657465	4.251091	93.48624	0.605200
17	0.544169	1.657465	4.251091	93.48624	0.605200
18	0.544169	1.657465	4.251091	93.48624	0.605200
19	0.544169	1.657465	4.251091	93.48624	0.605200
20	0.544169	1.657465	4.251091	93.48624	0.605200

Variance Decomposition of GOIL:

Period	S.E.	GRUBBER	GBDI	GECH	GOIL
1	5.090175	0.668721	6.536333	1.813863	90.98108
2	5.546819	1.074812	15.31735	2.079115	81.52872
3	6.196581	6.315130	17.76622	2.710093	73.20856
4	6.315306	6.621214	18.51910	3.549995	71.30969
5	6.339118	6.854896	18.47430	3.859419	70.81139
6	6.341627	6.859162	18.46002	3.919343	70.76148
7	6.343794	6.864598	18.46220	3.919816	70.75339
8	6.344887	6.868958	18.46781	3.919402	70.74383
9	6.345288	6.871914	18.46899	3.920938	70.73815
10	6.345364	6.872476	18.46899	3.921847	70.73668
11	6.345373	6.872477	18.46894	3.922060	70.73652
12	6.345378	6.872477	18.46895	3.922068	70.73650
13	6.345381	6.872494	18.46897	3.922065	70.73647
14	6.345382	6.872502	18.46897	3.922069	70.73646
15	6.345383	6.872504	18.46897	3.922072	70.73645
16	6.345383	6.872504	18.46897	3.922072	70.73645
17	6.345383	6.872504	18.46897	3.922073	70.73645
18	6.345383	6.872504	18.46897	3.922073	70.73645
19	6.345383	6.872504	18.46897	3.922073	70.73645
20	6.345383	6.872504	18.46897	3.922073	70.73645

Cholesky Ordering: GRUBBER GBDI GECH GOIL

ประวัติผู้เขียน

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ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
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