ภาคผนวก

ผลการคำนวณจากโปรแกรม Eviews 0.7

ผลการทดสอบพาแนลยูนิทรูท

ตาราง ก-1 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ Level โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (common unit root process)
Series: EXR
Date: 09/03/11 Time: 21:38
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	0.71984	0.7642

** Probabilities are computed assuming asympotic normality

Intermediate results on EXR

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00164	0.0002	0.0002	4	4	9.0	517
2	0.00017	0.0039	0.0050	4	4	6.0	517
3	-0.00295	2.E-05	2.E-05	4	4	9.0	517

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.00090	-0.608	1.000	-0.500	0.707	1551

Null Hypothesis: Unit root (common unit root process)
Series: OIL
Date: 09/03/11 Time: 21:39
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.16402	0.1222

** Probabilities are computed assuming asympotic normality

Intermediate results on OIL

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00475	2.1783	2.3538	4	4	5.0	517
2	-0.00291	1064.4	843.55	4	4	9.0	517
3	-0.00487	37.649	40.364	4	4	6.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00432	-2.276	1.000	-0.500	0.707		1551

Null Hypothesis: Unit root (common unit root process)
Series: SME
Date: 09/03/11 Time: 21:40
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.07873	0.1404

** Probabilities are computed assuming asympotic normality

Intermediate results on SME

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.02455	2170.4	2697.9	4	4	7.0	517
2	-0.00347	3.8154	4.0741	4	4	3.0	517
3	-0.02582	612.60	334.80	4	4	9.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00608	-2.540	1.003	-0.500	0.707		1551

Null Hypothesis: Unit root (common unit root process)
Series: STOCK
Date: 09/03/11 Time: 21:40
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	1.72470	0.9577

** Probabilities are computed assuming asympotic normality

Intermediate results on STOCK

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00023	1.9211	2.6913	4	4	6.0	517
2	-0.00101	375.87	370.34	4	4	6.0	517
3	-0.00047	3.6619	4.1067	4	4	6.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00044	-0.251	1.000	-0.500	0.707		1551

ตาราง ก-2 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ First Differential โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (common unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 12:30
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-13.8884	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(EXR)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-1.12857	0.0002	9.E-06	4	4	48.0	516
2	-0.86356	0.0039	0.0001	4	4	93.0	516
3	-1.18740	2.E-05	4.E-07	4	4	192.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.03618	-17.902	1.002	-0.500	0.707		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 12:31
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-12.9432	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(OIL)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.92377	2.1908	0.1733	4	4	24.0	516
2	-1.11192	1067.2	29.527	4	4	83.0	516
3	-0.91999	37.756	0.4604	4	4	225.0	516

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.98100	-17.302	1.001	-0.500	0.707		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(SME)
Date: 09/07/11 Time: 12:31
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-13.3435	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(SME)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.83554	2202.9	106.64	4	4	41.0	516
2	-0.94474	3.8258	0.0364	4	4	519.0	516
3	-1.35129	620.82	15.585	4	4	99.0	516

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.98382	-16.645	1.004	-0.500	0.707		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 12:31
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-14.2048	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(STOCK)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.79474	1.9246	0.1366	4	4	28.0	516
2	-1.04438	376.02	9.2903	4	4	101.0	516
3	-0.89597	3.6657	0.0236	4	4	519.0	516

	Coefficient	t-Stat	SE Reg	mu*	sig*	Obs
Pooled	-0.89952	-16.933	1.001	-0.500	0.707	1548

ตาราง ก-3 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ Level โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (common unit root process)
Series: EXR
Date: 09/03/11 Time: 21:45
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.35742	0.0873

** Probabilities are computed assuming asympotic normality

Intermediate results on EXR

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.05361	0.0002	0.0002	4	4	9.0	517
2	-0.01350	0.0039	0.0049	4	4	6.0	517
3	-0.02031	2.E-05	2.E-05	4	4	9.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.01943	-4.178	1.002	-0.500	0.500		1551

Null Hypothesis: Unit root (common unit root process)
Series: OIL
Date: 09/03/11 Time: 21:45
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-0.48159	0.3150

** Probabilities are computed assuming asympotic normality

Intermediate results on OIL

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00884	2.1754	2.2816	4	4	4.0	517
2	-0.02170	1054.5	842.84	4	4	9.0	517
3	-0.01981	37.329	40.365	4	4	6.0	517

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.01410	-3.404	1.001	-0.500	0.500		1551

Null Hypothesis: Unit root (common unit root process)
Series: SME
Date: 09/03/11 Time: 21:45
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	0.18766	0.5744

** Probabilities are computed assuming asympotic normality

Intermediate results on SME

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.02470	2170.1	2695.7	4	4	7.0	517
2	-0.02108	3.7842	4.0594	4	4	3.0	517
3	-0.05147	608.96	320.84	4	4	10.0	517

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.02601	-4.348	1.001	-0.500	0.500		1551

Null Hypothesis: Unit root (common unit root process)
Series: STOCK
Date: 09/03/11 Time: 21:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-0.20352	0.4194

** Probabilities are computed assuming asympotic normality

Intermediate results on STOCK

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.02427	1.8922	2.6779	4	4	6.0	517
2	-0.03744	368.69	367.74	4	4	6.0	517
3	-0.02944	3.5922	3.9532	4	4	5.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.02907	-4.982	1.000	-0.500	0.500		1551

ตาราง ก-4 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ First Differential โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (common unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 12:34
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-19.7228	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(EXR)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-1.13213	0.0002	9.E-06	4	4	48.0	516
2	-0.87226	0.0039	0.0001	4	4	93.0	516
3	-1.18801	2.E-05	4.E-07	4	4	193.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-1.04201	-17.939	1.002	-0.500	0.500		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 12:34
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-18.4261	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(OIL)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.93800	2.1833	0.1733	4	4	24.0	516
2	-1.11277	1067.1	29.478	4	4	83.0	516
3	-0.92037	37.753	0.4516	4	4	225.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.98643	-17.368	1.001	-0.500	0.500		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(SME)
Date: 09/07/11 Time: 12:35
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-19.0062	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(SME)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.83591	2202.8	106.64	4	4	41.0	516
2	-0.94775	3.8229	0.0346	4	4	519.0	516
3	-1.36241	619.73	15.466	4	4	99.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.98701	-16.676	1.004	-0.500	0.500		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 12:35
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-20.2188	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(STOCK)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.79842	1.9231	0.1365	4	4	28.0	516
2	-1.05064	375.59	9.2979	4	4	101.0	516
3	-0.91592	3.6532	0.0231	4	4	519.0	516

ตาราง ก-5 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ Level โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา(None)

Null Hypothesis: Unit root (common unit root process)
Series: EXR
Date: 09/04/11 Time: 00:21
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	3.38828	0.9996

** Probabilities are computed assuming asympotic normality

Intermediate results on EXR

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	0.00030	0.0002	0.0002	4	4	8.0	517
2	0.00018	0.0039	0.0054	4	4	7.0	517
3	0.00036	2.E-05	2.E-05	4	4	6.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	0.00024	3.388	1.000	0.000	1.000		1551

Null Hypothesis: Unit root (common unit root process)
Series: OIL
Date: 09/04/11 Time: 00:21
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-3.24675	0.0006

** Probabilities are computed assuming asympotic normality

Intermediate results on OIL

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00129	2.1865	2.5297	4	4	6.0	517
2	-0.00106	1064.9	909.99	4	4	8.0	517
3	-0.00097	37.710	41.408	4	4	6.0	517

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00116	-3.247	1.000	0.000	1.000		1551

Null Hypothesis: Unit root (common unit root process)
Series: SME
Date: 09/04/11 Time: 00:21
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-1.97780	0.0240

** Probabilities are computed assuming asympotic normality

Intermediate results on SME

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00015	2201.3	2699.1	4	4	7.0	517
2	-0.00089	3.8231	4.4129	4	4	5.0	517
3	0.00012	619.75	335.40	4	4	9.0	517

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00056	-1.978	1.001	0.000	1.000		1551

Null Hypothesis: Unit root (common unit root process)
Series: STOCK
Date: 09/04/11 Time: 00:21
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-3.05643	0.0011

** Probabilities are computed assuming asympotic normality

Intermediate results on STOCK

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.00058	1.9212	2.9759	4	4	8.0	517
2	-0.00136	375.88	392.96	4	4	4.0	517
3	-0.00045	3.6619	4.3238	4	4	7.0	517
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.00059	-3.056	1.000	0.000	1.000		1551

ตาราง ก-6 ผลการทดสอบ Panel Unit Root ด้วยวิธี LLC TEST ที่ระดับ First Differentail โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา(None)

Null Hypothesis: Unit root (common unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 12:37
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-17.4655	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(EXR)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-1.09951	0.0002	9.E-06	4	4	48.0	516
2	-0.82442	0.0039	0.0001	4	4	93.0	516
3	-1.12866	2.E-05	4.E-07	4	4	192.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.99455	-17.465	1.002	0.000	1.000		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 12:37
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-17.0096	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(OIL)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.87242	2.2116	0.1733	4	4	24.0	516
2	-1.09639	1070.5	29.451	4	4	83.0	516
3	-0.90411	37.861	0.4747	4	4	225.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.95181	-17.010	1.001	0.000	1.000		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(SME)
Date: 09/07/11 Time: 12:37
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-16.4538	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate results on D(SME)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.83528	2203.0	106.61	4	4	41.0	516
2	-0.89562	3.8609	0.0781	4	4	519.0	516
3	-1.34988	620.96	15.564	4	4	99.0	516
	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.96358	-16.454	1.004	0.000	1.000		1548

Null Hypothesis: Unit root (common unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 12:38
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-16.5439	0.0000

** Probabilities are computed assuming asymptotic normality

Intermediate results on D(STOCK)

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.74333	1.9454	0.1366	4	4	28.0	516
2	-1.01416	378.33	9.2783	4	4	101.0	516
3	-0.87876	3.6763	0.0377	4	4	519.0	516

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs

ตาราง ก-7 ผลการทดสอบ Panel Unit Root ด้วยวิธี Breitung ที่ระดับ Levelโดยกำหนดให้มีค่าคงที่และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (common unit root process)
Series: EXR
Date: 09/03/11 Time: 21:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-1.35734	0.0873

** Probabilities are computed assuming asympotic normality

Intermediate regression results on EXR

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	0.01387	4	4	517
2	0.06284	4	4	517
3	0.00451	4	4	517

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.00428	-1.357	0.003	1548

Null Hypothesis: Unit root (common unit root process)
Series: OIL
Date: 09/03/11 Time: 21:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-0.94809	0.1715

** Probabilities are computed assuming asympotic normality

Intermediate regression results on OIL

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	1.47998	4	4	517
2	32.6739	4	4	517
3	6.14925	4	4	517

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.00274	-0.948	0.003	1548

Null Hypothesis: Unit root (common unit root process)
Series: SME
Date: 09/03/11 Time: 21:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-0.95751	0.1692

** Probabilities are computed assuming asympotic normality

Intermediate regression results on SME

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	46.9656	4	4	517
2	1.95773	4	4	517
3	24.8952	4	4	517

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.00389	-0.958	0.004	1548

Null Hypothesis: Unit root (common unit root process)
Series: STOCK
Date: 09/03/11 Time: 21:48
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-1.62404	0.0522

** Probabilities are computed assuming asympotic normality

Intermediate regression results on STOCK

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	1.38691	4	4	517
2	19.3985	4	4	517
3	1.91250	4	4	517

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.00618	-1.624	0.004	1548

ตาราง ก-8 ผลการทดสอบ Panel Unit Root ด้วยวิธี Breitung ที่ระดับFirst Differentialโดย กำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (common unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 12:42
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1545
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-4.69012	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate regression results on D(EXR)

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	0.01535	4	4	516
2	0.06791	4	4	516
3	0.00500	4	4	516

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.09845	-4.690	0.021	1545

Null Hypothesis: Unit root (common unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 12:42
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1545
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-5.98213	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate regression results on D(OIL)

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	1.60812	4	4	516
2	36.2980	4	4	516
3	6.66782	4	4	516

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.16332	-5.982	0.027	1545

Null Hypothesis: Unit root (common unit root process)
Series: D(SME)
Date: 09/07/11 Time: 12:42
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1545
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-4.05117	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate regression results on D(SME)

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	50.6284	4	4	516
2	2.13477	4	4	516
3	27.4506	4	4	516

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.08913	-4.051	0.022	1545

Null Hypothesis: Unit root (common unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 12:43
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1545
Cross-sections included: 3

Method	Statistic	Prob.**
Breitung t-stat	-4.15934	0.0000

** Probabilities are computed assuming asymptotic normality

Intermediate regression results on D(STOCK)

Cross section	S.E. of Regression	Lag	Max Lag	Obs
1	1.50368	4	4	516
2	21.4497	4	4	516
3	2.07337	4	4	516

	Coefficient	t-Stat	SE Reg	Obs
Pooled	-0.08877	-4.159	0.021	1545

ตาราง ก-9 ผลการทดสอบ Panel Unit Root ด้วยวิธี IPS ที่ระดับ Levelโดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 21:48
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	2.06425	0.9805

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-0.4600	0.8959	-1.495	0.771	4	4	517
2	0.0879	0.9646	-1.495	0.771	4	4	517
3	-0.9736	0.7639	-1.495	0.771	4	4	517
Average	-0.4485		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 21:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	0.48871	0.6875

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-1.8645	0.3492	-1.495	0.771	4	4	517
2	-0.7588	0.8291	-1.495	0.771	4	4	517
3	-1.1185	0.7099	-1.495	0.771	4	4	517
Average	-1.2472		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 21:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-1.31403	0.0944

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-2.7068	0.0735	-1.495	0.771	4	4	517
2	-1.3538	0.6056	-1.495	0.771	4	4	517
3	-2.4228	0.1359	-1.495	0.771	4	4	517
Average	-2.1611		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 21:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	2.63527	0.9958

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-0.1010	0.9472	-1.495	0.771	4	4	517
2	-0.2704	0.9264	-1.495	0.771	4	4	517
3	-0.1057	0.9467	-1.495	0.771	4	4	517
Average	-0.1590		-1.495	0.771			

ตาราง ก-10 ผลการทดสอบ Panel Unit Root ด้วยวิธี IPS ที่ระดับ First Differential โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:44
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-17.5283	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-10.786	0.0000	-1.495	0.771	4	4	516
2	-9.5285	0.0000	-1.495	0.771	4	4	516
3	-10.829	0.0000	-1.495	0.771	4	4	516
Average	-10.381		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:44
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-16.6924	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.5349	0.0000	-1.495	0.771	4	4	516
2	-10.882	0.0000	-1.495	0.771	4	4	516
3	-9.4545	0.0000	-1.495	0.771	4	4	516
Average	-9.9572		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:37
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-16.2978	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.0720	0.0000	-1.495	0.771	4	4	516
2	-9.8155	0.0000	-1.495	0.771	4	4	516
3	-10.384	0.0000	-1.495	0.771	4	4	516
Average	-9.7572		-1.495	0.771			

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:37
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-16.3347	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.3811	0.0000	-1.495	0.771	4	4	516
2	-10.622	0.0000	-1.495	0.771	4	4	516
3	-9.3248	0.0000	-1.495	0.771	4	4	516
Average	-9.7759		-1.495	0.771			

ตาราง ก-11 ผลการทดสอบ Panel Unit Root ด้วยวิธี IPS ที่ระดับ Level โดยกำหนดให้มีค่าคงที่และแนวโน้มเวลา (Individual Intercept and Trend)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 22:34
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-1.31922	0.0935

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-3.8206	0.0162	-2.135	0.629	4	4	517
2	-2.3675	0.3963	-2.135	0.629	4	4	517
3	-2.0291	0.5835	-2.135	0.629	4	4	517
Average	-2.7391		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 22:34
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	0.10546	0.5420

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-1.5801	0.7998	-2.135	0.629	4	4	517
2	-2.3101	0.4272	-2.135	0.629	4	4	517
3	-2.3699	0.3950	-2.135	0.629	4	4	517
Average	-2.0867		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 22:36
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-1.09357	0.1371

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-2.7160	0.2305	-2.135	0.629	4	4	517
2	-2.3536	0.4037	-2.135	0.629	4	4	517
3	-2.8376	0.1844	-2.135	0.629	4	4	517
Average	-2.6357		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 22:42
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-1.66673	0.0478

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-2.7280	0.2256	-2.135	0.629	4	4	517
2	-3.0864	0.1106	-2.135	0.629	4	4	517
3	-2.8801	0.1699	-2.135	0.629	4	4	517
Average	-2.8982		-2.135	0.629			

ตาราง ก-12 ผลการทดสอบ Panel Unit Root ด้วยวิธี IPS ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา (Individual Intercept and Trend)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-18.0174	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-10.790	0.0000	-2.135	0.629	4	4	516
2	-9.5404	0.0000	-2.135	0.629	4	4	516
3	-10.825	0.0000	-2.135	0.629	4	4	516
Average	-10.385		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-17.1401	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.6291	0.0000	-2.135	0.629	4	4	516
2	-10.873	0.0000	-2.135	0.629	4	4	516
3	-9.4476	0.0000	-2.135	0.629	4	4	516
Average	-9.9833		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-16.6793	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.0627	0.0000	-2.135	0.629	4	4	516
2	-9.8286	0.0000	-2.135	0.629	4	4	516
3	-10.426	0.0000	-2.135	0.629	4	4	516
Average	-9.7723		-2.135	0.629			

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
Im, Pesaran and Shin W-stat	-16.7858	0.0000

** Probabilities are computed assuming asympotic normality

Intermediate ADF test results

Cross section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max Lag	Obs
1	-9.3955	0.0000	-2.135	0.629	4	4	516
2	-10.645	0.0000	-2.135	0.629	4	4	516
3	-9.4233	0.0000	-2.135	0.629	4	4	516
Average	-9.8211		-2.135	0.629			

ตาราง ก-13 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADFที่ระดับ Level โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 22:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	0.83078	0.9912
ADF - Choi Z-stat	2.18459	0.9855

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results EXR

Cross section	Prob.	Lag	Max Lag	Obs
1	0.8959	4	4	517
2	0.9646	4	4	517
3	0.7639	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 22:46
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	3.16413	0.7880
ADF - Choi Z-stat	0.64460	0.7404

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results OIL

Cross section	Prob.	Lag	Max Lag	Obs
1	0.3492	4	4	517
2	0.8291	4	4	517
3	0.7099	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 22:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	10.2158	0.1159
ADF - Choi Z-stat	-1.31714	0.0939

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results SME

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0735	4	4	517
2	0.6056	4	4	517
3	0.1359	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 22:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	0.37083	0.9991
ADF - Choi Z-stat	2.70314	0.9966

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results STOCK

Cross section	Prob.	Lag	Max Lag	Obs
1	0.9472	4	4	517
2	0.9264	4	4	517
3	0.9467	4	4	517

ตาราง ก-14 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADF ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	252.007	0.0000
ADF - Choi Z-stat	-15.2575	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(EXR)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	235.772	0.0000
ADF - Choi Z-stat	-14.7196	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(OIL)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:48
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	228.153	0.0000
ADF - Choi Z-stat	-14.4683	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(SME)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:48
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	228.848	0.0000
ADF - Choi Z-stat	-14.4888	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(STOCK)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

ตาราง ก-15 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADF ที่ระดับ Level โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 22:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	11.1749	0.0831
ADF - Choi Z-stat	-1.26543	0.1029

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results EXR

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0162	4	4	517
2	0.3963	4	4	517
3	0.5835	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 22:50
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	4.00593	0.6759
ADF - Choi Z-stat	0.22561	0.5892

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results OIL

Cross section	Prob.	Lag	Max Lag	Obs
1	0.7998	4	4	517
2	0.4272	4	4	517
3	0.3950	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 22:51
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	8.13064	0.2287
ADF - Choi Z-stat	-1.08530	0.1389

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results SME

Cross section	Prob.	Lag	Max Lag	Obs
1	0.2305	4	4	517
2	0.4037	4	4	517
3	0.1844	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 22:50
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	10.9264	0.0907
ADF - Choi Z-stat	-1.69234	0.0453

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results STOCK

Cross section	Prob.	Lag	Max Lag	Obs
1	0.2256	4	4	517
2	0.1106	4	4	517
3	0.1699	4	4	517

ตาราง ก-16 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADF ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:52
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	251.732	0.0000
ADF - Choi Z-stat	-15.2426	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(EXR)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	233.919	0.0000
ADF - Choi Z-stat	-14.6513	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(OIL)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	224.617	0.0000
ADF - Choi Z-stat	-14.3400	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(SME)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	226.752	0.0000
ADF - Choi Z-stat	-14.4121	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(STOCK)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

ตาราง ก-17 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADF ที่ระดับ Level โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา(None)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 22:51
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	0.08353	1.0000
ADF - Choi Z-stat	4.01842	1.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results EXR

Cross section	Prob.	Lag	Max Lag	Obs
1	0.9710	4	4	517
2	0.9913	4	4	517
3	0.9964	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 22:52
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	16.8643	0.0098
ADF - Choi Z-stat	-2.53917	0.0056

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results OIL

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0092	4	4	517
2	0.1516	4	4	517
3	0.1559	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 22:52
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	10.0617	0.1221
ADF - Choi Z-stat	-0.78961	0.2149

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results SME

Cross section	Prob.	Lag	Max Lag	Obs
1	0.5775	4	4	517
2	0.0157	4	4	517
3	0.7223	4	4	517

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 22:53
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1551
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	16.7190	0.0104
ADF - Choi Z-stat	-2.56804	0.0051

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results STOCK

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0164	4	4	517
2	0.0739	4	4	517
3	0.1932	4	4	517

ตาราง ก-18 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-ADF ที่ระดับFirst Differential โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา (None)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:53
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	257.935	0.0000
ADF - Choi Z-stat	-15.4494	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(EXR)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:53
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	245.835	0.0000
ADF - Choi Z-stat	-15.0530	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(OIL)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:53
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	240.838	0.0000
ADF - Choi Z-stat	-14.8969	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(SME)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:54
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
User-specified lags: 4
Total (balanced) observations: 1548
Cross-sections included: 3

Method	Statistic	Prob.**
ADF - Fisher Chi-square	237.532	0.0000
ADF - Choi Z-stat	-14.7826	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results D(STOCK)

Cross section	Prob.	Lag	Max Lag	Obs
1	0.0000	4	4	516
2	0.0000	4	4	516
3	0.0000	4	4	516

ตาราง ก-19 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PP ที่ระดับ Level โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/03/11 Time: 23:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	1.06003	0.9832
PP - Choi Z-stat	2.07825	0.9812

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results EXR

Cross section	Prob.	Bandwidth	Obs
1	0.8945	9.0	521
2	0.9704	6.0	521
3	0.6781	8.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/03/11 Time: 23:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	3.80653	0.7028
PP - Choi Z-stat	0.43159	0.6670

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results OIL

Cross section	Prob.	Bandwidth	Obs
1	0.2673	4.0	521
2	0.8090	8.0	521
3	0.6895	6.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/03/11 Time: 23:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	10.3540	0.1105
PP - Choi Z-stat	-1.39596	0.0814

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results SME

Cross section	Prob.	Bandwidth	Obs
1	0.0948	8.0	521
2	0.5527	3.0	521
3	0.1077	2.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/03/11 Time: 23:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	0.37019	0.9991
PP - Choi Z-stat	2.72219	0.9968

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results STOCK

Cross section	Prob.	Bandwidth	Obs
1	0.9467	6.0	521
2	0.9177	6.0	521
3	0.9564	6.0	521

ตาราง ก-20 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PP ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:54
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	506.793	0.0000
PP - Choi Z-stat	-22.0447	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(EXR)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	5.0	520
3	0.0000	9.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:55
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	510.489	0.0000
PP - Choi Z-stat	-22.1280	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(OIL)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	5.0	520
2	0.0000	9.0	520
3	0.0000	6.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:55
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	436.620	0.0000
PP - Choi Z-stat	-20.2109	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(SME)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	1.0	520
3	0.0000	2.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:55
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	510.816	0.0000
PP - Choi Z-stat	-22.1354	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(STOCK)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	5.0	520
2	0.0000	7.0	520
3	0.0000	6.0	520

ตาราง ก-21 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PP ที่ระดับ Level โดยกำหนดให้มีค่าคงที่และแนวโน้มเวลา (Individual Intercept and trend)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/04/11 Time: 00:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	11.4427	0.0756
PP - Choi Z-stat	-1.53683	0.0622

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results EXR

Cross section	Prob.	Bandwidth	Obs
1	0.0251	3.0	521
2	0.3279	6.0	521
3	0.3985	5.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/04/11 Time: 00:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	4.14107	0.6576
PP - Choi Z-stat	0.13224	0.5526

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results OIL

Cross section	Prob.	Bandwidth	Obs
1	0.7538	5.0	521
2	0.3865	6.0	521
3	0.4328	7.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/04/11 Time: 00:47
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	12.0803	0.0602
PP - Choi Z-stat	-1.67457	0.0470

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results SME

Cross section	Prob.	Bandwidth	Obs
1	0.2764	8.0	521
2	0.3801	5.0	521
3	0.0227	7.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/04/11 Time: 00:49
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	8.94940	0.1764
PP - Choi Z-stat	-1.25423	0.1049

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results STOCK

Cross section	Prob.	Bandwidth	Obs
1	0.3187	7.0	521
2	0.1181	1.0	521
3	0.3028	7.0	521

ตาราง ก-22 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PP ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา (Individual Intercept and trend)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 15:56
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	681.185	0.0000
PP - Choi Z-stat	-25.6736	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(EXR)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	8.0	520
2	0.0000	4.0	520
3	0.0000	9.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 15:58
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	695.318	0.0000
PP - Choi Z-stat	-25.9524	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(OIL)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	4.0	520
2	0.0000	9.0	520
3	0.0000	6.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 15:59
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	655.734	0.0000
PP - Choi Z-stat	-25.1757	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(SME)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	1.0	520
3	0.0000	3.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 15:59
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	676.510	0.0000
PP - Choi Z-stat	-25.5850	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(STOCK)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	5.0	520
2	0.0000	7.0	520
3	0.0000	5.0	520

ตาราง ก-23 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PPที่ระดับ Level โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา(None)

Null Hypothesis: Unit root (individual unit root process)
Series: EXR
Date: 09/04/11 Time: 00:51
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	0.06942	1.0000
PP - Choi Z-stat	4.03139	1.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results EXR

Cross section	Prob.	Bandwidth	Obs
1	0.9798	9.0	521
2	0.9906	6.0	521
3	0.9951	9.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: OIL
Date: 09/04/11 Time: 00:51
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	19.2576	0.0037
PP - Choi Z-stat	-2.86117	0.0021

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results OIL

Cross section	Prob.	Bandwidth	Obs
1	0.0046	4.0	521
2	0.1330	9.0	521
3	0.1079	6.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: SME
Date: 09/04/11 Time: 00:52
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	11.2537	0.0808
PP - Choi Z-stat	-0.93246	0.1755

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results SME

Cross section	Prob.	Bandwidth	Obs
1	0.5848	7.0	521
2	0.0087	3.0	521
3	0.7087	9.0	521

Null Hypothesis: Unit root (individual unit root process)
Series: STOCK
Date: 09/04/11 Time: 00:51
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	19.1842	0.0039
PP - Choi Z-stat	-2.89883	0.0019

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results STOCK

Cross section	Prob.	Bandwidth	Obs
1	0.0073	6.0	521
2	0.0650	6.0	521
3	0.1431	6.0	521

ตาราง ก-24 ผลการทดสอบ Panel Unit Root ด้วยวิธี Fisher-PP ที่ระดับFirst Differential โดยกำหนดให้ไม่มีค่าคงที่ และแนวโน้มเวลา(None)

Null Hypothesis: Unit root (individual unit root process)
Series: D(EXR)
Date: 09/07/11 Time: 16:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	537.106	0.0000
PP - Choi Z-stat	-22.7176	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(EXR)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	6.0	520
2	0.0000	6.0	520
3	0.0000	6.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(OIL)
Date: 09/07/11 Time: 16:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	543.118	0.0000
PP - Choi Z-stat	-22.8494	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(OIL)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	8.0	520
3	0.0000	6.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(SME)
Date: 09/07/11 Time: 16:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	486.150	0.0000
PP - Choi Z-stat	-21.5025	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(SME)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	4.0	520
3	0.0000	2.0	520

Null Hypothesis: Unit root (individual unit root process)
Series: D(STOCK)
Date: 09/07/11 Time: 16:00
Sample: 7/01/2009 6/30/2011
Exogenous variables: None
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1560
Cross-sections included: 3

Method	Statistic	Prob.**
PP - Fisher Chi-square	537.565	0.0000
PP - Choi Z-stat	-22.7276	0.0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate Phillips-Perron test results D(STOCK)

Cross section	Prob.	Bandwidth	Obs
1	0.0000	7.0	520
2	0.0000	5.0	520
3	0.0000	7.0	520

ตาราง ก-25 ผลการทดสอบ Panel Unit Root ด้วยวิธี Hadri ที่ระดับ Level โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Stationarity
Series: EXR
Date: 09/03/11 Time: 23:04
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	30.1153	0.0000
Heteroscedastic Consistent Z-stat	30.6467	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on EXR

Cross section	LM	Variance HAC	Bandwidth	Obs
1	2.8681	0.518222	17.0	522
2	2.7569	36.04906	17.0	522
3	2.7879	0.076003	17.0	522

Null Hypothesis: Stationarity
Series: OIL
Date: 09/03/11 Time: 23:04
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	28.6198	0.0000
Heteroscedastic Consistent Z-stat	26.6329	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on OIL

Cross section	LM	Variance HAC	Bandwidth	Obs
1	2.4834	11625.09	17.0	522
2	2.6408	2494441.	17.0	522
3	2.2525	67433.85	17.0	522

Null Hypothesis: Stationarity
Series: SME
Date: 09/03/11 Time: 23:05
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	5.42437	0.0000
Heteroscedastic Consistent Z-stat	18.0383	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on SME

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.2754	825184.2	17.0	522
2	2.8118	20046.07	17.0	522
3	2.0703	175291.5	17.0	522

Null Hypothesis: Stationarity
Series: STOCK
Date: 09/03/11 Time: 23:05
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	30.7701	0.0000
Heteroscedastic Consistent Z-stat	30.2603	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on STOCK

Cross section	LM	Variance HAC	Bandwidth	Obs
1	2.8932	13133.72	17.0	522
2	2.8153	937572.9	17.0	522
3	2.6047	6343.868	17.0	522

ตาราง ก-26 ผลการทดสอบ Panel Unit Root ด้วยวิธี Hadri ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Null Hypothesis: Stationarity
Series: D(EXR)
Date: 09/07/11 Time: 16:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	0.96662	0.1669
Heteroscedastic Consistent Z-stat	-0.47427	0.6823

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(EXR)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0475	0.000157	9.0	521
2	0.2568	0.004963	6.0	521
3	0.0732	1.60E-05	9.0	521

Null Hypothesis: Stationarity
Series: D(OIL)
Date: 09/07/11 Time: 16:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	-1.07244	0.8582
Heteroscedastic Consistent Z-stat	-0.34229	0.6339

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(OIL)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.2842	2.353845	5.0	521
2	0.0748	843.5497	9.0	521
3	0.0526	40.36427	6.0	521

Null Hypothesis: Stationarity
Series: D(SME)
Date: 09/07/11 Time: 16:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	-1.38025	0.9162
Heteroscedastic Consistent Z-stat	-1.00118	0.8416

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(SME)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0416	2697.854	7.0	521
2	0.1022	4.074054	3.0	521
3	0.0976	334.8043	9.0	521

Null Hypothesis: Stationarity
Series: D(STOCK)
Date: 09/07/11 Time: 16:01
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	-1.21717	0.8882
Heteroscedastic Consistent Z-stat	-0.85272	0.8031

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asymptotic normality

Intermediate results on D(STOCK)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0641	2.691339	6.0	521
2	0.0609	370.3436	6.0	521
3	0.1549	4.106724	6.0	521

ตาราง ก-27 ผลการทดสอบ Panel Unit Root ด้วยวิธี Hadri ที่ระดับ Level โดยกำหนดให้มีค่าคงที่และแนวโน้มเวลา (Individual Intercept and Trend)

Null Hypothesis: Stationarity
Series: EXR
Date: 09/03/11 Time: 23:23
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	6.78400	0.0000
Heteroscedastic Consistent Z-stat	9.88377	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on EXR

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.2488	0.027514	17.0	522
2	0.2299	4.016239	17.0	522
3	0.4366	0.006494	17.0	522

Null Hypothesis: Stationarity
Series: OIL
Date: 09/03/11 Time: 23:23
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	13.1461	0.0000
Heteroscedastic Consistent Z-stat	16.7538	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on OIL

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.6475	2342.927	17.0	522
2	0.3823	387882.9	17.0	522
3	0.3828	17219.99	17.0	522

Null Hypothesis: Stationarity
Series: SME
Date: 09/03/11 Time: 23:23
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	7.91734	0.0000
Heteroscedastic Consistent Z-stat	4.93245	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on SME

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.2706	821780.6	17.0	522
2	0.2296	1502.137	17.0	522
3	0.0567	52752.14	17.0	522

Null Hypothesis: Stationarity
Series: STOCK
Date: 09/03/11 Time: 23:24
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1566
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	1.73566	0.0413
Heteroscedastic Consistent Z-stat	4.91885	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on STOCK

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.2019	744.4239	17.0	522
2	0.1057	75002.80	17.0	522
3	0.2484	1043.216	17.0	522

ตาราง ก-28 ผลการทดสอบ Panel Unit Root ด้วยวิธี Hadri ที่ระดับFirst Differential โดยกำหนดให้มีค่าคงที่ และแนวโน้มเวลา(Individual Intercept and Trend)

Null Hypothesis: Stationarity
Series: D(EXR)
Date: 09/07/11 Time: 16:02
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	3.45952	0.0003
Heteroscedastic Consistent Z-stat	0.23686	0.4064

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(EXR)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0260	0.000156	9.0	521
2	0.1545	0.004873	6.0	521
3	0.0366	1.60E-05	9.0	521

Null Hypothesis: Stationarity
Series: D(OIL)
Date: 09/07/11 Time: 16:02
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	0.39284	0.3472
Heteroscedastic Consistent Z-stat	-0.29883	0.6175

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(OIL)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0487	2.281566	4.0	521
2	0.0774	842.8442	9.0	521
3	0.0523	40.36523	6.0	521

Null Hypothesis: Stationarity
Series: D(SME)
Date: 09/07/11 Time: 16:02
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	-0.99872	0.8410
Heteroscedastic Consistent Z-stat	-0.93463	0.8250

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(SME)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0419	2695.717	7.0	521
2	0.0422	4.059356	3.0	521
3	0.0482	320.8412	10.0	521

Null Hypothesis: Stationarity
Series: D(STOCK)
Date: 09/07/11 Time: 16:03
Sample: 7/01/2009 6/30/2011
Exogenous variables: Individual effects, individual linear trends
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 1563
Cross-sections included: 3

Method	Statistic	Prob.**
Hadri Z-stat	-1.38634	0.9172
Heteroscedastic Consistent Z-stat	-1.21423	0.8877

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asympotic normality

Intermediate results on D(STOCK)

Cross section	LM	Variance HAC	Bandwidth	Obs
1	0.0475	2.677894	6.0	521
2	0.0331	367.7448	6.0	521
3	0.0315	3.953167	5.0	521

ผลการทดสอบสมการพาแนล

ตาราง ก-29 ผลการทดสอบสมการพาแนลด้วยวิธี Pedroni โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Pedroni Residual Cointegration Test
Series: EXR OIL SME STOCK
Date: 08/27/11 Time: 02:24
Sample: 7/01/2009 6/30/2011
Included observations: 1566
Cross-sections included: 3
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
Automatic lag length selection based on SIC with a max lag of 18
Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	0.210835	0.4165	0.501870	0.3079
Panel rho-Statistic	-2.012481	0.0221	-1.634029	0.0511
Panel PP-Statistic	-1.874667	0.0304	-1.521277	0.0641
Panel ADF-Statistic	-1.875355	0.0304	-1.514816	0.0649

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	-1.366049	0.0860
Group PP-Statistic	-1.526131	0.0635
Group ADF-Statistic	-1.587489	0.0562

Cross section specific results

Phillips-Peron results (non-parametric)

Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
1	0.938	0.000191	0.000177	2.00	521
2	0.955	0.010931	0.010938	5.00	521
3	0.952	3.24E-05	2.01E-05	10.00	521

Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
1	0.938	0.000191	0	18	521
2	0.955	0.010931	0	18	521
3	0.962	3.07E-05	1	18	520

ตาราง ก-30 ผลการทดสอบสมการพาแนลด้วยวิธี Kao โดยกำหนดให้มีค่าคงที่ (Individual Intercept)

Kao Residual Cointegration Test
Series: EXR OIL SME STOCK
Date: 08/27/11 Time: 02:26
Sample: 7/01/2009 6/30/2011
Included observations: 1566
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
Automatic lag length selection based on SIC with a max lag of 18
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-4.880908	0.0000
Residual variance	0.001251	
HAC variance	0.001307	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Date: 08/27/11 Time: 02:26
Sample (adjusted): 7/02/2009 6/30/2011
Included observations: 1563 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.046019	0.007515	-6.124082	0.0000

R-squared	0.023217	Mean dependent var	-0.001008
Adjusted R-squared	0.023217	S.D. dependent var	0.065635
S.E. of regression	0.064869	Akaike info criterion	-2.632267
Sum squared resid	6.572794	Schwarz criterion	-2.628841
Log likelihood	2058.116	Hannan-Quinn criter.	-2.630993
Durbin-Watson stat	2.015779		

ผลการประมาณแบบจำลอง

ตาราง ก-31 ผลการประมาณแบบจำลองด้วยวิธี Haucman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	748.028130	3	0.0000

** WARNING: estimated period random effects variance is zero.

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
OIL	0.011425	0.008837	0.000003	0.1081
SME	0.000745	0.000016	0.000000	0.0000
STOCK	0.012990	0.014191	0.000007	0.6440

Period random effects test equation:
Dependent Variable: EXR
Method: Panel Least Squares
Date: 08/29/11 Time: 10:28
Sample: 7/01/2009 6/30/2011
Periods included: 522
Cross-sections included: 3
Total panel (balanced) observations: 1566

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.210540	0.462783	-11.25914	0.0000
OIL	0.011425	0.002251	5.075276	0.0000
SME	0.000745	0.000241	3.095101	0.0020
STOCK	0.012990	0.003647	3.561730	0.0004

Effects Specification

Period fixed (dummy variables)

R-squared	0.921607	Mean dependent var	12.13800
Adjusted R-squared	0.882147	S.D. dependent var	13.97428
S.E. of regression	4.797331	Akaike info criterion	6.236152
Sum squared resid	23957.97	Schwarz criterion	8.031839
Log likelihood	-4357.907	Hannan-Quinn criter.	6.903669
F-statistic	23.35545	Durbin-Watson stat	0.004723
Prob(F-statistic)	0.000000		

ตาราง ก-32 ผลการประมาณแบบจำลองด้วยวิธี Redundant Fixed Effect Test

Redundant Fixed Effects Tests
Equation: Untitled
Test period fixed effects

Effects Test	Statistic	d.f.	Prob.
Period F	1.638256	(521,1041)	0.0000
Period Chi-square	937.704558	521	0.0000

Period fixed effects test equation:
Dependent Variable: SME
Method: Panel Least Squares
Date: 08/29/11 Time: 11:11
Sample: 7/01/2009 6/30/2011
Periods included: 522
Cross-sections included: 3
Total panel (balanced) observations: 1566

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1793.467	35.66268	50.28974	0.0000
STOCK	11.43662	0.221993	51.51795	0.0000
EXR	0.274412	3.338266	0.082202	0.9345
OIL	-7.520603	0.118464	-63.48408	0.0000

R-squared	0.838501	Mean dependent var	1868.568
Adjusted R-squared	0.838190	S.D. dependent var	1684.424
S.E. of regression	677.5687	Akaike info criterion	15.87745
Sum squared resid	7.17E+08	Schwarz criterion	15.89113
Log likelihood	-12428.04	Hannan-Quinn criter.	15.88254
F-statistic	2703.288	Durbin-Watson stat	0.030981
Prob(F-statistic)	0.000000		

ผลการประมาณค่าแบบจำลอง

ตาราง ก-33 ผลการประมาณค่า Panel Cointegration ด้วยวิธี OLS

Dependent Variable: SME
Method: Panel Least Squares
Date: 08/29/11 Time: 11:18
Sample: 7/01/2009 6/30/2011
Periods included: 522
Cross-sections included: 3
Total panel (balanced) observations: 1566

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1637.385	37.09359	44.14200	0.0000
STOCK	13.18173	0.233528	56.44606	0.0000
EXR	12.24626	3.956661	3.095101	0.0020
OIL	-8.668405	0.114970	-75.39701	0.0000

Effects Specification

Period fixed (dummy variables)

R-squared	0.911260	Mean dependent var	1868.568
Adjusted R-squared	0.866592	S.D. dependent var	1684.424
S.E. of regression	615.2378	Akaike info criterion	15.94405
Sum squared resid	3.94E+08	Schwarz criterion	17.73974
Log likelihood	-11959.19	Hannan-Quinn criter.	16.61157
F-statistic	20.40055	Durbin-Watson stat	0.045926
Prob(F-statistic)	0.000000		

ตาราง ก-34 ผลการประมาณค่า Panel Cointegration ด้วยวิธี DOLS

Dependent Variable: SME
Method: Panel Least Squares
Date: 09/06/11 Time: 01:52
Sample (adjusted): 7/03/2009 6/30/2011
Periods included: 520
Cross-sections included: 3
Total panel (balanced) observations: 1560

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1626.991	37.04583	43.91832	0.0000
STOCK	13.26274	0.233419	56.81939	0.0000
EXR	11.91791	3.959436	3.010001	0.0027
OIL	-8.702173	0.114663	-75.89367	0.0000
D(STOCK(-1))	-7.566075	2.241656	-3.375216	0.0008
D(EXR(-1))	-992.0336	556.0242	-1.784155	0.0747
D(OIL(-1))	4.760580	1.390002	3.424872	0.0006

Effects Specification

Period fixed (dummy variables)

R-squared	0.912791	Mean dependent var	1868.675
Adjusted R-squared	0.868512	S.D. dependent var	1684.391
S.E. of regression	610.7822	Akaike info criterion	15.93047
Sum squared resid	3.86E+08	Schwarz criterion	17.73520
Log likelihood	-11899.76	Hannan-Quinn criter.	16.60147
F-statistic	20.61444	Durbin-Watson stat	0.077229
Prob(F-statistic)	0.000000		

ตาราง ก-35 ผลการประมาณค่า Panel Cointegration ด้วยวิธี GMM

Dependent Variable: SME
Method: Panel Generalized Method of Moments
Date: 09/05/11 Time: 16:08
Sample (adjusted): 7/02/2009 6/30/2011
Periods included: 521
Cross-sections included: 3
Total panel (balanced) observations: 1563
2SLS instrument weighting matrix
Instrument specification: C SME(-1) STOCK(-1) EXR(-1) OIL(-1)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1618.686	37.31907	43.37423	0.0000
EXR	11.86725	3.972284	2.987513	0.0029
OIL	-8.744088	0.115750	-75.54318	0.0000
STOCK	13.33950	0.235453	56.65472	0.0000

Effects Specification

Period fixed (dummy variables)

R-squared	0.911119	Mean dependent var	1868.614
Adjusted R-squared	0.866378	S.D. dependent var	1684.412
S.E. of regression	615.7245	Sum squared resid	3.94E+08
Durbin-Watson stat	0.046812	J-statistic	990.9132
Instrument rank	525		

ประวัติผู้เขียน

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