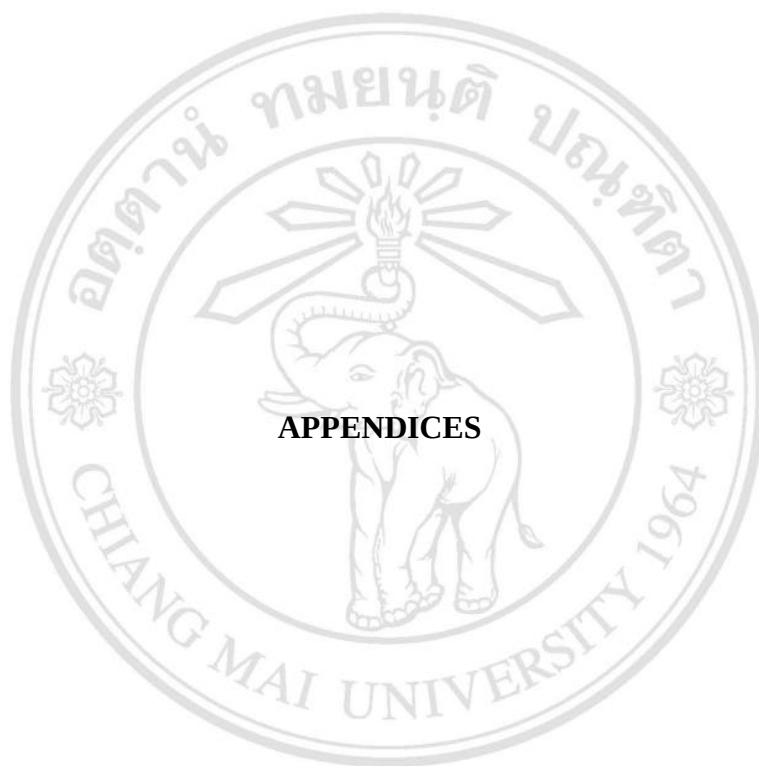
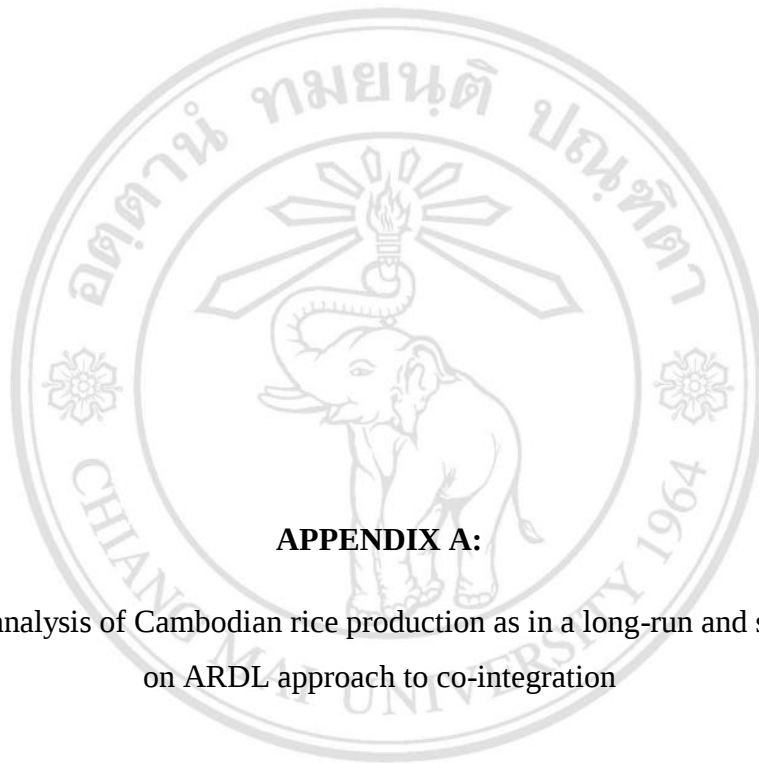




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APPENDIX A:

Results of the analysis of Cambodian rice production as in a long-run and short-run based on ARDL approach to co-integration

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Appendix A.1: The results of the analysis of Cambodian rice production as in a long-run based on ARDL approach

Dependent Variable: LNPR

Method: Least Squares

Date: 10/29/14 Time: 01:46

Sample (adjusted): 6 50

Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNPR(-1)	0.607403	0.182327	3.331400	0.0023
LNFE(-1)	-0.008580	0.010895	-0.787466	0.4372
LNFE(-2)	0.011867	0.011194	1.060133	0.2975
LNFE(-3)	8.92E-05	0.011348	0.007863	0.9938
LNFE(-4)	-0.030372	0.011891	-2.554201	0.0160
LNFE(-5)	0.026468	0.009764	2.710648	0.0110
LNHV(-1)	-0.382338	0.221484	-1.726253	0.0946
LNHV(-2)	0.297394	0.125924	2.361693	0.0249
LNIR(-1)	0.152943	0.085361	1.791713	0.0833
LNMA(-1)	-0.001659	0.011434	-0.145084	0.8856
LNMA(-2)	-0.246280	0.483976	-0.508867	0.6146
LNMA(-3)	1.143923	0.660717	1.731335	0.0937
LNMA(-4)	-1.015182	0.412104	-2.463413	0.0197
LNSD(-1)	1.355085	0.141077	9.605259	0.0000
LNSD(-2)	-0.781844	0.242699	-3.221455	0.0031
R-squared	0.962264	Mean dependent var	14.33772	
Adjusted R-squared	0.944653	S.D. dependent var	0.638438	
S.E. of regression	0.150198	Akaike info criterion	-0.692523	
Sum squared resid	0.676784	Schwarz criterion	-0.090302	
Log likelihood	30.58176	Hannan-Quinn criter.	-0.468021	
Durbin-Watson stat	2.283971			

Appendix A.2.: The results of Wald test for Cambodian rice production as in a long-run based on ARDL approach

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	2.397222	(6, 35)	0.0480
Chi-square	14.38333	6	0.0256

Null Hypothesis: $C(8)=C(9)=C(10)=C(11)=C(12)=C(13)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(8)	-0.430896	0.260105
C(9)	-0.008322	0.008892
C(10)	0.067153	0.367310
C(11)	0.134709	0.078135
C(12)	-0.040942	0.112191
C(13)	0.547180	0.191688

Restrictions are linear in coefficients.

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Appendix A.3: The results of the analysis of Cambodian rice production as in a short-run (VECM) based on ARDL approach

Dependent Variable: D(LNPR)

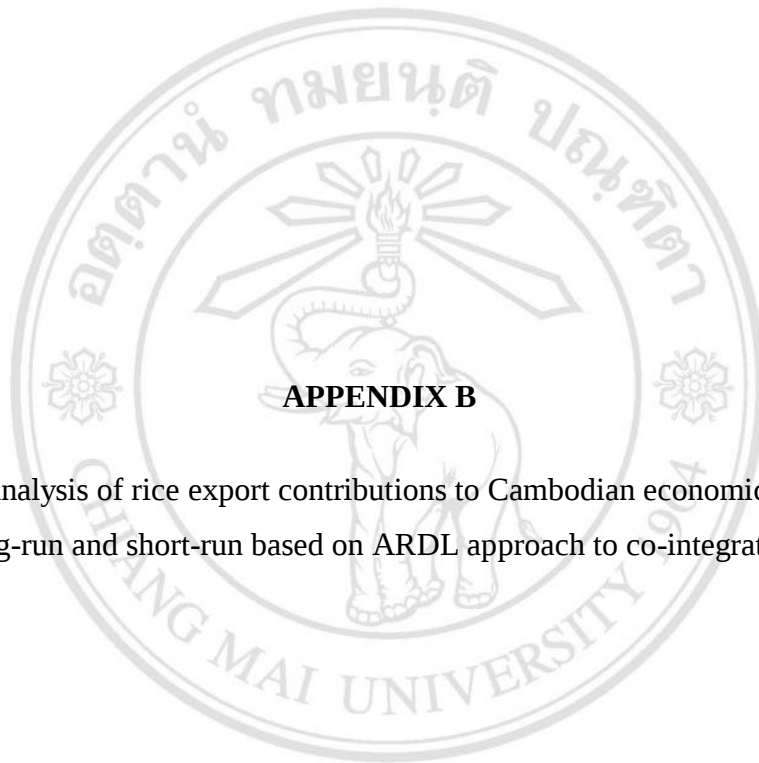
Method: Least Squares

Date: 08/02/14 Time: 14:58

Sample (adjusted): 4 50

Included observations: 47 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.042806	0.028080	1.524429	0.1355
D(LNPR(-1))	-0.449063	0.231899	-1.936456	0.0601
D(LNFE(-1))	0.001046	0.008388	0.124705	0.9014
D(LNHV(-1))	0.455486	0.323687	1.407181	0.1673
D(LNIR(-1))	-0.671951	0.357184	-1.881245	0.0674
D(LNMA(-1))	0.001776	0.010796	0.164463	0.8702
D(LNSD(-1))	1.170190	0.120465	9.713974	0.0000
ECM(-1)	-0.542408	0.195505	-2.774388	0.0084
R-squared	0.756104	Mean dependent var		0.024377
Adjusted R-squared	0.712328	S.D. dependent var		0.303832
S.E. of regression	0.162961	Akaike info criterion		-0.636776
Sum squared resid	1.035691	Schwarz criterion		-0.321858
Log likelihood	22.96425	Hannan-Quinn criter.		-0.518270
F-statistic	17.27205	Durbin-Watson stat		1.764697
Prob(F-statistic)	0.000000			



APPENDIX B

Results of the analysis of rice export contributions to Cambodian economic growth as in a long-run and short-run based on ARDL approach to co-integration

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Appendix B.1: The results of the analysis of rice export contributions to Cambodian economic growth as in a long-run based on ARDL approach

Dependent Variable: LNRGD

Method: Least Squares

Date: 10/29/14 Time: 12:59

Sample (adjusted): 2 15

Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGD(-1)	0.966369	0.029994	32.21910	0.0000
LNEXP(-1)	-0.017092	0.011296	-1.513046	0.1612
LNGFC(-1)	0.055372	0.035300	1.568613	0.1478
LNLAB(-1)	-0.006556	0.003594	-1.824503	0.0981
R-squared	0.995408	Mean dependent var	22.40710	
Adjusted R-squared	0.994031	S.D. dependent var	0.353356	
S.E. of regression	0.027300	Akaike info criterion	-4.128901	
Sum squared resid	0.007453	Schwarz criterion	-3.946313	
Log likelihood	32.90231	Hannan-Quinn criter.	-4.145803	
Durbin-Watson stat	2.412241			

Appendix B.2.: The results of Wald test of rice export contributions to Cambodian economic growth as in a long-run based on ARDL approach

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	2.690212	(4, 5)	0.1534
Chi-square	10.76085	4	0.0294

Null Hypothesis: $C(5)=C(6)=C(7)=C(8)=0$
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(5)	-0.061435	0.046221
C(6)	-0.028318	0.026785
C(7)	0.096983	0.063972
C(8)	-0.012164	0.005241

Restrictions are linear in coefficients.

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Appendix B.3: The results of the analysis of rice export contributions to Cambodian economic growth as in a short-run based on ARDL approach

Dependent Variable: D(LNRGD)

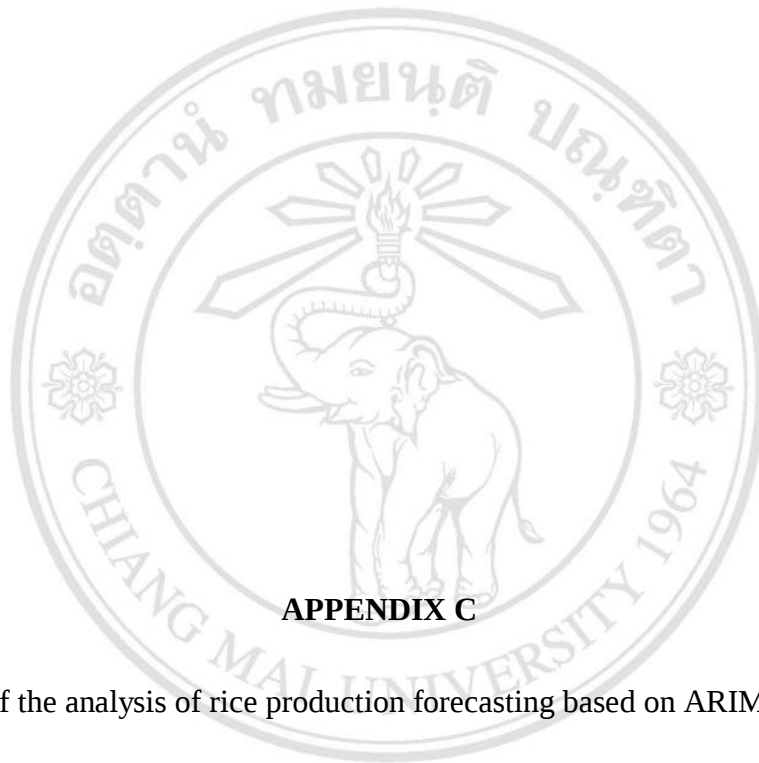
Method: Least Squares

Date: 08/14/14 Time: 22:33

Sample (adjusted): 4 15

Included observations: 12 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.052835	0.020776	2.543124	0.0517
D(LNRGD(-1))	0.406135	0.227207	1.787509	0.1339
D(LNCPI(-1))	-0.220987	0.104060	-2.123651	0.0871
D(LNEXP(-1))	-0.016769	0.007051	-2.378133	0.0633
D(LNGFC(-1))	0.062803	0.067394	0.931881	0.3942
D(LNLAB(-1))	0.002346	0.003532	0.664168	0.5360
ECM(-1)	-1.750491	0.689979	-2.537022	0.0521
R-squared	0.787131	Mean dependent var		0.080514
Adjusted R-squared	0.531689	S.D. dependent var		0.032195
S.E. of regression	0.022032	Akaike info criterion		-4.501414
Sum squared resid	0.002427	Schwarz criterion		-4.218551
Log likelihood	34.00848	Hannan-Quinn criter.		-4.606139
F-statistic	3.081445	Durbin-Watson stat		1.730717
Prob(F-statistic)	0.118716			



APPENDIX C

Results of the analysis of rice production forecasting based on ARIMA model

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APPENDIX C.1: AR1

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:32

Sample (adjusted): 1961 2013

Included observations: 53 after adjustments

Convergence achieved after 14 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2463202.	14693099	-0.167643	0.8675
AR(1)	1.013869	0.045432	22.31608	0.0000
R-squared	0.907105	Mean dependent var		1960264.
Adjusted R-squared	0.905284	S.D. dependent var		1118179.
S.E. of regression	344131.1	Akaike info criterion		28.37244
Sum squared resid	6.04E+12	Schwarz criterion		28.44679
Log likelihood	-749.8696	Hannan-Quinn criter.		28.40103
F-statistic	498.0074	Durbin-Watson stat		2.584228
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.01			
Estimated AR process is nonstationary				

APPENDIX C.2: AR2

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:42

Sample (adjusted): 1962 2013

Included observations: 52 after adjustments

Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	391787.1	1551980.	0.252443	0.8018
AR(1)	0.720715	0.135850	5.305210	0.0000
AR(2)	0.332909	0.145990	2.280352	0.0270
R-squared	0.915803	Mean dependent var		1968173.
Adjusted R-squared	0.912366	S.D. dependent var		1127591.
S.E. of regression	333801.1	Akaike info criterion		28.33044
Sum squared resid	5.46E+12	Schwarz criterion		28.44301
Log likelihood	-733.5914	Hannan-Quinn criter.		28.37360
F-statistic	266.4829	Durbin-Watson stat		1.943999
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.04	-.32		
Estimated AR process is nonstationary				

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APPENDIX C.3: MR1

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:44

Sample: 1960 2013

Included observations: 54

Convergence achieved after 44 iterations

MA Backcast: 1959

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1973693.	173890.3	11.35022	0.0000
MA(1)	0.771265	0.088902	8.675467	0.0000
R-squared	0.582885	Mean dependent var		1952074.
Adjusted R-squared	0.574864	S.D. dependent var		1109214.
S.E. of regression	723235.1	Akaike info criterion		29.85719
Sum squared resid	2.72E+13	Schwarz criterion		29.93086
Log likelihood	-804.1441	Hannan-Quinn criter.		29.88560
F-statistic	72.66587	Durbin-Watson stat		0.833072
Prob(F-statistic)	0.000000			
Inverted MA Roots	-.77			

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APPENDIX C.4: MR1

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:45

Sample: 1960 2013

Included observations: 54

Convergence achieved after 14 iterations

MA Backcast: 1958 1959

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1995648.	205052.0	9.732397	0.0000
MA(1)	0.981046	0.091868	10.67889	0.0000
MA(2)	0.750830	0.091663	8.191225	0.0000
R-squared	0.760916	Mean dependent var		1952074.
Adjusted R-squared	0.751540	S.D. dependent var		1109214.
S.E. of regression	552896.4	Akaike info criterion		29.33768
Sum squared resid	1.56E+13	Schwarz criterion		29.44818
Log likelihood	-789.1174	Hannan-Quinn criter.		29.38030
F-statistic	81.15692	Durbin-Watson stat		1.309033
Prob(F-statistic)	0.000000			
Inverted MA Roots	-.49-.71i	-.49+.71i		

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APPENDIX C.5: AR1 MA1

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 21:49

Sample (adjusted): 1961 2013

Included observations: 53 after adjustments

Convergence achieved after 17 iterations

MA Backcast: 1960

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	445263.5	1437696.	0.309706	0.7581
AR(1)	1.042105	0.035071	29.71395	0.0000
MA(1)	-0.274874	0.143466	-1.915953	0.0611
R-squared	0.914443	Mean dependent var		1960264.
Adjusted R-squared	0.911021	S.D. dependent var		1118179.
S.E. of regression	333545.2	Akaike info criterion		28.32788
Sum squared resid	5.56E+12	Schwarz criterion		28.43941
Log likelihood	-747.6889	Hannan-Quinn criter.		28.37077
F-statistic	267.2045	Durbin-Watson stat		2.066462
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.04			
	Estimated AR process is nonstationary			
Inverted MA Roots	.27			

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APPENDIX C.6: AR1MA2

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 22:52

Sample (adjusted): 1961 2013

Included observations: 53 after adjustments

Convergence achieved after 23 iterations

MA Backcast: 1959 1960

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-238255.8	3539750.	-0.067309	0.9466
AR(1)	1.028537	0.042844	24.00668	0.0000
MA(1)	-0.255562	0.144960	-1.762986	0.0841
MA(2)	0.171724	0.144700	1.186763	0.2410
R-squared	0.916196	Mean dependent var		1960264.
Adjusted R-squared	0.911065	S.D. dependent var		1118179.
S.E. of regression	333462.5	Akaike info criterion		28.34492
Sum squared resid	5.45E+12	Schwarz criterion		28.49362
Log likelihood	-747.1404	Hannan-Quinn criter.		28.40210
F-statistic	178.5663	Durbin-Watson stat		2.044484
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.03			
	Estimated AR process is nonstationary			
Inverted MA Roots	.13+.39i	.13-.39i		

APPENDIX C.7: AR2MA1

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:53

Sample (adjusted): 1962 2013

Included observations: 52 after adjustments

Convergence achieved after 21 iterations

MA Backcast: 1961

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	303630.8	1847271.	0.164367	0.8701
AR(1)	0.558319	0.397265	1.405408	0.1663
AR(2)	0.498008	0.403110	1.235415	0.2227
MA(1)	0.180370	0.441323	0.408703	0.6846
R-squared	0.916147	Mean dependent var		1968173.
Adjusted R-squared	0.910906	S.D. dependent var		1127591.
S.E. of regression	336569.3	Akaike info criterion		28.36480
Sum squared resid	5.44E+12	Schwarz criterion		28.51490
Log likelihood	-733.4848	Hannan-Quinn criter.		28.42234
F-statistic	174.8107	Durbin-Watson stat		1.987340
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.04	-.48		
	Estimated AR process is nonstationary			
Inverted MA Roots	-.18			

APPENDIX C.8: AR2MA2

Dependent Variable: PRO

Method: Least Squares

Date: 08/09/14 Time: 18:55

Sample (adjusted): 1962 2013

Included observations: 52 after adjustments

Convergence achieved after 49 iterations

MA Backcast: 1960 1961

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-309803.3	3850977.	-0.080448	0.9362
AR(1)	0.844428	0.617986	1.366419	0.1783
AR(2)	0.188967	0.646606	0.292245	0.7714
MA(1)	-0.086122	0.607638	-0.141733	0.8879
MA(2)	0.183222	0.214559	0.853947	0.3975
R-squared	0.916782	Mean dependent var		1968173.
Adjusted R-squared	0.909699	S.D. dependent var		1127591.
S.E. of regression	338842.2	Akaike info criterion		28.39567
Sum squared resid	5.40E+12	Schwarz criterion		28.58329
Log likelihood	-733.2874	Hannan-Quinn criter.		28.46760
F-statistic	129.4446	Durbin-Watson stat		2.001033
Prob(F-statistic)	0.000000			
Inverted AR Roots	1.03	-.18		
	Estimated AR process is nonstationary			
Inverted MA Roots	.04-.43i	.04+.43i		

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