APPENDIX

Appendix A. Data of the Study

Appendix A.1 Data of OER, MER, EX, IM and TB

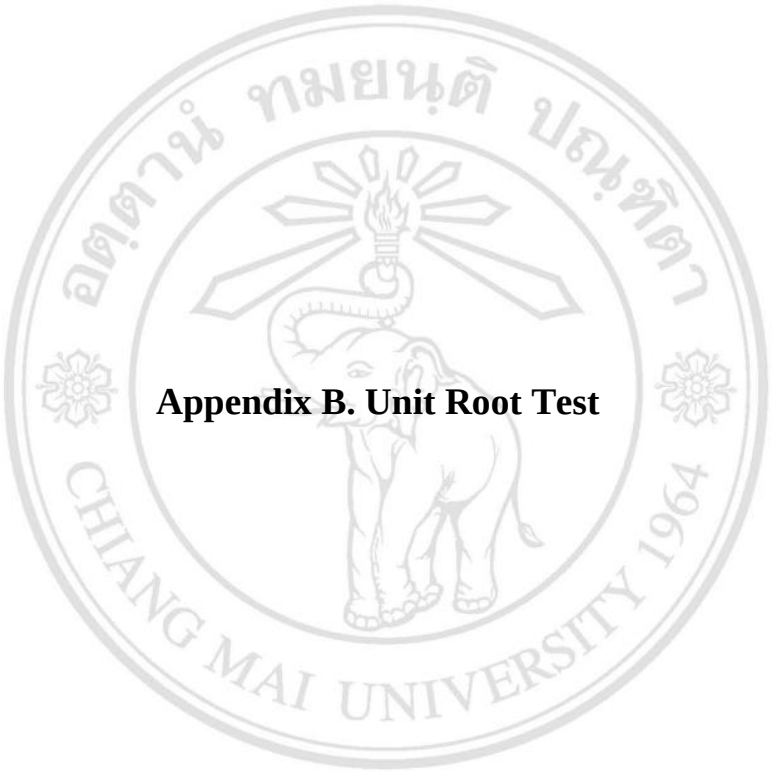
Year	OER	MER	EX	IM	TB
1986	7.26	40.19	896.90	1831.90	-935.10
1987	6.58	42.68	367.55	598.19	-230.64
1988	6.62	43.53	250.03	614.61	-364.58
1989	6.37	53.00	340.49	516.19	-175.70
1990	6.21	62.00	324.91	269.99	54.91
1991	6.27	88.00	419.25	645.95	-226.70
1992	6.07	105.00	531.42	651.16	-119.75
1993	6.10	119.00	586.03	813.95	-227.93
1994	5.89	113.40	798.45	885.77	-87.32
1995	5.62	120.40	851.21	1334.59	-483.38
1996	5.91	159.10	746.34	1358.09	-611.75
1997	6.39	340.00	866.27	2037.29	-1171.02
1998	6.39	343.20	1065.22	2665.80	-1600.58
1999	6.39	348.00	1124.59	2300.12	-1175.53
2000	6.39	376.42	1620.17	2370.89	-750.72
2001	6.39	616.07	2358.02	2849.27	-491.25
2002	6.39	921.14	3014.72	2323.84	690.88
2003	6.39	966.57	2458.39	2069.72	388.67
2004	6.39	988.57	2355.48	2173.93	181.55
2005	6.39	1060.27	3776.45	1908.13	1868.32
2006	6.39	1270.38	4539.12	2538.21	2000.91
2007	5.74	1272.17	6252.69	3246.61	3006.08
2008	5.48	1045.00	6882.19	4256.23	2625.96
2009	5.45	1063.60	6661.54	4347.62	2313.92
2010	5.54	973.40	8661.08	4759.66	3901.42
2011	5.39	980.00	9238.04	9018.97	219.07
2012	851.58	859.66	8876.91	9181.40	-304.49
2013	966.75	967.00	11232.80	12042.50	-809.70
2014	997.83	1003.08	11204.00	13759.50	-2555.50
2015	1,025.00	1251.02	12523.70	16633.20	-4109.50

Source: WTO, IMF, Myanmar Official Data

Appendix A.2 Growth Rate Data of GMER, GEX, GIM and GTB

Year	GMER	GEX	GIM	GTB
1986	-	-	-	-
1987	0.061956	-0.5902	-0.67346	-0.75335
1988	0.019916	-0.31974	0.027449	0.580732
1989	0.217551	0.361797	-0.16013	-0.51808
1990	0.169811	-0.04576	-0.47695	-1.31254
1991	0.419355	0.290359	1.392437	-5.12831
1992	0.193182	0.267548	0.008077	-0.47178
1993	0.133333	0.102767	0.250007	0.903437
1994	-0.04706	0.362479	0.088223	-0.61692
1995	0.061728	0.066072	0.506704	4.536019
1996	0.321429	-0.1232	0.017608	0.265558
1997	1.137021	0.160689	0.500114	0.914216
1998	0.009412	0.229663	0.308503	0.366826
1999	0.013986	0.055735	-0.13717	-0.26556
2000	0.081667	0.440676	0.030768	-0.36138
2001	0.636656	0.455415	0.201772	-0.34563
2002	0.495187	0.278496	-0.18441	-2.40637
2003	0.049319	-0.18454	-0.10935	-0.43743
2004	0.022761	-0.04186	0.05035	-0.53289
2005	0.072529	0.603261	-0.12227	9.290939
2006	0.198167	0.201954	0.330208	0.070968
2007	0.001409	0.377512	0.279094	0.502356
2008	-0.17857	0.100677	0.310977	-0.12645
2009	0.017799	-0.03206	0.021472	-0.11883
2010	-0.08481	0.300162	0.094774	0.686065
2011	0.00678	0.066615	0.894877	-0.94385
2012	-0.1228	-0.03909	0.01801	-2.38992
2013	0.124863	0.265395	0.311619	1.659201
2014	0.037311	-0.00256	0.142578	2.156107
2015	0.032829	0.117788	0.208852	0.6081

Source: calculation



Appendix B. Unit Root Test

Appendix B.1 Augmented Dickey-Fuller Unit Root Test for Trade Balance Growth Rate

Null Hypothesis: GTB has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.913946	0.0005
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GTB)
Method: Least Squares
Date: 08/07/16 Time: 17:04
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GTB(-1)	-0.960618	0.195488	-4.913946	0.0000
C	0.227131	0.467162	0.486194	0.6309

R-squared	0.481523	Mean dependent var	0.048623
Adjusted R-squared	0.461581	S.D. dependent var	3.358689
S.E. of regression	2.464506	Akaike info criterion	4.710609
Sum squared resid	157.9185	Schwarz criterion	4.805766
Log likelihood	-63.94852	Hannan-Quinn criter.	4.739699
F-statistic	24.14686	Durbin-Watson stat	1.994253
Prob(F-statistic)	0.000042		

Appendix B.2 Augmented Dickey-Fuller Unit Root Test for Market Exchange Rate Growth Rate

Null Hypothesis: D(GMER) has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.850538	0.0000
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GMER,2)
Method: Least Squares
Date: 08/07/16 Time: 17:00
Sample (adjusted): 1991 2015
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GMER(-1))	-2.643582	0.385894	-6.850538	0.0000
D(GMER(-1),2)	1.112452	0.285919	3.890795	0.0008
D(GMER(-2),2)	0.618741	0.172570	3.585443	0.0017
C	-0.011809	0.054279	-0.217552	0.8299

R-squared	0.794544	Mean dependent var	0.001730
Adjusted R-squared	0.765193	S.D. dependent var	0.559765
S.E. of regression	0.271245	Akaike info criterion	0.374057
Sum squared resid	1.545048	Schwarz criterion	0.569077
Log likelihood	-0.675706	Hannan-Quinn criter.	0.428147
F-statistic	27.07055	Durbin-Watson stat	2.297372
Prob(F-statistic)	0.000000		

Appendix B.3 Augmented Dickey-Fuller Unit Root Test for Export Growth Rate

Null Hypothesis: GEX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.506281	0.0001
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GEX)
Method: Least Squares
Date: 08/06/16 Time: 15:19
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GEX(-1)	-0.893293	0.162232	-5.506281	0.0000
C	0.140401	0.045706	3.071810	0.0049

R-squared	0.538345	Mean dependent var	0.025285
Adjusted R-squared	0.520589	S.D. dependent var	0.310619
S.E. of regression	0.215071	Akaike info criterion	-0.166947
Sum squared resid	1.202645	Schwarz criterion	-0.071789
Log likelihood	4.337253	Hannan-Quinn criter.	-0.137856
F-statistic	30.31913	Durbin-Watson stat	2.301814
Prob(F-statistic)	0.000009		

Appendix B.4 Augmented Dickey-Fuller Unit Root Test for Import Growth Rate

Null Hypothesis: GIM has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.783139	0.0000
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GIM)
Method: Least Squares
Date: 08/07/16 Time: 16:10
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GIM(-1)	-1.188172	0.175166	-6.783139	0.0000
C	0.197935	0.071418	2.771487	0.0102

R-squared	0.638944	Mean dependent var	0.031511
Adjusted R-squared	0.625057	S.D. dependent var	0.579610
S.E. of regression	0.354910	Akaike info criterion	0.834844
Sum squared resid	3.274987	Schwarz criterion	0.930001
Log likelihood	-9.687811	Hannan-Quinn criter.	0.863934
F-statistic	46.01097	Durbin-Watson stat	2.106728
Prob(F-statistic)	0.000000		

Appendix C. Testing the Model

Appendix C.1 Estimation of Simple Switching Regression Model

Dependent Variable: GTB
Method: Switching Regression (Simple Switching)
Date: 08/06/16 Time: 11:28
Sample (adjusted): 1987 2015
Included observations: 29 after adjustments
Number of states: 2
Ordinary standard errors & covariance using numeric Hessian
Random search: 25 starting values with 10 iterations using 1 standard
deviation (rng=kn, seed=1711747897)
Convergence achieved after 21 iterations

Variable	Coefficient	Std. Error	z-Statistic	Prob.
		Regime 1		
GMER	-26.40294	6.023651	-4.383213	0.0000
GEX	26.53337	3.515041	7.548524	0.0000
GIM	2.040663	1.756246	1.161946	0.2453
C	-4.512489	1.247411	-3.617483	0.0003
		Regime 2		
GMER	-0.782448	0.729458	-1.072644	0.2834
GEX	-2.186205	0.916216	-2.386123	0.0170
GIM	4.133699	0.824671	5.012546	0.0000
C	0.232435	0.227835	1.020191	0.3076
		Common		
LOG(SIGMA)	-0.271772	0.164038	-1.656765	0.0976
		Probabilities Parameters		
P1-DUM	-1.905686	0.770833	-2.472242	0.0134

Mean dependent var	0.200388	S.D. dependent var	2.383778
S.E. of regression	3.673201	Sum squared resid	269.8481
Durbin-Watson stat	1.965914	Log likelihood	-44.94967
Akaike info criterion	3.789632	Schwarz criterion	4.261113
Hannan-Quinn criter.	3.937294		

Appendix C.2 Representation of Estimation

Estimation Command:
==========
SWITCHREG(SEED=1711747897,RNG=KN) GTB GMER GEX GIM C @PRV DUM

Estimation Equation:
==========
1: GTB = C(1)*GMER + C(2)*GEX + C(3)*GIM + C(4)

2: GTB = C(5)*GMER + C(6)*GEX + C(7)*GIM + C(8)

SIGMA = @EXP(C(9))

Substituted Coefficients:
==========
1: GTB = -26.4030567881*GMER + 26.5334789184*GEX + 2.04071618972*GIM - 4.51252811425

2: GTB = -0.782445876779*GMER - 2.18620822865*GEX + 4.13369116668*GIM + 0.232437432246

SIGMA = @EXP(-0.271771582258)

Appendix C.3 Transition result of Estimation

Equation: EQ01
Date: 08/08/16 Time: 20:26
Transition summary: Time-varying simple switching
transition probabilities and expected durations
Sample (adjusted): 1987 2015
Included observations: 29 after adjustments

Time-varying transition probabilities:
P(i, k) = P(s(t) = k | s(t-1) = i)
(row = i / column = j)

		1	2
Mean	1	0.180574	0.819426
	2	0.180574	0.819426

		1	2
Std. Dev.	1	0.130032	0.130032
	2	0.130032	0.130032

Time-varying expected durations:

	1	2
Mean	1.266138	6.934527
Std. Dev.	0.298741	2.008748

CURRICULUM VITAE

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