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Appendix

Appendix 1 National saving ADF test constant and trend Level

Null Hypothesis: NS has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.088843	0.0161
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(NS)
Method: Least Squares
Date: 07/14/18 Time: 22:33
Sample (adjusted): 1985 2014
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NS(-1)	-1.143683	0.279708	-4.088843	0.0004
D(NS(-1))	0.308635	0.248940	1.239798	0.2270
D(NS(-2))	0.542044	0.221887	2.442886	0.0223
D(NS(-3))	0.444776	0.174411	2.550165	0.0176
C	25.61404	6.670522	3.839886	0.0008
@TREND("1981")	-0.597174	0.174080	-3.430465	0.0022

R-squared	0.542448	Mean dependent var	-0.307207
Adjusted R-squared	0.447124	S.D. dependent var	6.265587
S.E. of regression	4.658816	Akaike info criterion	6.092256
Sum squared resid	520.9097	Schwarz criterion	6.372496
Log likelihood	-85.38384	Hannan-Quinn criter.	6.181907
F-statistic	5.690600	Durbin-Watson stat	2.065388
Prob(F-statistic)	0.001342		

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Appendix 2 Real GDP Growth ADF test constant Level

Null Hypothesis: RGDP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.471865	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDP)
Method: Least Squares
Date: 05/17/18 Time: 17:02
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	-1.654702	0.174696	-9.471865	0.0000
D(RGDP(-1))	0.346384	0.111182	3.115459	0.0041
C	5.866344	0.874086	6.711400	0.0000

R-squared	0.780538	Mean dependent var	-0.295566
Adjusted R-squared	0.765403	S.D. dependent var	6.479603
S.E. of regression	3.138411	Akaike info criterion	5.214370
Sum squared resid	285.6391	Schwarz criterion	5.351783
Log likelihood	-80.42993	Hannan-Quinn criter.	5.259919
F-statistic	51.57069	Durbin-Watson stat	1.874816
Prob(F-statistic)	0.000000		

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Appendix 3 Debt ADF test constant & trend Level

Null Hypothesis: DEBT has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.459611	0.3446
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDEBT)
Method: Least Squares
Date: 05/17/18 Time: 17:05
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEBT(-1)	-0.341713	0.138930	-2.459611	0.0199
C	43.06912	18.23400	2.362023	0.0249
@TREND("1981")	-0.794215	0.427480	-1.857902	0.0730

R-squared	0.175878	Mean dependent var	-2.003755
Adjusted R-squared	0.120937	S.D. dependent var	20.75553
S.E. of regression	19.46005	Akaike info criterion	8.861113
Sum squared resid	11360.81	Schwarz criterion	8.997159
Log likelihood	-143.2084	Hannan-Quinn criter.	8.906888
F-statistic	3.201190	Durbin-Watson stat	2.218484
Prob(F-statistic)	0.054938		

Appendix 4 Debt ADF test constant and trend 1st Difference

Null Hypothesis: D(DEBT) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.470163	0.0000
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEBT,2)
Method: Least Squares
Date: 05/17/18 Time: 17:08
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DEBT(-1))	-1.315026	0.176037	-7.470163	0.0000
C	1.478052	7.798529	0.189530	0.8510
@TREND("1981")	-0.248972	0.395649	-0.629276	0.5341

R-squared	0.658070	Mean dependent var	-0.336031
Adjusted R-squared	0.634488	S.D. dependent var	34.01928
S.E. of regression	20.56723	Akaike info criterion	8.974335
Sum squared resid	12267.32	Schwarz criterion	9.111748
Log likelihood	-140.5894	Hannan-Quinn criter.	9.019883
F-statistic	27.90631	Durbin-Watson stat	1.871414
Prob(F-statistic)	0.000000		

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Appendix 5 Inflation ADF constant and trend Level

Null Hypothesis: INF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.728988	0.0342
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF)
Method: Least Squares
Date: 05/17/18 Time: 17:10
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF(-1)	-0.612405	0.164228	-3.728988	0.0008
C	11.21109	4.157775	2.696415	0.0114
@TREND("1981")	-0.323144	0.173879	-1.858439	0.0729

R-squared	0.317628	Mean dependent var	3.47E-16
Adjusted R-squared	0.272136	S.D. dependent var	10.01146
S.E. of regression	8.541273	Akaike info criterion	7.214205
Sum squared resid	2188.600	Schwarz criterion	7.350251
Log likelihood	-116.0344	Hannan-Quinn criter.	7.259980
F-statistic	6.982134	Durbin-Watson stat	2.049547
Prob(F-statistic)	0.003238		

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Appendix 6 Real Interest rate ADF Test constant & trend Level

Null Hypothesis: INTR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.373107	0.0015
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INTR)
Method: Least Squares
Date: 05/17/18 Time: 17:15
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR(-1)	-0.763935	0.174689	-4.373107	0.0001
C	11.68321	3.697755	3.159541	0.0035

R-squared	0.381535	Mean dependent var	0.081818
Adjusted R-squared	0.361584	S.D. dependent var	18.52010
S.E. of regression	14.79773	Akaike info criterion	8.285517
Sum squared resid	6788.161	Schwarz criterion	8.376214
Log likelihood	-134.7110	Hannan-Quinn criter.	8.316034
F-statistic	19.12407	Durbin-Watson stat	2.038322
Prob(F-statistic)	0.000128		

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Appendix 7 Financial Development ADF Test constant & trend Level

Null Hypothesis: FD has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.054358	0.9218
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FD)
Method: Least Squares
Date: 05/17/18 Time: 17:23
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FD(-1)	-0.058189	0.055189	-1.054358	0.3001
C	-0.734019	1.301277	-0.564076	0.5769
@TREND("1981")	0.192938	0.078601	2.454643	0.0201

R-squared	0.181603	Mean dependent var	0.934903
Adjusted R-squared	0.127043	S.D. dependent var	3.416369
S.E. of regression	3.191988	Akaike info criterion	5.245673
Sum squared resid	305.6636	Schwarz criterion	5.381719
Log likelihood	-83.55360	Hannan-Quinn criter.	5.291448
F-statistic	3.328507	Durbin-Watson stat	2.220289
Prob(F-statistic)	0.049484		

Appendix 8 Financial Development ADF Test constant &trend 1st Difference

Null Hypothesis: D(FD) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.248361	0.0001
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FD,2)
Method: Least Squares
Date: 05/17/18 Time: 17:28
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FD(-1))	-1.152442	0.184439	-6.248361	0.0000
C	-1.903746	1.271255	-1.497533	0.1451
@TREND("1981")	0.171198	0.068241	2.508727	0.0180

R-squared	0.573817	Mean dependent var	0.007556
Adjusted R-squared	0.544425	S.D. dependent var	4.814896
S.E. of regression	3.249875	Akaike info criterion	5.284170
Sum squared resid	306.2889	Schwarz criterion	5.421583
Log likelihood	-81.54672	Hannan-Quinn criter.	5.329718
F-statistic	19.52297	Durbin-Watson stat	1.958898
Prob(F-statistic)	0.000004		

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Appendix 9 Foreign Aid ADF constant and trend level

Null Hypothesis: FAID has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.158163	0.4944
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FAID)
Method: Least Squares
Date: 07/14/18 Time: 22:58
Sample (adjusted): 1985 2014
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FAID(-1)	-0.339159	0.157152	-2.158163	0.0411
D(FAID(-1))	-0.059888	0.205593	-0.291295	0.7733
D(FAID(-2))	0.174198	0.202042	0.862189	0.3971
D(FAID(-3))	0.425045	0.180232	2.358317	0.0268
C	9.216750	5.622399	1.639291	0.1142
@TREND("1981")	-0.221055	0.184738	-1.196588	0.2432

R-squared	0.335272	Mean dependent var	-0.553937
Adjusted R-squared	0.196787	S.D. dependent var	7.296029
S.E. of regression	6.538858	Akaike info criterion	6.770259
Sum squared resid	1026.160	Schwarz criterion	7.050498
Log likelihood	-95.55388	Hannan-Quinn criter.	6.859910
F-statistic	2.421000	Durbin-Watson stat	2.057982
Prob(F-statistic)	0.065186		

Appendix 10 Foreign Aid ADF constant and trend level 1st Difference

Null Hypothesis: D(FAID) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.497919	0.0000
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FAID,2)
Method: Least Squares
Date: 07/14/18 Time: 23:00
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FAID(-1))	-1.298941	0.173240	-7.497919	0.0000
C	-1.010523	2.720564	-0.371439	0.7130
@TREND("1981")	0.030705	0.137140	0.223892	0.8244

R-squared	0.660278	Mean dependent var	0.278574
Adjusted R-squared	0.636848	S.D. dependent var	11.84761
S.E. of regression	7.139610	Akaike info criterion	6.858253
Sum squared resid	1478.247	Schwarz criterion	6.995666
Log likelihood	-106.7321	Hannan-Quinn criter.	6.903802
F-statistic	28.18191	Durbin-Watson stat	2.133178
Prob(F-statistic)	0.000000		

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Appendix 11 Remittances ADF test constant and trend level

Null Hypothesis: REMIT has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.066577	0.9197
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REMIT)
Method: Least Squares
Date: 05/17/18 Time: 17:40
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REMIT(-1)	-0.122180	0.114553	-1.066577	0.2947
C	-1.058687	0.899072	-1.177533	0.2482
@TREND("1981")	0.128228	0.066596	1.925454	0.0637

R-squared	0.126793	Mean dependent var	0.640909
Adjusted R-squared	0.068579	S.D. dependent var	2.248722
S.E. of regression	2.170245	Akaike info criterion	4.474065
Sum squared resid	141.2989	Schwarz criterion	4.610111
Log likelihood	-70.82208	Hannan-Quinn criter.	4.519841
F-statistic	2.178059	Durbin-Watson stat	1.926927
Prob(F-statistic)	0.130845		

Appendix 12 Remittances ADF test constant and trend 1st Difference

Null Hypothesis: D(REMIT) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.660508	0.0003
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(REMIT,2)
Method: Least Squares
Date: 05/17/18 Time: 17:41
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(REMIT(-1))	-1.049941	0.185485	-5.660508	0.0000
C	-0.665737	0.859383	-0.774668	0.4448
@TREND("1981")	0.077653	0.045114	1.721239	0.0959

R-squared	0.524912	Mean dependent var	0.041563
Adjusted R-squared	0.492148	S.D. dependent var	3.149125
S.E. of regression	2.244185	Akaike info criterion	4.543622
Sum squared resid	146.0546	Schwarz criterion	4.681034
Log likelihood	-69.69795	Hannan-Quinn criter.	4.589170
F-statistic	16.02068	Durbin-Watson stat	2.015614
Prob(F-statistic)	0.000021		

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Appendix 13 Trade ADF Test constant and trend Level

Null Hypothesis: TRAD has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.772981	0.2165
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TRAD)
Method: Least Squares
Date: 05/17/18 Time: 17:43
Sample (adjusted): 1982 2014
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRAD(-1)	-0.393014	0.141730	-2.772981	0.0095
C	48.89067	17.95615	2.722782	0.0107
@TREND("1981")	-0.790556	0.331686	-2.383443	0.0237

R-squared	0.210194	Mean dependent var	-1.454435
Adjusted R-squared	0.157540	S.D. dependent var	13.62174
S.E. of regression	12.50280	Akaike info criterion	7.976291
Sum squared resid	4689.602	Schwarz criterion	8.112337
Log likelihood	-128.6088	Hannan-Quinn criter.	8.022066
F-statistic	3.992002	Durbin-Watson stat	2.230299
Prob(F-statistic)	0.029027		

Appendix 14 Trade ADF Test constant and trend 1st Difference

Null Hypothesis: D(TRAD) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.828085	0.0000
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TRAD,2)
Method: Least Squares
Date: 05/17/18 Time: 17:52
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TRAD(-1))	-1.347693	0.172161	-7.828085	0.0000
C	2.294815	5.001577	0.458818	0.6498
@TREND("1981")	-0.224425	0.253370	-0.885761	0.3830

R-squared	0.679169	Mean dependent var	0.103830
Adjusted R-squared	0.657043	S.D. dependent var	22.54088
S.E. of regression	13.20051	Akaike info criterion	8.087449
Sum squared resid	5053.353	Schwarz criterion	8.224861
Log likelihood	-126.3992	Hannan-Quinn criter.	8.132997
F-statistic	30.69515	Durbin-Watson stat	2.186526
Prob(F-statistic)	0.000000		

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Appendix 15 Dependency ratio ADF Test constant and trend Level

Null Hypothesis: DEPENDCY_RATIO has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.037048	0.5596
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEPENDCY_RATIO)
Method: Least Squares
Date: 05/17/18 Time: 17:57
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEPENDCY_RATIO(-1)	-0.222537	0.109245	-2.037048	0.0512
D(DEPENDCY_RATIO(-1...	0.380197	0.157188	2.418746	0.0223
C	21.79166	10.65918	2.044402	0.0504
@TREND("1981")	-0.026555	0.012023	-2.208689	0.0356

R-squared	0.307571	Mean dependent var	-0.101657
Adjusted R-squared	0.233383	S.D. dependent var	0.487854
S.E. of regression	0.427149	Akaike info criterion	1.253101
Sum squared resid	5.108776	Schwarz criterion	1.436318
Log likelihood	-16.04962	Hannan-Quinn criter.	1.313832
F-statistic	4.145796	Durbin-Watson stat	1.785313
Prob(F-statistic)	0.014987		

Appendix 16 Dependency ratio ADF Test constant and trend 1st Difference

Null Hypothesis: D(DEPENDCY_RATIO) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.163754	0.0130
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DEPENDCY_RATIO,2)
Method: Least Squares
Date: 05/17/18 Time: 17:58
Sample (adjusted): 1983 2014
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DEPENDCY_RATIO(-1...	-0.677740	0.162771	-4.163754	0.0003
C	0.081114	0.177908	0.455930	0.6518
@TREND("1981")	-0.009757	0.009212	-1.059123	0.2983

R-squared	0.376870	Mean dependent var	-0.064338
Adjusted R-squared	0.333896	S.D. dependent var	0.551058
S.E. of regression	0.449747	Akaike info criterion	1.328795
Sum squared resid	5.865891	Schwarz criterion	1.466208
Log likelihood	-18.26073	Hannan-Quinn criter.	1.374344
F-statistic	8.769635	Durbin-Watson stat	1.838951
Prob(F-statistic)	0.001050		

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Appendix 17 Estimates of the Short run and Bound test of the ARDL Model

ARDL Error Correction Regression
Dependent Variable: D(NS)
Selected Model: ARDL(2, 2, 1, 2, 2, 2, 1, 1, 0, 1)
Case 2: Restricted Constant and No Trend
Date: 07/12/18 Time: 13:12
Sample: 1981 2014
Included observations: 32

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NS(-1))	-0.271331	0.059400	-4.567852	0.0018
D(RGDP)	0.381992	0.058401	6.540889	0.0002
D(RGDP(-1))	-0.621807	0.064545	-9.633728	0.0000
D(GDEBT)	0.383377	0.027077	14.15886	0.0000
D(INF)	-0.818952	0.079304	-10.32678	0.0000
D(INF(-1))	0.461671	0.046560	9.915572	0.0000
D(INTR)	-0.141492	0.031075	-4.553178	0.0019
D(INTR(-1))	0.179934	0.025189	7.143389	0.0001
D(FD)	-0.701255	0.108044	-6.490455	0.0002
D(FD(-1))	0.405075	0.126735	3.196221	0.0127
D(FAID)	0.161736	0.084831	1.906571	0.0930
D(REMIT)	-0.028257	0.160344	-0.176228	0.8645
D(DEPENDCY RATIO)	3.261534	0.698168	4.671562	0.0016
CointEq(-1)*	-0.737010	0.046689	-15.78552	0.0000

R-squared	0.956271	Mean dependent var	-0.473765
Adjusted R-squared	0.924688	S.D. dependent var	6.108124
S.E. of regression	1.676251	Akaike info criterion	4.170633
Sum squared resid	50.57673	Schwarz criterion	4.811892
Log likelihood	-52.73012	Hannan-Quinn criter.	4.383192
Durbin-Watson stat	1.979703		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	10.06798	10%	1.8	2.8
k	9	5%	2.04	2.08
		2.5%	2.24	3.35
		1%	2.5	3.68

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Appendix 18 Estimates of the Long run ARDL Model

ARDL Long Run Form and Bounds Test
Dependent Variable: D(NS)
Selected Model: ARDL(2, 2, 1, 2, 2, 2, 1, 1, 0, 1)
Case 2: Restricted Constant and No Trend
Date: 07/14/18 Time: 23:37
Sample: 1981 2014
Included observations: 32

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1130.029	167.1266	-6.761513	0.0001
NS(-1)*	-0.737010	0.212627	-3.466210	0.0085
RGDP(-1)	1.308539	0.482270	2.713290	0.0265
GDEBT(-1)	0.449249	0.082572	5.440726	0.0006
INF(-1)	-2.074133	0.534984	-3.876996	0.0047
INTR(-1)	-0.757095	0.264425	-2.863176	0.0210
FD(-1)	0.347625	0.273853	1.269386	0.2400
FAID(-1)	1.049437	0.314051	3.341610	0.0102
REMIT(-1)	1.730242	0.452157	3.826641	0.0050
TRAD**	-0.264336	0.145317	-1.819031	0.1064
DEPENDCY_RATIO(-1)	11.59566	1.776403	6.527608	0.0002
D(NS(-1))	-0.271331	0.138406	-1.960401	0.0856
D(RGDP)	0.381992	0.228860	1.669105	0.1336
D(RGDP(-1))	-0.621807	0.138904	-4.476517	0.0021
D(GDEBT)	0.383377	0.088169	4.348224	0.0025
D(INF)	-0.818952	0.276062	-2.966555	0.0180
D(INF(-1))	0.461671	0.152286	3.031615	0.0163
D(INTR)	-0.141492	0.089492	-1.581057	0.1525
D(INTR(-1))	0.179934	0.090540	1.987342	0.0821
D(FD)	-0.701255	0.379187	-1.849365	0.1016
D(FD(-1))	0.405075	0.409737	0.988621	0.3518
D(FAID)	0.161736	0.183471	0.881535	0.4037
D(REMIT)	-0.028257	0.317313	-0.089051	0.9312
D(DEPENDCY_RATIO)	3.261534	2.059885	1.583357	0.1520

* p-value incompatible with t-Bounds distribution.
** Variable interpreted as Z = Z(-1) + D(Z).

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP	1.775470	0.806260	2.202106	0.0588
GDEBT	0.609557	0.224887	2.710505	0.0266
INF	-2.814254	1.313399	-2.142726	0.0645
INTR	-1.027253	0.564895	-1.818485	0.1065
FD	0.471669	0.363885	1.296202	0.2310
FAID	1.423912	0.707804	2.011733	0.0791
REMIT	2.347652	1.068101	2.197968	0.0592
TRAD	-0.358660	0.274934	-1.304529	0.2283
DEPENDCY_RATIO	15.73339	5.476722	2.872775	0.0207
C	-1533.262	521.1376	-2.942143	0.0186

EC = NS - (1.7755*RGDP + 0.6096*GDEBT -2.8143*INF -1.0273*INTR + 0.4717*FD + 1.4239*FAID + 2.3477*REMIT -0.3587*TRAD + 15.7334 *DEPENDCY_RATIO -1533.2617)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	10.06798	10%	1.8	2.8
k	9	5%	2.04	2.08
		2.5%	2.24	3.35
		1%	2.5	3.68
Actual Sample Size	32		Finite Sample: n=35	
		10%	-1	-1
		5%	-1	-1
		1%	-1	-1
			Finite Sample: n=30	
		10%	-1	-1
		5%	-1	-1
		1%	-1	-1

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Appendix 19 Breusch Godfrey for Serial Correlation LM test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.000273	Prob. F(1,7)	0.9873
Obs*R-squared	0.001247	Prob. Chi-Square(1)	0.9718

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 05/16/18 Time: 13:03
Sample: 1983 2014
Included observations: 32
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NS(-1)	-0.000759	0.217529	-0.003491	0.9973
NS(-2)	0.000147	0.148228	0.000994	0.9992
RGDP	0.001819	0.268313	0.006781	0.9948
RGDP(-1)	0.001114	0.228157	0.004884	0.9962
RGDP(-2)	0.001269	0.167207	0.007592	0.9942
GDEBT	0.000715	0.103726	0.006895	0.9947
GDEBT(-1)	6.34E-05	0.075561	0.000838	0.9994
INF	-0.000823	0.299295	-0.002750	0.9979
INF(-1)	-0.001310	0.212044	-0.006176	0.9952
INF(-2)	-0.000655	0.167561	-0.003910	0.9970
INTR	-0.000270	0.097058	-0.002784	0.9979
INTR(-1)	-0.000294	0.147536	-0.001991	0.9985
INTR(-2)	-0.000387	0.099586	-0.003886	0.9970
FD	-0.001460	0.414884	-0.003518	0.9973
FD(-1)	0.001288	0.579785	0.002222	0.9983
FD(-2)	0.001555	0.448027	0.003472	0.9973
FAID	0.000128	0.196288	0.000653	0.9995
FAID(-1)	0.000796	0.264511	0.003010	0.9977
REMIT	0.000185	0.339401	0.000545	0.9996
REMIT(-1)	0.000852	0.537948	0.001583	0.9988
TRAD	-0.000236	0.156001	-0.001511	0.9988
DEPENDCY RATIO	-0.004165	2.216458	-0.001879	0.9986
DEPENDCY RATIO(-1...	0.015624	2.657563	0.005879	0.9955
C	-1.172897	192.2590	-0.006101	0.9953
RESID(-1)	0.009222	0.558362	0.016516	0.9873

R-squared	0.000039	Mean dependent var	-7.82E-14
Adjusted R-squared	-3.428399	S.D. dependent var	1.277305
S.E. of regression	2.687930	Akaike info criterion	4.858094
Sum squared resid	50.57476	Schwarz criterion	6.003200
Log likelihood	-52.72950	Hannan-Quinn criter.	5.237664
F-statistic	1.14E-05	Durbin-Watson stat	1.983804
Prob(F-statistic)	1.000000		

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Appendix 20 Breusch Pagan Godfrey for Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.124092	Prob. F(23,8)	0.4596
Obs*R-squared	24.43814	Prob. Chi-Square(23)	0.3799
Scaled explained SS	2.268788	Prob. Chi-Square(23)	1.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/16/18 Time: 13:07
Sample: 1983 2014
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-361.0591	176.0448	-2.050950	0.0744
NS(-1)	-0.355143	0.209499	-1.695208	0.1285
NS(-2)	0.213740	0.145791	1.466067	0.1808
RGDP	-0.129832	0.241073	-0.538558	0.6048
RGDP(-1)	-0.128863	0.214759	-0.600036	0.5651
RGDP(-2)	0.144207	0.146316	0.985587	0.3532
GDEBT	0.048677	0.092873	0.524123	0.6144
GDEBT(-1)	0.134668	0.074358	1.811073	0.1077
INF	-0.119949	0.290793	-0.412489	0.6908
INF(-1)	-0.355174	0.193779	-1.832880	0.1042
INF(-2)	-0.073809	0.160412	-0.460125	0.6577
INTR	0.050670	0.094267	0.537516	0.6055
INTR(-1)	0.038210	0.144315	0.264768	0.7979
INTR(-2)	-0.070137	0.095371	-0.735410	0.4831
FD	-0.597875	0.399421	-1.496856	0.1728
FD(-1)	-0.082822	0.566098	-0.146303	0.8873
FD(-2)	1.204285	0.431601	2.790274	0.0235
FAID	-0.066762	0.193261	-0.345449	0.7387
FAID(-1)	0.051940	0.256271	0.202674	0.8444
REMIT	0.469167	0.334246	1.403658	0.1980
REMIT(-1)	-0.612869	0.527626	-1.161560	0.2789
TRAD	-0.049456	0.153071	-0.323093	0.7549
DEPENDCY RATIO	0.155393	2.169804	0.071616	0.9447
DEPENDCY RATIO(-1)	3.429801	2.447104	1.401576	0.1986

R-squared	0.763692	Mean dependent var	1.580523
Adjusted R-squared	0.084307	S.D. dependent var	2.767788
S.E. of regression	2.648548	Akaike info criterion	4.899606
Sum squared resid	56.11845	Schwarz criterion	5.998908
Log likelihood	-54.39369	Hannan-Quinn criter.	5.263993
F-statistic	1.124092	Durbin-Watson stat	2.030876
Prob(F-statistic)	0.459606		

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Appendix 21 Ramsey Test for Model Misspecification

Ramsey RESET Test
Equation: UNTITLED
Specification: NS NS(-1) NS(-2) RGDP RGDP(-1) RGDP(-2) GDEBT GDEBT(-1) INF INF(-1) INF(-2) INTR INTR(-1) INTR(-2) FD FD(-1) FD(-2) FAID FAID(-1) REMIT REMIT(-1) TRAD DEPENDCY RATIO DEPENDCY RATIO(-1) C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.972517	7	0.3632
F-statistic	0.945789	(1, 7)	0.3632

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	6.020162	1	6.020162
Restricted SSR	50.57673	8	6.322091
Unrestricted SSR	44.55657	7	6.365224

Unrestricted Test Equation:
Dependent Variable: NS
Method: ARDL
Date: 05/16/18 Time: 13:18
Sample: 1983 2014
Included observations: 32
Maximum dependent lags: 2 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic):
Fixed regressors: C

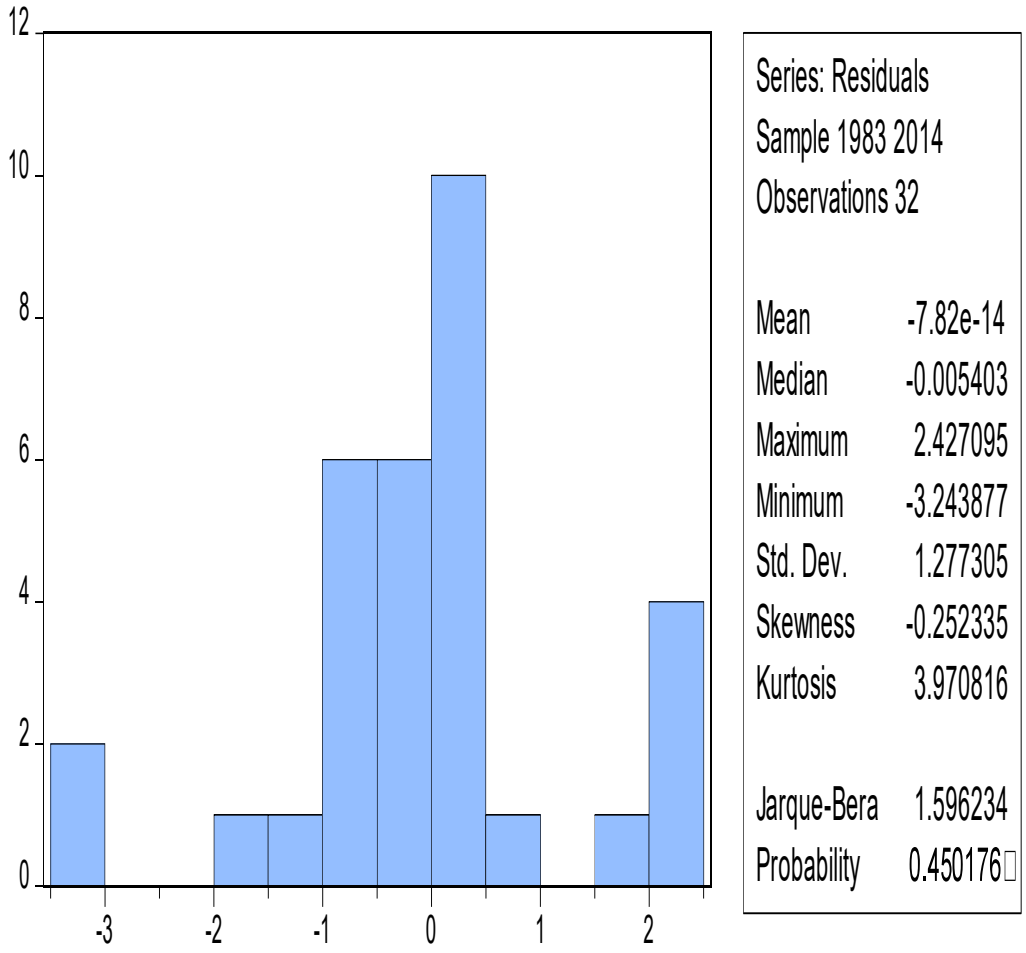
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
NS(-1)	-0.016039	0.199720	-0.080308	0.9382
NS(-2)	0.437668	0.220320	1.986514	0.0873
RGDP	0.616745	0.333170	1.851143	0.1066
RGDP(-1)	0.467362	0.264220	1.768834	0.1202
RGDP(-2)	1.037857	0.449939	2.306660	0.0545
GDEBT	0.609628	0.248898	2.449306	0.0442
GDEBT(-1)	0.102456	0.080201	1.277487	0.2422
INF	-1.377302	0.637459	-2.160613	0.0675
INF(-1)	-1.302204	0.554685	-2.347647	0.0513
INF(-2)	-0.747854	0.331578	-2.255440	0.0587
INTR	-0.259931	0.151312	-1.717848	0.1295
INTR(-1)	-0.739987	0.341783	-2.165081	0.0671
INTR(-2)	-0.310482	0.162090	-1.915493	0.0970
FD	-1.074690	0.540565	-1.988086	0.0871
FD(-1)	2.254435	0.984017	2.291054	0.0557
FD(-2)	-0.684889	0.501810	-1.364836	0.2146
FAID	0.276428	0.218631	1.264360	0.2466
FAID(-1)	1.455955	0.633256	2.299156	0.0551
REMIT	0.025719	0.323195	0.079577	0.9388
REMIT(-1)	2.716164	1.105576	2.456786	0.0437
TRAD	-0.484962	0.269679	-1.798292	0.1152
DEPENDCY_RATIO	4.721534	2.554575	1.848266	0.1070
DEPENDCY RATIO(-1)	13.96986	6.246257	2.236517	0.0604
C	-1814.434	723.4502	-2.508028	0.0405
FITTED^2	-0.024431	0.025121	-0.972517	0.3632

R-squared	0.970431	Mean dependent var	12.52984
Adjusted R-squared	0.869052	S.D. dependent var	6.971992
S.E. of regression	2.522940	Akaike info criterion	4.731401
Sum squared resid	44.55657	Schwarz criterion	5.876507
Log likelihood	-50.70241	Hannan-Quinn criter.	5.110971
F-statistic	9.572276	Durbin-Watson stat	2.138503
Prob(F-statistic)	0.002486		

*Note: p-values and any subsequent tests do not account for model selection.

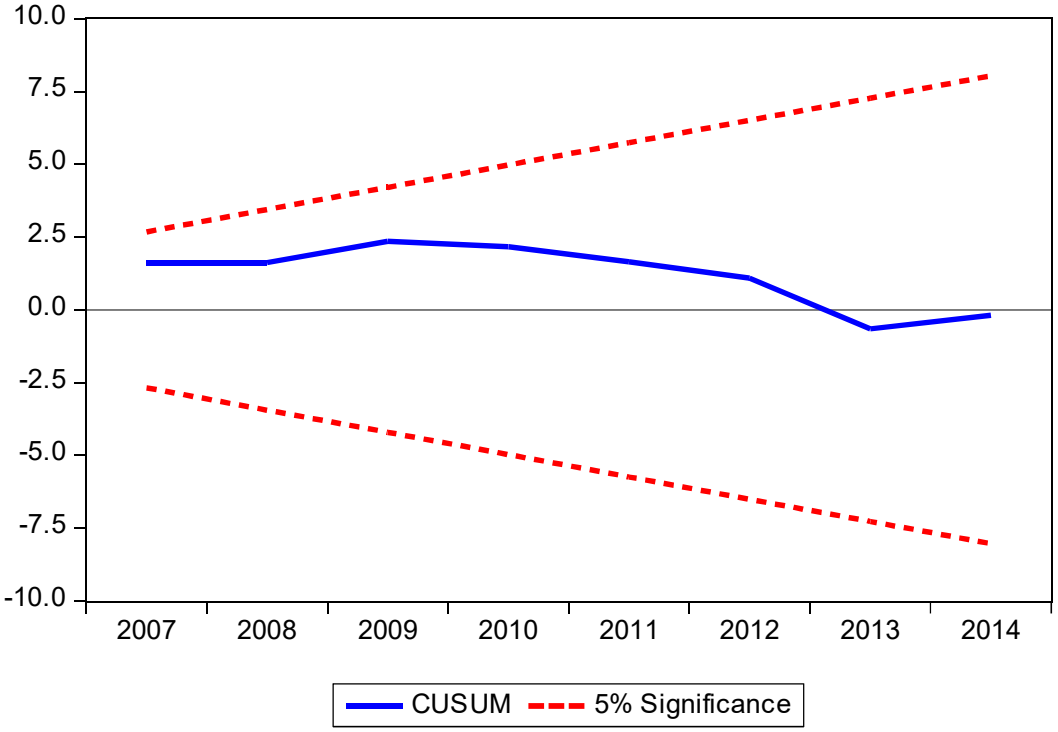
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Appendix 22 Jacque Bera Test for Normal Test

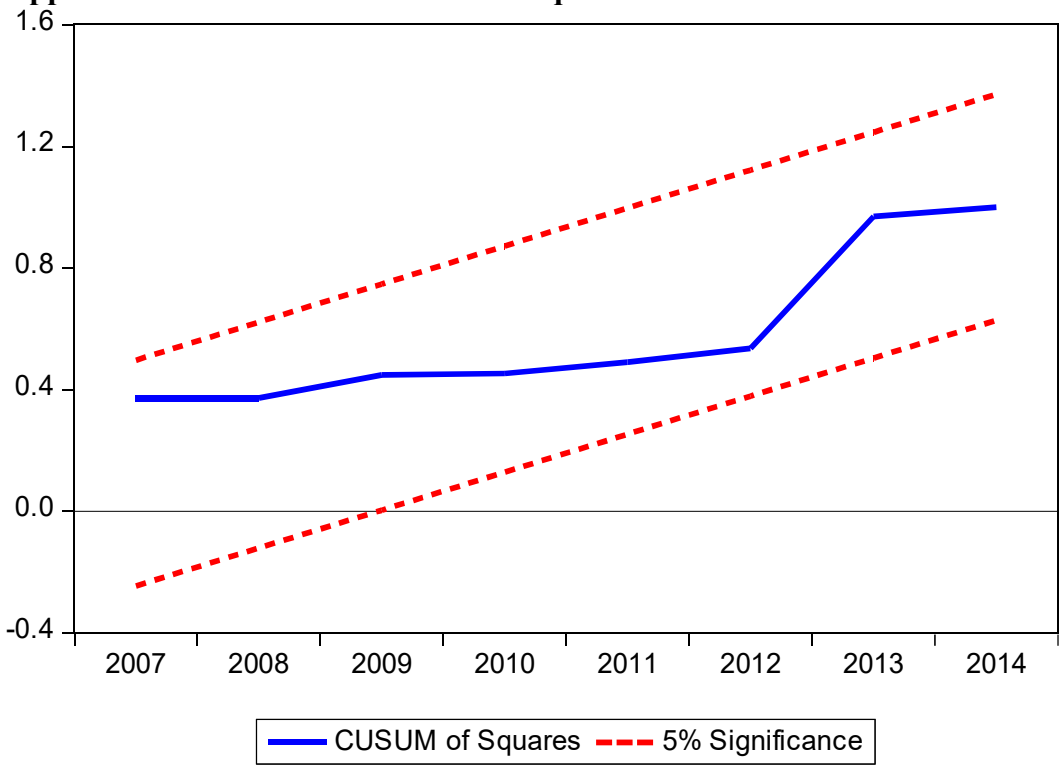


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Appendix 23 A Plot of the CUSUM Test



Appendix 24 A Plot of the CUSUM of Squares Test



Source: *Authors estimates using EVIEWS 10*

Note: the CUSUM test in the ARDL states from 2007 due to the lags variables present in the ARDL model thus resulting in a loss of the sample size.

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Appendix 25 Data Used for The Empirical Results

Time	NS	RGDP	Debt	INF	INTR	FD	FIAD	REMIT	TRAD	DR
1981	14,59004	20,75946	105,295	5,9	16,18	25,1869	31,33179	0,13	105,9271	4,555244
1982	22,2469	13,51761	111,8039	10,9	3,07	25,67877	21,99733	0,09	95,83902	4,568715
1983	20,82377	-7,61986	72,23238	10,6	14,92	28,57954	20,22322	0,33	95,04143	4,573096
1984	16,30263	3,649286	108,8666	22,1	8,26	26,71177	29,00967	0,33	121,9617	4,574741
1985	17,89505	2,363742	116,0387	18,3	-17,89	29,23374	19,14137	0,33	100,0096	4,577003
1986	14,68998	2,800263	121,3122	56,3	-8,91	21,44057	47,33896	0,33	89,08139	4,576352
1987	17,48714	1,70249	126,2137	23,5	7,95	22,00987	41,23739	0,33	112,6474	4,574896
1988	19,46733	4,33145	120,0127	11,7	18,08	22,03471	30,60422	0,33	105,1766	4,572984
1989	19,4478	5,695949	96,71934	8,3	11,51	22,10011	36,91433	0,33	111,9323	4,568409
1990	17,75112	2,163188	89,05143	12,2	12,98	20,65765	33,35676	0,33	127,2466	4,559395
1991	18,60674	4,420505	75,18353	8,6	-45,98	10,76107	14,85286	0,33	128,174	4,573751
1992	19,36888	6,129697	90,51925	9,5	24,33	11,62013	15,64562	0,33	137,1637	4,582461
1993	15,91372	3,832954	79,74303	6,5	19,92	12,09792	11,53353	0,33	131,8146	4,585391
1994	15,35804	-3,39753	98,10855	1,7	20,45	11,19879	9,456942	0,33	123,1788	4,583787
1995	22,42291	6,146402	105,4502	7	20,27	12,19602	5,895153	0,33	96,0161	4,579075
1996	12,94999	4,933591	108,9263	1,1	15,81	11,6456	4,333439	0,33	112,3439	4,579813
1997	18,73802	6,500378	107,6635	2,8	33,47	14,51802	4,987965	0,33	94,55875	4,576256
1998	16,40624	6,398798	116,7077	1,1	18,94	14,6656	4,840585	0,33	108,5244	4,569792
1999	15,47364	5,52489	117,7584	3,8	27,1	15,83717	4,371097	0,33	97,7108	4,561939
2000	-1,11676	5,753038	85,43143	0,8	21,31	19,80051	6,595091	0,33	67,58324	4,554084
2001	5,70008	-3,24695	131,4161	4,5	21,8	21,95304	8,035855	0,33	83,39201	4,557641
2002	1,214665	6,874319	110,9725	8,6	12,33	27,80646	11,82311	0,33	69,6405	4,558988
2003	2,722154	7,045586	116,7055	17	14,56	32,89863	13,63066	11,1	68,76232	4,558997
2004	19,696	-0,94168	112,0321	14,2	16,82	32,20606	10,98974	10,5	81,59811	4,568212
2005	11,63869	1,1241	111,7248	4,8	30,24	33,91074	10,09756	9,5	82,18575	4,556805
2006	17,36423	3,631026	116,3209	2,1	27,29	41,6642	11,93675	9,74	81,34759	4,561063
2007	10,79316	5,734642	42,33374	5,4	22,65	41,16207	12,5741	6,97	71,08728	4,563348
2008	2,697628	6,449696	38,0374	4,4	24,5	45,09066	10,0651	6,71	63,48546	4,563396
2009	7,287775	6,526297	43,05804	4,6	20,74	46,24381	14,34392	8,86	66,84312	4,560958
2010	5,409239	-4,29512	42,29369	5	21,68	49,04656	13,13594	12,15	65,78465	4,556201
2011	3,635353	5,273768	43,18049	4,8	22,64	54,94531	15,66338	11,93	65,01406	4,554009
2012	6,055527	6,347488	44,37778	4,3	23,32	53,43393	15,77943	15,45	73,07139	4,549321
2013	1,667617	-0,6975	43,41502	5,7	20,81	55,30506	12,81165	19,99	64,69633	4,542611
2014	7,086413	4,059486	39,17102	5,9	18,88	56,03871	12,39156	21,28	57,93077	4,534395

Note: All data are in percentage or log form