ภาคผนวก

ภาคผนวก ก

ผลการทดสอบ UNIT ROOT ของตัวแปรทั้งหมดที่ทำการศึกษาด้วยวิธีการ Augmented Dickey-Fuller test

1) ผลการทดสอบ UNIT ROOT ของอัตราเงินเฟ้อแยกเป็นประเทศได้ดังนี้

1.1) ประเทศจีน

Null Hypothesis: CHINACPI has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.758854	0.0747
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(CHINACPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.831971	0.0002
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.2) ประเทศเยอรมัน

Null Hypothesis: GERMANYCPI has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		9.368049	1.0000
Test critical values:	1% level	-2.574756	
	5% level	-1.942170	
	10% level	-1.615807	

Null Hypothesis: D(GERMANYCPI) has a unit root
Exogenous: None
Lag Length: 2 (Automatic based on SIC, MAXLAG=14)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.194197	0.0000

Test critical values:	1% level	-2.574882
	5% level	-1.942188
	10% level	-1.615795

1.3) ประเทศอินเดีย

Null Hypothesis: INDIACPI has a unit root
Exogenous: None
Lag Length: 4 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		5.549770	1.0000
Test critical values:	1% level	-2.574925	
	5% level	-1.942193	
	10% level	-1.615791	

Null Hypothesis: D(INDIACPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.639202	0.4395
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(INDIACPI,2) has a unit root
Exogenous: None
Lag Length: 10 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.34971	0.0000
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.4) ประเทศญี่ปุ่น

Null Hypothesis: JAPANCPI has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.378034	0.9579
Test critical values:	1% level	-2.574756	
	5% level	-1.942170	
	10% level	-1.615807	

Null Hypothesis: D(JAPANCPI) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-14.51594	0.0000
Test critical values:	1% level	-2.574797	
	5% level	-1.942176	
	10% level	-1.615803	

1.5) ประเทศเกาหลีใต้

Null Hypothesis: KOREA_CPI has a unit root
Exogenous: None
Lag Length: 2 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		6.561818	1.0000
Test critical values:	1% level	-2.574839	
	5% level	-1.942182	
	10% level	-1.615799	

Null Hypothesis: D(KOREA_CPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.278182	0.1852
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(KOREA_CPI,2) has a unit root
Exogenous: None
Lag Length: 10 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.23767	0.0000
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.6) ประเทศมาเลเซีย

Null Hypothesis: MALAYSIA_CPI has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		5.032099	1.0000
Test critical values:	1% level	-2.574797	
	5% level	-1.942176	
	10% level	-1.615803	

Null Hypothesis: D(MALAYSIA_CPI) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.479031	0.0000
Test critical values:	1% level	-2.574797	
	5% level	-1.942176	
	10% level	-1.615803	

1.7) ประเทศสิงคโปร์

Null Hypothesis: SINGAPORE_CPI has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.093648	0.9915
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(SINGAPORE_CPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.687806	0.0072
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.8) สหราชอาณาจักร

Null Hypothesis: UK_CPI has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.687850	0.9779
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(UK_CPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-1.415813	0.1459
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

Null Hypothesis: D(UK_CPI,2) has a unit root
Exogenous: None
Lag Length: 10 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.43838	0.0000
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.9) สหรัฐอเมริกา

Null Hypothesis: US_CPI has a unit root
Exogenous: None
Lag Length: 2 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		6.647378	1.0000
Test critical values:	1% level	-2.574839	
	5% level	-1.942182	
	10% level	-1.615799	

Null Hypothesis: D(US_CPI) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=14)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.025582	0.0413
Test critical values:	1% level	-2.575280	
	5% level	-1.942243	
	10% level	-1.615759	

1.10) ประเทศออสเตรเลีย

Null Hypothesis: AUS_CPI has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		9.814598	1.0000
Test critical values:	1% level	-2.594563	
	5% level	-1.944969	
	10% level	-1.614082	

Null Hypothesis: D(AUS_CPI) has a unit root
Exogenous: None

Lag Length: 1 (Automatic based on SIC, MAXLAG=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.825686	0.0053
Test critical values:	1% level	-2.595340	
	5% level	-1.945081	
	10% level	-1.614017	

2) **ผลการทดสอบ UNIT ROOT ของอัตราแลกเปลี่ยนเมื่อเทียบกับเงินบาทแยกเป็นประเทศได้ดังนี้**

2.1) ประเทศออสเตรเลีย

Null Hypothesis: THB_AUSD has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.116840	0.6419
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_AUSD) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.61411	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.2) ประเทศเยอรมัน

Null Hypothesis: THB_MARK has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.525373	0.8282
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_MARK) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.26098	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.3) ประเทศมาเลเซีย

Null Hypothesis: THB_RINGGIT has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.271743	0.5867
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

Null Hypothesis: D(THB_RINGGIT) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-16.11388	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.4) ประเทศอินเดีย

Null Hypothesis: THB_RUPEE has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.242339	0.5974
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_RUPEE) has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.67165	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.5) ประเทศสิงคโปร์

Null Hypothesis: THB_SND has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.227236	0.7509
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

Null Hypothesis: D(THB_SND) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.620199	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.6) สหราชอาณาจักร

Null Hypothesis: THB_UKP has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.025304	0.6728
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_UKP) has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-11.19110	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.7) สหรัฐอเมริกา

Null Hypothesis: THB_US has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.150092	0.7282
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_US) has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.64578	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.8) ประเทศเกาหลีใต้

Null Hypothesis: THB_WON has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.535819	0.4834
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_WON) has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.54438	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.9) ประเทศญี่ปุ่น

Null Hypothesis: THB_YEN has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.631157	0.8516
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_YEN) has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.17596	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

2.10) ประเทศจีน

Null Hypothesis: THB_YUAN has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.538474	0.8313
Test critical values:	1% level	-2.580366	
	5% level	-1.942952	
	10% level	-1.615307	

Null Hypothesis: D(THB_YUAN) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.64538	0.0000
Test critical values:	1% level	-2.580470	
	5% level	-1.942967	
	10% level	-1.615298	

3) ผลการทดสอบ UNIT ROOT ของจำนวนนักท่องเที่ยวแยกเป็นประเทศได้ดังนี้

3.1) ประเทศออสเตรเลีย

Null Hypothesis: AUSTRALIA has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.466624	0.9644
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(AUSTRALIA) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.735782	0.0065
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.2) ประเทศจีน

Null Hypothesis: CHINA has a unit root
Exogenous: None
Lag Length: 2 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.925618	0.3139
Test critical values:	1% level	-2.581584	
	5% level	-1.943123	
	10% level	-1.615200	

Null Hypothesis: D(CHINA) has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.50402	0.0000
Test critical values:	1% level	-2.581584	
	5% level	-1.943123	
	10% level	-1.615200	

3.3) ประเทศเยอรมัน

Null Hypothesis: GERMANY has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.588389	0.9723
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(GERMANY) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.241542	0.0000
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.4) ประเทศอินเดีย

Null Hypothesis: INDIA has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.020704	0.9896
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(INDIA) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-3.755732	0.0002
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.5) ประเทศญี่ปุ่น

Null Hypothesis: JAPAN has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.082203	0.6535
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(JAPAN) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.657037	0.0003
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.6) ประเทศเกาหลีใต้

Null Hypothesis: KOREA has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.365498	0.7887
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(KOREA) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.917569	0.0001
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.7) ประเทศมาเลเซีย

Null Hypothesis: MALAYSIA has a unit root
Exogenous: None
Lag Length: 1 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.393443	0.5406
Test critical values:	1% level	-2.581466	
	5% level	-1.943107	
	10% level	-1.615210	

Null Hypothesis: D(MALAYSIA) has a unit root
Exogenous: None
Lag Length: 0 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-20.48205	0.0000
Test critical values:	1% level	-2.581466	
	5% level	-1.943107	
	10% level	-1.615210	

3.8) ประเทศสิงคโปร์

Null Hypothesis: SINGAPORE has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.370538	0.7900
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(SINGAPORE) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.630686	0.0000
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

3.9) สหราชอาณาจักร

Null Hypothesis: UK has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.417256	0.9998
Test critical values:	1% level	-2.582734	
	5% level	-1.943285	
	10% level	-1.615099	

Null Hypothesis: D(UK) has a unit root
Exogenous: None
Lag Length: 13 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.667978	0.0079
Test critical values:	1% level	-2.583153	
	5% level	-1.943344	
	10% level	-1.615062	

3.10) สหรัฐอเมริกา

Null Hypothesis: USA has a unit root
Exogenous: None
Lag Length: 12 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.011365	0.9174
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

Null Hypothesis: D(USA) has a unit root
Exogenous: None
Lag Length: 11 (Automatic based on SIC, MAXLAG=13)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.707073	0.0003
Test critical values:	1% level	-2.582872	
	5% level	-1.943304	
	10% level	-1.615087	

ภาคผนวก ข

ผลการประมาณค่าพารามิเตอร์โดยวิธีมัลไทวาริเอทการ์ช

1.1 ประเทศจีน

```
MV_GARCH, CC - Estimation by BHHH
NO CONVERGENCE IN 76 ITERATIONS
LAST CRITERION WAS  0.0000000
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1997:07 To 2008:11
Usable Observations    137
Function Value                    -49.69921117

   Variable                  Coeff       Std Error      T-Stat     Signif
*******************************************************************************

 C(1)                     0.070999294  0.010085820      7.03952  0.00000000
 C(2)                     0.230843404  0.044042529      5.24137  0.00000016
 C(3)                     0.007736512  0.001732778      4.46480  0.00000801
 A(1,1)                   0.422983814  0.181378874      2.33205  0.01969829
 A(1,2)                  -0.166927226  0.059015325     -2.82854  0.00467608
 A(1,3)                  -0.145168447  0.291095185     -0.49870  0.61799249
 A(2,1)                   0.446779236  0.357731356      1.24892  0.21169291
 A(2,2)                   0.377049427  0.176320920      2.13843  0.03248210
 A(2,3)                  -0.238320539  0.763614195     -0.31210  0.75496796
 A(3,1)                   0.169111169  0.078255465      2.16101  0.03069425
 A(3,2)                  -0.043727761  0.033747342     -1.29574  0.19506529
 A(3,3)                   0.731750562  0.210087870      3.48307  0.00049570
 R(2,1)                   0.280458601  0.096290013      2.91264  0.00358382
 R(3,1)                   0.048220802  0.111797749      0.43132  0.66623443
 R(3,2)                  -0.050858685  0.122310191     -0.41582  0.67754375

Multivariate Q(10)=      87.68282
Significance Level as Chi-Squared(90)=        0.54950
Multivariate Q(10)=      76.47235
Significance Level as Chi-Squared(90)=        0.84456
```

1.2 ประเทศเยอรมัน

```
MV_GARCH, CC - Estimation by BHHH
NO CONVERGENCE IN 92 ITERATIONS
LAST CRITERION WAS  0.0000000
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2008:11
Usable Observations    130
Function Value                -31.75899227
```

Variable	Coeff	Std Error	T-Stat	Signif
C(1)	-0.02304	0.77317	-0.02979	0.97623140
C(2)	0.13620	3.35680	0.04058	0.96763432
C(3)	0.68393	14.46163	0.04729	0.96227991
B(1,1)	-3.08025	46.80618	-0.06581	0.94753016
B(1,2)	65.74258	778.42268	0.08446	0.93269377
B(1,3)	-758.95414	10373.28690	-0.07316	0.94167538
B(2,1)	-10.15012	270.01759	-0.03759	0.97001412
B(2,2)	2.85115	47.65926	0.05982	0.95229609
B(2,3)	-43.99803	995.66222	-0.04419	0.96475318
B(3,1)	-272.21255	3489.99809	-0.07800	0.93782972
B(3,2)	-80.93172	1688.75855	-0.04792	0.96177697
B(3,3)	0.43903	14.49064	0.03030	0.97582984
R(2,1)	0.04947	0.10936	0.45238	0.65099450
R(3,1)	-0.00004	0.01889	-0.00197	0.99843192
R(3,2)	0.02983	0.12311	0.24228	0.80856210

```
Multivariate Q(10)=      34.35832
Significance Level as Chi-Squared(90)=       0.72160
Multivariate Q(10)=      25.30271
Significance Level as Chi-Squared(90)=       0.91714
```

1.3 ประเทศเกาหลีใต้

```
MV_GARCH, DCC - Estimation by BHHH
NO CONVERGENCE IN 27 ITERATIONS
LAST CRITERION WAS  0.0000000
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2008:11
Usable Observations     130
Function Value                651.82733709

   Variable                 Coeff      Std Error     T-Stat     Signif
*******************************************************************************



   C(1)                     0.048861     0.026149     1.86854  0.06168693
   C(2)                     0.019212     0.034817     0.55180  0.58108340
   C(3)                     0.000002     0.000000     6.06484  0.00000000
   B(1,1)                   0.564480     0.393962     1.43283  0.15190765
   B(1,2)                   5.546825     2.608751     2.12624  0.03348346
   B(1,3)                -383.624843  1533.548007    -0.25016  0.80246741
   B(2,1)                  -2.451105     5.383876    -0.45527  0.64891657
   B(2,2)                   0.744760     0.302897     2.45879  0.01394063
   B(2,3)               -1418.346481  1343.937470    -1.05537  0.29125777
   B(3,1)                   0.051165     0.029957     1.70796  0.08764377
   B(3,2)                   0.016869     0.010172     1.65829  0.09725940
   B(3,3)                   0.059909     0.567007     0.10566  0.91585328
   DCC(1)                   0.031412     0.017270     1.81888  0.06892947
   DCC(2)                   0.253651     0.238388     1.06403  0.28731732
```

1.4 ประเทศอินเดีย

Usable Observations 130
Function Value 212.66503207

Variable	Coeff	Std Error	T-Stat	Signif
C(1)	-0.032363	0.202626	-0.15972	0.87310247
C(2)	0.915874	2.410390	0.37997	0.70396822
C(3)	-0.000079	0.002910	-0.02709	0.97838884
B{1}(1,1)	-1.581814	7.699461	-0.20544	0.83722466
B{1}(1,2)	-9.207927	0.002162	-4258.17305	0.00000000
B{1}(1,3)	-0.476084	0.010352	-45.98850	0.00000000
B{1}(2,1)	-45.581251	1214.359973	-0.03754	0.97005827
B{1}(2,2)	-0.035482	9.282208	-0.00382	0.99695001
B{1}(2,3)	-24.333023	4423.370109	-0.00550	0.99561085
B{1}(3,1)	-0.684305	199.642451	-0.00343	0.99726513
B{1}(3,2)	-0.100858	40.356408	-0.00250	0.99800595
B{1}(3,3)	-0.008418	3.589611	-0.00235	0.99812880
B{2}(1,1)	0.914102	4.899515	0.18657	0.85199792
B{2}(1,2)	4.063705	0.044564	91.18719	0.00000000
B{2}(1,3)	2.039690	539.166265	0.00378	0.99698157
B{2}(2,1)	93.974657	1759.194732	0.05342	0.95739796
B{2}(2,2)	0.062224	10.069398	0.00618	0.99506947
B{2}(2,3)	25.465513	5515.394398	0.00462	0.99631604
B{2}(3,1)	1.307810	237.118732	0.00552	0.99559935
B{2}(3,2)	-0.038581	59.161120	-6.52129e-04	0.99947968
B{2}(3,3)	0.091271	5.803873	0.01573	0.98745305
B{3}(1,1)	-0.059139	6.032621	-0.00980	0.99217829
B{3}(1,2)	0.147004	8.740149	0.01682	0.98658074
B{3}(1,3)	2.427804	2.571256	0.94421	0.34506266
B{3}(2,1)	-42.678783	1016.271504	-0.04200	0.96650232
B{3}(2,2)	0.187463	11.759820	0.01594	0.98728148
B{3}(2,3)	-0.277691	1465.381779	-1.89501e-04	0.99984880
B{3}(3,1)	-0.825591	145.362983	-0.00568	0.99546843
B{3}(3,2)	1.533675	46.909842	0.03269	0.97391853
B{3}(3,3)	-0.046495	6.744517	-0.00689	0.99449964
R(2,1)	-0.092864	0.059558	-1.55922	0.11894424
R(3,1)	-0.020969	0.124250	-0.16877	0.86597924
R(3,2)	0.014159	0.093473	0.15147	0.87960299

1.5 ประเทศสหรัฐอเมริกา

```
MV_GARCH, CC - Estimation by BHHH
NO CONVERGENCE IN 106 ITERATIONS
LAST CRITERION WAS  0.0000000
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2008:11
Usable Observations     130
Function Value                    -193.95161935

   Variable                  Coeff       Std Error      T-Stat     Signif
*******************************************************************************



   C(1)                     -0.043411      0.015200      -2.85592  0.00429119
   C(2)                      0.540315      0.091855       5.88227  0.00000000
   C(3)                      0.879983      1.662187       0.52941  0.59651909
   B(1,1)                   -5.791041      0.691276      -8.37732  0.00000000
   B(1,2)                   70.081937     12.391555       5.65562  0.00000002
   B(1,3)                  -83.325178     14.811482      -5.62572  0.00000002
   B(2,1)                  -29.002606      0.218838    -132.53022  0.00000000
   B(2,2)                   -1.351027      0.116952     -11.55202  0.00000000
   B(2,3)                    4.643159      4.363018       1.06421  0.28723449
   B(3,1)                  -92.062451      1.441263     -63.87625  0.00000000
   B(3,2)                    6.418584      0.124819      51.42312  0.00000000
   B(3,3)                   -0.115047      1.193083      -0.09643  0.92318064
   R(2,1)                    0.007354      0.002025       3.63183  0.00028142
   R(3,1)                   -0.008698      0.000000 -115952.18547  0.00000000
   R(3,2)                    0.099119      0.067812       1.46166  0.14383343

Multivariate Q(10)=      44.65662
Significance Level as Chi-Squared(40)=       0.28244
Multivariate Q(10)=      39.38094
Significance Level as Chi-Squared(40)=       0.49795
```

1.6 ประเทศมาเลเซีย

Usable Observations 141
Function Value 16.93067135

Variable	Coeff	Std Error	T-Stat	Signif
C(1)	0.00948303	0.00705863	1.34347	0.17912089
C(2)	0.13979398	0.03183671	4.39097	0.00001128
C(3)	0.03654928	0.01809925	2.01938	0.04344766
A(1,1)	0.14098505	0.06436935	2.19025	0.02850601
A(1,2)	0.12637321	0.04718039	2.67851	0.00739502
A(1,3)	-0.04484875	0.09107013	-0.49246	0.62239141
A(2,1)	0.86100512	0.19338157	4.45236	0.00000849
A(2,2)	0.48029359	0.08148746	5.89408	0.00000000
A(2,3)	1.22093299	0.17825602	6.84932	0.00000000
A(3,1)	0.37339081	0.13994417	2.66814	0.00762722
A(3,2)	0.14240581	0.12972398	1.09776	0.27230925
A(3,3)	0.11758275	0.06216541	1.89145	0.05856433
B{1}(1,1)	0.19729658	0.32504919	0.60697	0.54386781
B{1}(1,2)	-4.04752906	1.76026282	-2.29939	0.02148286
B{1}(1,3)	3.14827365	2.33697697	1.34716	0.17792984
B{1}(2,1)	23.25802889	10.61502738	2.19105	0.02844836
B{1}(2,2)	-0.01361089	0.09259879	-0.14699	0.88314166
B{1}(2,3)	9.57148488	10.19462805	0.93888	0.34779475
B{1}(3,1)	6.09205878	5.44788760	1.11824	0.26346349
B{1}(3,2)	-1.43800172	1.79547739	-0.80090	0.42318829
B{1}(3,3)	0.75671949	0.49696110	1.52269	0.12783538
B{2}(1,1)	0.03184530	0.27904372	0.11412	0.90914031
B{2}(1,2)	2.38199349	1.08911716	2.18709	0.02873621
B{2}(1,3)	-4.04236871	3.19576278	-1.26492	0.20590175
B{2}(2,1)	14.41618799	14.44002541	0.99835	0.31811005
B{2}(2,2)	0.53793887	0.23103091	2.32843	0.01988938
B{2}(2,3)	-6.40883479	6.93550868	-0.92406	0.35545443
B{2}(3,1)	4.48371171	5.53970484	0.80938	0.41829812
B{2}(3,2)	-0.46672544	1.66729926	-0.27993	0.77953197
B{2}(3,3)	0.48653736	0.55676173	0.87387	0.38218907
R(2,1)	-0.06771801	0.02114871	-3.20199	0.00136481
R(3,1)	-0.11597520	0.06219825	-1.86461	0.06223671
R(3,2)	0.08138175	0.08776922	0.92722	0.35381014

Multivariate Q(10)= 44.62231
Significance Level as Chi-Squared(40)= 0.28364
Multivariate Q(10)= 33.89381
Significance Level as Chi-Squared(40)= 0.74063

1.7 ประเทศญี่ปุ่น

RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2008:11
Usable Observations 130
Function Value 519.68200166

Variable	Coeff	Std Error	T-Stat	Signif
C(1)	0.01129	39.95992	2.82637e-04	0.99977449
C(2)	0.02923	51.16453	5.71341e-04	0.99954414
C(3)	0.00016	0.44129	3.71272e-04	0.99970377
B{1}(1,1)	0.04719	804.53970	5.86512e-05	0.99995320
B{1}(1,2)	1.20332	0.00000	0.00000	0.00000000
B{1}(1,3)	-36.87046	0.00000	0.00000	0.00000000
B{1}(2,1)	-2.90765	0.00000	0.00000	0.00000000
B{1}(2,2)	0.05281	0.00000	0.00000	0.00000000
B{1}(2,3)	-11.94503	0.00000	0.00000	0.00000000
B{1}(3,1)	-0.46168	5267.08712	-8.76542e-05	0.99993006
B{1}(3,2)	-0.02816	7.54340	-0.00373	0.99702148
B{1}(3,3)	0.02743	197.98848	1.38556e-04	0.99988945
B{2}(1,1)	0.12602	0.28338	0.44471	0.65653250
B{2}(1,2)	4.85582	0.00000	0.00000	0.00000000
B{2}(1,3)	12.88248	23911.70085	5.38752e-04	0.99957014
B{2}(2,1)	0.84760	1784.17637	4.75066e-04	0.99962095
B{2}(2,2)	0.21299	0.00000	0.00000	0.00000000
B{2}(2,3)	-2.13059	0.00000	0.00000	0.00000000
B{2}(3,1)	0.02852	1939.77402	1.47019e-05	0.99998827
B{2}(3,2)	0.37405	0.00000	0.00000	0.00000000
B{2}(3,3)	0.11956	266.36545	4.48865e-04	0.99964186
R(2,1)	0.00303	0.14745	0.02057	0.98358470
R(3,1)	0.02630	0.27579	0.09535	0.92403404
R(3,2)	-0.06667	1.79903	-0.03706	0.97043928

1.8 ประเทศ สหราชอาณาจักร

```
MV_GARCH, CC - Estimation by BHHH
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2008:11
Usable Observations     130
Function Value                -213.79641662

   Variable                    Coeff       Std Error      T-Stat     Signif
*****************************************************************************
1.  Constant                 0.0039974     0.0114712      0.34847  0.72748531
2.  TOUR{6}                 -0.1838314     0.0807777     -2.27577  0.02285977
3.  TOUR{12}                 0.6309883     0.0765562      8.24215  0.00000000
4.  Constant                 0.0118483     0.0324999      0.36456  0.71543641
5.  CPI{6}                   0.2068074     0.0764559      2.70492  0.00683203
6.  CPI{12}                  0.7043602     0.0795267      8.85691  0.00000000
7.  Constant                 0.0025226     0.2457489      0.01027  0.99180984
8.  EXR{12}                 -0.0615422     0.1152143     -0.53415  0.59323489
9.  C(1)                     0.0056885     0.3743085      0.01520  0.98787475
10. C(2)                     0.1039295     0.6468127      0.16068  0.87234586
11. C(3)                     5.2272938   102.2487712      0.05112  0.95922728
12. B(1,1)                  -0.3438367     0.6077085     -0.56579  0.57153506
13. B(1,2)                   3.0674118     1.1885057      2.58090  0.00985437
14. B(1,3)                   0.1278438    13.7961079      0.00927  0.99260638
15. B(2,1)                   7.3879637    25.9876102      0.28429  0.77618974
16. B(2,2)                  -0.0783406     0.3426081     -0.22866  0.81913358
17. B(2,3)                   0.0670817     0.0000000      0.00000  0.00000000
18. B(3,1)                  -0.2249293   490.9832645 -4.58120e-04  0.99963447
19. B(3,2)                   0.7194646     0.0000000      0.00000  0.00000000
20. B(3,3)                  -0.0888205    10.4996096     -0.00846  0.99325045
21. R(2,1)                   0.0714311     0.0893193      0.79973  0.42386888
22. R(3,1)                   0.0551364     0.1139138      0.48402  0.62837281
23. R(3,2)                  -0.1957609     0.1453532     -1.34679  0.17804643

Multivariate Q(10)=     108.30687
Significance Level as Chi-Squared(40)=       0.28695
Multivariate Q(10)=      38.61263
Significance Level as Chi-Squared(40)=       0.53272
```

1.9 ประเทศสิงคโปร์

```
MV_GARCH, CC - Estimation by BHHH
NO CONVERGENCE IN 200 ITERATIONS
LAST CRITERION WAS  0.0000347
Monthly Data From 1998:02 To 2008:11
Usable Observations    130
Function Value                -112.97757662
```

Variable	Coeff	Std Error	T-Stat	Signif
7. C(1)	0.01554616	0.00981883	1.58330	0.11335312
8. C(2)	0.00701282	0.00154195	4.54802	0.00000542
9. C(3)	0.23613298	0.06964231	3.39065	0.00069726
10. A(1,1)	0.02693324	0.03208088	0.83954	0.40116531
11. A(1,2)	-0.07463985	0.03518274	-2.12149	0.03388054
12. A(1,3)	-0.01717315	0.06072604	-0.28280	0.77733234
13. A(2,1)	-0.12616387	0.10017694	-1.25941	0.20788216
14. A(2,2)	-0.08162555	0.01872458	-4.35927	0.00001305
15. A(2,3)	-0.09814605	0.02593835	-3.78382	0.00015444
16. A(3,1)	0.24072522	0.31570344	0.76250	0.44575909
17. A(3,2)	0.06391851	0.19614271	0.32588	0.74451700
18. A(3,3)	0.28860868	0.15483627	1.86396	0.06232727
19. B(1,1)	0.97177010	0.10832091	8.97121	0.00000000
20. B(1,2)	-0.76686240	0.82902795	-0.92501	0.35495866
21. B(1,3)	1.80669918	1.39394883	1.29610	0.19494052
22. B(2,1)	-0.12348142	0.49147423	-0.25125	0.80162315
23. B(2,2)	1.13790643	0.03791303	30.01360	0.00000000
24. B(2,3)	-0.39470567	0.02600101	-15.18040	0.00000000
25. B(3,1)	44.40901648	14.38731772	3.08668	0.00202407
26. B(3,2)	-3.67375106	2.61985806	-1.40227	0.16083433
27. B(3,3)	0.95426347	0.02573454	37.08104	0.00000000
28. R(2,1)	0.12689007	0.10609301	1.19603	0.23168613
29. R(3,1)	-0.05182341	0.01079615	-4.80018	0.00000159
30. R(3,2)	0.14801643	0.03768455	3.92778	0.00008574

```
Multivariate Q(10)=      49.14648
Significance Level as Chi-Squared(90)=       0.15222
Multivariate Q(10)=      25.30271
Significance Level as Chi-Squared(90)=       0.13714
```

1.10 ประเทศออสเตรเลีย

Split I/O Windows (Vertical)

```
MV_GARCH, DCC - Estimation by .....
NO CONVERGENCE IN 22 ITERATIONS
LAST CRITERION WAS  0.0000000
SUBITERATIONS LIMIT EXCEEDED. ESTIMATION POSSIBLY HAS STALLED OR MACHINE ROUNDOFF IS MAKING FURTHER PROGRESS DIFFICULT.
TRY HIGHER SUBITERATIONS LIMIT, TIGHTER CVCRIT, DIFFERENT SETTING FOR EXACTLINE OR ALPHA ON NLPAR.
RESTARTING ESTIMATION FROM LAST ESTIMATES OR DIFFERENT INITIAL GUESSES MIGHT ALSO WORK
Monthly Data From 1998:02 To 2003:08
Usable Observations     67
Function Value                  -82.97413126

   Variable                 Coeff      Std Error      T-Stat     Signif
*******************************************************************************

    C(1)                  0.00713910   0.00399302     1.78789  0.07379336
    C(2)                  0.58768082   0.36656096     1.60323  0.10888431
    C(3)                 -0.02835055   0.14611963    -0.19402  0.84615797
    B(1,1)                0.93001175   0.31712534     2.93263  0.00336103
    B(1,2)               -0.59002117   0.28054741    -2.10311  0.03545643
    B(1,3)               -0.18183487   0.27270087    -0.66679  0.50490474
    B(2,1)              -89.04973471  33.82893796    -2.63235  0.00847955
    B(2,2)                0.61196469   0.67966749     0.90039  0.36791362
    B(2,3)                4.44301750   5.10074193     0.87105  0.38372511
    B(3,1)               30.99381173  34.21851313     0.90576  0.36506210
    B(3,2)               -0.34880325   0.87540755    -0.39845  0.69030094
    B(3,3)                0.82949083   0.22916142     3.61968  0.00029497
    DCC(1)                0.03682550   0.02689367     1.36930  0.17090557
    DCC(2)                0.62175053   0.38226554     1.62649  0.10384576



Multivariate Q(10)=      37.23767
Significance Level as Chi-Squared(90)=       0.23451
Multivariate Q(10)=      15.30271
Significance Level as Chi-Squared(90)=       0.17985
```

ประวัติผู้เขียน

ชื่อ นายฐิติศักดิ์ กิตติศักดิ์ธาดากุล

วัน เดือน ปี เกิด 3 ตุลาคม 2522

ประวัติการศึกษา สำเร็จการศึกษามัธยมศึกษาตอนปลาย โรงเรียนปรินส์รอยแยลส์วิทยาลัย ปีการศึกษา 2539

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