

APPENDIX

1. Summary of Descriptive Statistics

	AID	FDI	GDK	real GDPpc	HK	LF	OFI
Mean	9.974817	1.357669	24.92143	167.6879	2.634798	28972.25	66.09828
Median	8.747637	0.662951	23.45276	147.3877	1.857956	26743.26	69.40296
Maximum	19.00572	5.392123	37.99373	315.7593	5.647911	46397.16	150.2854
Minimum	2.589076	0.001620	14.06571	113.8766	0.782165	17231.29	14.61635
Std. Dev.	4.133811	1.596594	7.001836	51.79054	1.581769	8669.662	37.68065
Skewness	0.349341	1.210424	0.166602	1.551891	0.853004	0.492357	0.568588
Kurtosis	2.556859	3.369326	1.829273	4.340621	2.144521	2.033559	2.516812
Jarque-Bera	0.969753	8.495617	2.098971	16.19353	5.159938	2.696863	2.162739
Probability	0.615773	0.014296	0.350118	0.000305	0.075776	0.259647	0.339131
Sum	339.1438	46.16075	847.3286	5701.387	89.58312	985056.7	2247.342
Sum Sq. Dev.	563.9169	84.12073	1617.848	88514.58	82.56580	2.48E+09	46854.44
Observations	34	34	34	34	34	34	34

2. The ARDL Estimates and Diagnostic tests

Autoregressive Distributed Lag Estimates

ARDL(1,2,2,1,1,2,2) selected based on Akaike Information Criterion

Dependent variable is LNGDPPC

32 observations used for estimation from 1983 to 2014

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
LNGDPPC(-1)	.15512	.14162	1.0953[.295]
LNGDK	.16746	.041463	4.0388[.002]
LNGDK(-1)	.15227	.048033	3.1700[.008]
LNGDK(-2)	.091805	.043298	2.1203[.056]
LNLF	2.6772	1.7511	1.5289[.152]
LNLF(-1)	.52592	1.1192	.46991[.647]
LNLF(-2)	1.0663	.81329	1.3111[.214]
LNHK	.095140	.062436	1.5238[.153]
LNHK(-1)	-.15288	.062871	-2.4316[.032]
LNAID	-.23220	.038921	-5.9659[.000]
LNAID(-1)	-.067925	.037263	-1.8229[.093]
LNFDI	.0012009	.0072981	.16455[.872]
LNFDI(-1)	-.016155	.0063950	-2.5263[.027]
LNFDI(-2)	-.014775	.0051627	-2.8619[.014]
LNOFI	.026169	.030162	.86761[.403]
LNOFI(-1)	-.025401	.036651	-.69305[.501]
LNOFI(-2)	-.043461	.023992	-1.8115[.095]
INPT	-37.9324	16.0826	-2.3586[.036]
TREND	-.11079	.050230	-2.2057[.048]
D	.16719	.099132	1.6866[.117]

R-Squared .99640 R-Bar-Squared .99070

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S.E. of Regression      .026389   F-stat.    F( 19, 12) 174.7421[.000]
Mean of Dependent Variable  5.0862   S.D. of Dependent Variable  .27359
Residual Sum of Squares  .0083568 Equation Log-likelihood      86.6006
Akaike Info. Criterion   66.6006   Schwarz Bayesian Criterion    51.9433
DW-statistic            2.1129   Durbin's h-statistic         -.53359[.594]
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Diagnostic Tests

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*      Test Statistics *      LM Version      *      F Version      *
*****
* A:Serial Correlation*CHSQ( 1)= .23416[.628]*F( 1, 11)= .081085[.781]*
*
* B:Functional Form *CHSQ( 1)= 1.9355[.164]*F( 1, 11)= .70815[.418]*
*
* C:Normality *CHSQ( 2)= 3.4516[.178]* Not applicable *
*
* D:Heteroscedasticity*CHSQ( 1)= 1.3513[.245]*F( 1, 30)= 1.3227[.259]*
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A:Lagrange multiplier test of residual serial correlation

B:Ramsey's RESET test using the square of the fitted values

C:Based on a test of skewness and kurtosis of residuals

D:Based on the regression of squared residuals on squared fitted values

3. ARDL Bound testing

ARDL Bounds Test

Sample: 1983 2014

Included observations: 32

Null Hypothesis: No long-run relationships exist

Test	Value	K
F-statistic	8.995230	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.53	3.59
5%	2.87	4
2.5%	3.19	4.38
1%	3.6	4.9

4. Results of the long-run ARDL Estimates

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Estimated Long Run Coefficients using the ARDL Approach
ARDL(1,2,2,1,1,2,2) selected based on Akaike Information Criterion
*****
Dependent variable is LNGDPPC
32 observations used for estimation from 1983 to 2014
*****
Regressor          Coefficient          Standard Error          T-Ratio[Prob]
LNGDK              .48708              .084023                5.7970[.000]
LNLF              5.0532              1.8374                 2.7502[.018]
LNHK              -.068337            .096890                -1.70531[.494]
LNAID             -.35523             .032820                -10.8235[.000]
LNFDI             -.035188            .010579                -3.3263[.006]
LNOFI            -.050531            .030696                -1.6462[.126]
INPT             -44.8967            17.8381                -2.5169[.027]
TREND            -.13113             .056600                -2.3168[.039]
D                .19789              .11948                 1.6563[.124]
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5. The Short Run Error Correction Representation

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Error Correction Representation for the Selected ARDL Model
ARDL(1,2,2,1,1,2,2) selected based on Akaike Information Criterion
*****
Dependent variable is dLNGDPPC
32 observations used for estimation from 1983 to 2014
*****
Regressor          Coefficient          Standard Error          T-Ratio[Prob]
dLNGDK            .16746              .041463                4.0388[.001]
dLNGDK1          -.091805            .043298                -2.1203[.048]
dLNLF            2.6772              1.7511                 1.5289[.144]
dLNLF1          -1.0663              .81329                 -1.3111[.206]
dLNHK            .095140             .062436                1.5238[.145]
dLNAID          -.23220             .038921                -5.9659[.000]
dLNFDI          .0012009            .0072981                .16455[.871]
dLNFDI1         .014775             .0051627                2.8619[.010]
dLNOFI          .026169             .030162                 .86761[.397]
dLNOFI1         .043461             .023992                 1.8115[.087]
dINPT           -37.9324            16.0826                -2.3586[.030]
dTREND          -.11079             .050230                -2.2057[.041]
dD              .16719              .099132                 1.6866[.109]
ecm(-1)         -.84488             .14162                 -5.9660[.000]
*****
List of additional temporary variables created:
dLNGDPPC = LNGDPPC-LNGDPPC(-1)
dLNGDK = LNGDK-LNGDK(-1)
dLNGDK1 = LNGDK(-1)-LNGDK(-2)
dLNLF = LNLF-LNLF(-1)
dLNLF1 = LNLF(-1)-LNLF(-2)
dLNHK = LNHK-LNHK(-1)
dLNAID = LNAID-LNAID(-1)
dLNFDI = LNFDI-LNFDI(-1)
dLNFDI1 = LNFDI(-1)-LNFDI(-2)
dLNOFI = LNOFI-LNOFI(-1)
dLNOFI1 = LNOFI(-1)-LNOFI(-2)

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dINPT = INPT-INPT(-1)
dTREND = TREND-TREND(-1)
dD = D-D(-1)
ecm = LNGDPPC   -.48708*LNGDK   -5.0532*LNLF + .068337*LNHK + .35523*LNAID
+ .035188*LNFDI + .050531*LNOFI + 44.8967*INPT + .13113*TREND -.19789*
D
*****
R-Squared          .94401      R-Bar-Squared      .85535
S.E. of Regression .026389    F-stat.           F( 13, 18) 15.5625[.000]
Mean of Dependent Variable .022166  S.D. of Dependent Variable .069386
Residual Sum of Squares .0083568  Equation Log-likelihood 86.6006
Akaike Info. Criterion 66.6006   Schwarz Bayesian Criterion 51.9433
DW-statistic       2.1129
*****
R-Squared and R-Bar-Squared measures refer to the dependent variable
dLNGDPPC and in cases where the error correction model is highly
restricted, these measures could become negative.

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6. The Pairwise Granger Causality Tests the ARDL model

Pairwise Granger Causality Tests

Sample: 1981 2014

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGDK does not Granger Cause LNGDPPC	32	1.50544	0.2400
LNGDPPC does not Granger Cause LNGDK		0.64678	0.5317
LNLF does not Granger Cause LNGDPPC	32	4.60902	0.0190
LNGDPPC does not Granger Cause LNLF		1.06471	0.3589
LNHK does not Granger Cause LNGDPPC	32	2.13662	0.1376
LNGDPPC does not Granger Cause LNHK		0.17159	0.8432
LNAID does not Granger Cause LNGDPPC	32	3.35151	0.0501
LNGDPPC does not Granger Cause LNAID		0.54341	0.5870
LNFDI does not Granger Cause LNGDPPC	32	3.61604	0.0406
LNGDPPC does not Granger Cause LNFDI		3.61532	0.0406
LNOFI does not Granger Cause LNGDPPC	32	0.37266	0.6924
LNGDPPC does not Granger Cause LNOFI		0.68922	0.5106
LNLF does not Granger Cause LNGDK	32	3.06659	0.0631
LNGDK does not Granger Cause LNLF		3.58093	0.0417
LNHK does not Granger Cause LNGDK	32	1.42655	0.2577
LNGDK does not Granger Cause LNHK		1.68659	0.2041
LNAID does not Granger Cause LNGDK	32	0.95529	0.3973
LNGDK does not Granger Cause LNAID		0.35418	0.7050

LNFDI does not Granger Cause LNGDK	32	0.90815	0.4152
LNGDK does not Granger Cause LNFDI		2.04987	0.1483
LNNOFI does not Granger Cause LNGDK	32	0.14743	0.8636
LNGDK does not Granger Cause LNNOFI		2.81121	0.0778
LNHK does not Granger Cause LNLF	32	0.85635	0.4359
LNLF does not Granger Cause LNHK		2.64772	0.0891
LNAID does not Granger Cause LNLF	32	0.19549	0.8236
LNLF does not Granger Cause LNAID		0.01600	0.9841
LNFDI does not Granger Cause LNLF	32	0.05880	0.9430
LNLF does not Granger Cause LNFDI		2.02147	0.1520
LNNOFI does not Granger Cause LNLF	32	0.01719	0.9830
LNLF does not Granger Cause LNNOFI		1.95991	0.1604
LNAID does not Granger Cause LNHK	32	0.56210	0.5765
LNHK does not Granger Cause LNAID		0.08449	0.9192
LNFDI does not Granger Cause LNHK	32	3.02146	0.0654
LNHK does not Granger Cause LNFDI		0.31285	0.7340
LNNOFI does not Granger Cause LNHK	32	0.12296	0.8848
LNHK does not Granger Cause LNNOFI		0.86307	0.4332
LNFDI does not Granger Cause LNAID	32	0.38732	0.6826
LNAID does not Granger Cause LNFDI		1.64883	0.2111
LNNOFI does not Granger Cause LNAID	32	0.09815	0.9068
LNAID does not Granger Cause LNNOFI		0.84876	0.4390
LNNOFI does not Granger Cause LNFDI	32	0.05000	0.9513
LNFDI does not Granger Cause LNNOFI		3.16733	0.0581

Pairwise Granger Causality Tests

Sample: 1981 2014

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGDK does not Granger Cause LNGDPPC	33	3.74296	0.0625
LNGDPPC does not Granger Cause LNGDK		1.58673	0.2175
LNLF does not Granger Cause LNGDPPC	33	7.47425	0.0104
LNGDPPC does not Granger Cause LNLF		0.23176	0.6337
LNHK does not Granger Cause LNGDPPC	33	5.62348	0.0243
LNGDPPC does not Granger Cause LNHK		0.05740	0.8123
LNAID does not Granger Cause LNGDPPC	33	6.37431	0.0171
LNGDPPC does not Granger Cause LNAID		0.78271	0.3833

LNFDI does not Granger Cause LNGDPPC	33	0.08225	0.7762
LNGDPPC does not Granger Cause LNFDI		0.51774	0.4774
LNNOFI does not Granger Cause LNGDPPC	33	0.30314	0.5860
LNGDPPC does not Granger Cause LNNOFI		1.03505	0.3171
LNLNF does not Granger Cause LNGDK	33	9.14166	0.0051
LNGDK does not Granger Cause LNLNF		5.94857	0.0209
LNHNK does not Granger Cause LNGDK	33	5.38722	0.0273
LNGDK does not Granger Cause LNHNK		3.95915	0.0558
LNAID does not Granger Cause LNGDK	33	1.98795	0.1688
LNGDK does not Granger Cause LNAID		0.10864	0.7440
LNFDI does not Granger Cause LNGDK	33	0.05505	0.8161
LNGDK does not Granger Cause LNFDI		2.58641	0.1183
LNNOFI does not Granger Cause LNGDK	33	0.82543	0.3708
LNGDK does not Granger Cause LNNOFI		5.88098	0.0215
LNHNK does not Granger Cause LNLNF	33	0.10909	0.7435
LNLNF does not Granger Cause LNHNK		3.14681	0.0862
LNAID does not Granger Cause LNLNF	33	0.00096	0.9755
LNLNF does not Granger Cause LNAID		0.00913	0.9245
LNFDI does not Granger Cause LNLNF	33	0.00254	0.9601
LNLNF does not Granger Cause LNFDI		3.95335	0.0560
LNNOFI does not Granger Cause LNLNF	33	0.01204	0.9134
LNLNF does not Granger Cause LNNOFI		5.86391	0.0217
LNAID does not Granger Cause LNHNK	33	0.52728	0.4734
LNHNK does not Granger Cause LNAID		0.09254	0.7631
LNFDI does not Granger Cause LNHNK	33	4.27737	0.0473
LNHNK does not Granger Cause LNFDI		0.64617	0.4278
LNNOFI does not Granger Cause LNHNK	33	0.10417	0.7491
LNHNK does not Granger Cause LNNOFI		4.06472	0.0528
LNFDI does not Granger Cause LNAID	33	2.25485	0.1436
LNAID does not Granger Cause LNFDI		1.05330	0.3130
LNNOFI does not Granger Cause LNAID	33	0.37069	0.5472
LNAID does not Granger Cause LNNOFI		4.26072	0.0477
LNNOFI does not Granger Cause LNFDI	33	0.00166	0.9677
LNFDI does not Granger Cause LNNOFI		10.0608	0.0035