CPIA

Panel unit root test: Summary
Series: CPIA
Date: 02/05/24 Time: 14:25
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.52940	0.0000	39	819
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.88288	0.0020	39	819
ADF - Fisher Chi-square	100.921	0.0415	39	819
PP - Fisher Chi-square	81.5249	0.3702	39	858

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(CPIALEVEL)
Date: 02/05/24 Time: 14:29
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.68449	0.0000	14	280
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.51594	0.0000	14	280
ADF - Fisher Chi-square	93.1079	0.0000	14	280
PP - Fisher Chi-square	186.578	0.0000	14	294

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Dem

Panel unit root test: Summary
Series: DEM
Date: 02/06/24 Time: 10:13
Sample: 2000 2022
Exogenous variables: Individual effects

User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.66354	0.0039	51	1070
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.80226	0.0358	51	1070
ADF - Fisher Chi-square	166.447	0.0001	51	1070
PP - Fisher Chi-square	124.034	0.0682	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(DEM)
Date: 02/06/24 Time: 10:12
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.6271	0.0000	51	1019
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-11.0385	0.0000	51	1019
ADF - Fisher Chi-square	311.770	0.0000	51	1019
PP - Fisher Chi-square	547.190	0.0000	51	1070

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

EDB

Panel unit root test: Summary
Series: EDB
Date: 02/06/24 Time: 10:17
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				

Levin, Lin & Chu t*	-1.35457	0.0878	51	1070
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.27208	0.0115	51	1070
ADF - Fisher Chi-square	104.101	0.4236	51	1070
PP - Fisher Chi-square	103.289	0.4457	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(EDB)
Date: 02/06/24 Time: 10:17
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-16.3740	0.0000	49	979
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-10.3492	0.0000	49	979
ADF - Fisher Chi-square	276.909	0.0000	49	979
PP - Fisher Chi-square	575.806	0.0000	49	1028

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

FDI

Panel unit root test: Summary
Series: FDI
Date: 02/06/24 Time: 10:19
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.71442	0.0033	51	1070
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.62000	0.0000	51	1070
ADF - Fisher Chi-square	170.217	0.0000	51	1070
PP - Fisher Chi-square	298.154	0.0000	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(FDI)
Date: 02/06/24 Time: 10:19
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.5128	0.0000	51	1019
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-18.2141	0.0000	51	1019
ADF - Fisher Chi-square	507.601	0.0000	51	1019
PP - Fisher Chi-square	2181.68	0.0000	51	1070

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

FSK

Panel unit root test: Summary
Series: FSK
Date: 02/06/24 Time: 10:23
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	24.2331	1.0000	51	1070
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	3.11330	0.9991	51	1070
ADF - Fisher Chi-square	67.5010	0.9966	51	1070
PP - Fisher Chi-square	59.9195	0.9997	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(FSK)
Date: 02/06/24 Time: 10:24
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	87.2978	1.0000	51	1019

Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	4.68100	1.0000	51	1019
ADF - Fisher Chi-square	51.5994	1.0000	51	1019
PP - Fisher Chi-square	422.254	0.0000	51	1070

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

POP

Panel unit root test: Summary
Series: POP
Date: 02/06/24 Time: 10:25
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-21.9959	0.0000	51	1070
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-78.0577	0.0000	51	1070
ADF - Fisher Chi-square	4012.16	0.0000	51	1070
PP - Fisher Chi-square	85.4493	0.8812	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(POP)
Date: 02/06/24 Time: 10:25
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	393.418	1.0000	51	1019
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	11.4961	1.0000	51	1019
ADF - Fisher Chi-square	42.0031	1.0000	51	1019
PP - Fisher Chi-square	9084.06	0.0000	51	1070

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

REN

Panel unit root test: Summary

Series: RENEWABLES
Date: 02/06/24 Time: 10:26
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	4.21474	1.0000	46	965
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	2.76420	0.9971	46	965
ADF - Fisher Chi-square	105.552	0.1581	46	965
PP - Fisher Chi-square	85.9694	0.6573	46	1011

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(RENEWABLES)
Date: 02/06/24 Time: 10:28
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	9.03178	1.0000	46	919
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-6.15346	0.0000	46	919
ADF - Fisher Chi-square	225.212	0.0000	46	919
PP - Fisher Chi-square	418.842	0.0000	46	965

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

TMP

Panel unit root test: Summary
Series: TMP_COLUMNS
Date: 02/06/24 Time: 10:28
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.5137	0.0000	51	1070
Null: Unit root (assumes individual unit root process)				

Im, Pesaran and Shin W-stat	-9.06635	0.0000	51	1070
ADF - Fisher Chi-square	267.735	0.0000	51	1070
PP - Fisher Chi-square	399.274	0.0000	51	1121

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(TMP_COLUMNS)
Date: 02/06/24 Time: 10:29
Sample: 2000 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-22.5190	0.0000	51	1019
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-25.8251	0.0000	51	1019
ADF - Fisher Chi-square	724.997	0.0000	51	1019
PP - Fisher Chi-square	3171.76	0.0000	51	1070

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Fixed effect

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/09/24 Time: 15:10
Sample: 2000 2022
Periods included: 23
Cross-sections included: 51
Total panel (unbalanced) observations: 1172

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1077.631	126.4402	8.522847	0.0000
CPIA	41.46711	17.70229	2.342472	0.0193
DEM	852.9150	244.6385	3.486430	0.0005
FDI	5.726200	2.296892	2.493022	0.0128
EDB	4.795555	0.886524	5.409392	0.0000
RENEWABLES	13.36390	1.181363	11.31228	0.0000
TMP_COLUMNS	47.94181	51.02463	0.939582	0.3476

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.520359	Mean dependent var	2188.139
Adjusted R-squared	0.496269	S.D. dependent var	836.3582
S.E. of regression	593.5968	Akaike info criterion	15.65769

Sum squared resid	3.93E+08	Schwarz criterion	15.90410
Log likelihood	-9118.406	Hannan-Quinn criter.	15.75062
F-statistic	21.60098	Durbin-Watson stat	0.765866
Prob(F-statistic)	0.000000		

Random

Dependent Variable: FSK
Method: Panel EGLS (Cross-section random effects)
Date: 02/06/24 Time: 18:44
Sample: 2000 2022
Periods included: 23
Cross-sections included: 51
Total panel (unbalanced) observations: 1172
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1229.016	122.1831	10.05880	0.0000
CPIALEVEL	21.91777	16.96515	1.291929	0.1966
DEM	1008.936	210.6473	4.789692	0.0000
EDB	5.041648	0.843944	5.973912	0.0000
FDI	5.478001	2.274870	2.408050	0.0162
RENEWABLES	9.465610	1.016829	9.308951	0.0000
TMP_COLUMNS	27.21617	18.36361	1.482071	0.1386

Effects Specification	S.D.	Rho
Cross-section random	491.0876	0.4063
Idiosyncratic random	593.5968	0.5937

Hausman

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	52.633643	6	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
CPIALEVEL	41.467109	21.917772	25.554629	0.0001
DEM	852.915008	1008.935588	15475.713043	0.2098
EDB	4.795555	5.041648	0.073683	0.3646
FDI	5.726200	5.478001	0.100675	0.4341
RENEWABLES	13.363904	9.465610	0.361677	0.0000
TMP_COLUMNS	47.941807	27.216173	2266.290428	0.6633

Cross-section random effects test equation:

Pooled

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/07/24 Time: 05:06
Sample: 2000 2022
Periods included: 23
Cross-sections included: 51
Total panel (unbalanced) observations: 1172

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1721.315	68.92591	24.97341	0.0000
CPIALEVEL	-45.33701	17.01025	-2.665276	0.0078
DEM	970.7375	130.9002	7.415859	0.0000
EDB	6.566909	1.106701	5.933769	0.0000
FDI	-0.231694	2.722163	-0.085114	0.9322
RENEWABLES	0.758256	0.633961	1.196061	0.2319
TMP_COLUMNS	19.42775	6.488563	2.994153	0.0028

R-squared	0.087261	Mean dependent var	2188.139
Adjusted R-squared	0.082561	S.D. dependent var	836.3582
S.E. of regression	801.0895	Akaike info criterion	16.21578
Sum squared resid	7.48E+08	Schwarz criterion	16.24604
Log likelihood	-9495.445	Hannan-Quinn criter.	16.22719
F-statistic	18.56309	Durbin-Watson stat	0.525398
Prob(F-statistic)	0.000000		

North.

Dependent Variable: FSK

Method: Panel Least Squares
Date: 02/07/24 Time: 12:07
Sample: 2000 2022
Periods included: 23
Cross-sections included: 6
Total panel (unbalanced) observations: 136

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2105.958	278.9463	7.549690	0.0000
CPIA	-131.9876	240.2724	-0.549325	0.5838
DEM	2080.672	601.7014	3.457982	0.0007
EDB	3.311431	3.113522	1.063565	0.2896
FDI	-23.57055	42.99807	-0.548177	0.5846
RENEWABLES	10.56811	8.095609	1.305412	0.1942
TMP_COLUMNS	17.04757	151.1617	0.112777	0.9104

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.444569	Mean dependent var	2783.986
Adjusted R-squared	0.395297	S.D. dependent var	994.5919
S.E. of regression	773.4210	Akaike info criterion	16.22362
Sum squared resid	74174321	Schwarz criterion	16.48062
Log likelihood	-1091.206	Hannan-Quinn criter.	16.32806
F-statistic	9.022741	Durbin-Watson stat	0.642046
Prob(F-statistic)	0.000000		

East Africa

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/09/24 Time: 16:17
Sample: 2000 2022
Periods included: 23
Cross-sections included: 16
Total panel (balanced) observations: 368

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	202.3907	253.4840	0.798436	0.4252
CPIA	93.73950	33.55817	2.793344	0.0055
DEM	784.6668	547.9227	1.432076	0.1530
EDB	4.922294	1.513883	3.251435	0.0013
FDI	25.78973	5.100715	5.056101	0.0000
RENEWABLES	16.49963	2.105078	7.838010	0.0000
TMP_COLUMNS	143.1183	98.85174	1.447807	0.1486

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.581944	Mean dependent var	1827.421
Adjusted R-squared	0.556570	S.D. dependent var	925.1480
S.E. of regression	616.0608	Akaike info criterion	15.74249
Sum squared resid	1.31E+08	Schwarz criterion	15.97612

Log likelihood	-2874.618	Hannan-Quinn criter.	15.83531
F-statistic	22.93523	Durbin-Watson stat	0.705847
Prob(F-statistic)	0.000000		

Middle

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/07/24 Time: 12:41
Sample: 2000 2022
Periods included: 23
Cross-sections included: 8
Total panel (balanced) observations: 184

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1035.340	382.0755	2.709778	0.0074
CPIA	63.07071	47.48539	1.328213	0.1859
DEM	1056.159	1039.912	1.015623	0.3113
EDB	7.472146	3.032868	2.463723	0.0147
FDI	-2.674976	5.489463	-0.487293	0.6267
RENEWABLES	7.900390	2.548284	3.100278	0.0023
TMP_COLUMNS	31.50435	165.7984	0.190016	0.8495

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.421422	Mean dependent var	2022.760
Adjusted R-squared	0.377178	S.D. dependent var	728.2071
S.E. of regression	574.6943	Akaike info criterion	15.61859
Sum squared resid	56146492	Schwarz criterion	15.86320
Log likelihood	-1422.910	Hannan-Quinn criter.	15.71774
F-statistic	9.524922	Durbin-Watson stat	0.722268
Prob(F-statistic)	0.000000		

Southern

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/07/24 Time: 12:54
Sample: 2000 2022
Periods included: 23
Cross-sections included: 5
Total panel (balanced) observations: 115

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-106.8055	456.3044	-0.234066	0.8154
CPIA	129.3942	61.12100	2.117017	0.0366
DEM	2020.361	778.0902	2.596564	0.0108
EDB	0.547949	1.706645	0.321068	0.7488
FDI	-15.11728	15.59709	-0.969237	0.3347
RENEWABLES	22.71584	2.346272	9.681674	0.0000
TMP_COLUMNS	22.56464	85.59095	0.263633	0.7926

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.607618	Mean dependent var	2344.852
Adjusted R-squared	0.569888	S.D. dependent var	563.5028
S.E. of regression	369.5614	Akaike info criterion	14.75327
Sum squared resid	14203868	Schwarz criterion	15.01583
Log likelihood	-837.3133	Hannan-Quinn criter.	14.85985
F-statistic	16.10475	Durbin-Watson stat	1.170097
Prob(F-statistic)	0.000000		

West Africa

Dependent Variable: FSK
Method: Panel Least Squares
Date: 02/07/24 Time: 13:17
Sample: 2000 2022
Periods included: 23
Cross-sections included: 16
Total panel (balanced) observations: 368

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1914.781	273.3384	7.005168	0.0000
CPIA	-3.707965	21.72445	-0.170682	0.8646
DEM	63.68559	347.9491	0.183031	0.8549
EDB	5.298348	1.408189	3.762525	0.0002
FDI	2.596331	2.498979	1.038956	0.2996
RENEWABLES	14.40028	1.910910	7.535823	0.0000
TMP_COLUMNS	3.728262	92.84702	0.040155	0.9680

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.292988	Mean dependent var	2368.315
Adjusted R-squared	0.250077	S.D. dependent var	565.7092
S.E. of regression	489.8935	Akaike info criterion	15.28417
Sum squared resid	83038493	Schwarz criterion	15.51781
Log likelihood	-2790.288	Hannan-Quinn criter.	15.37700
F-statistic	6.827780	Durbin-Watson stat	1.151133
Prob(F-statistic)	0.000000		