Investor Herding and Spillovers in African Debt Markets

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Online Appendix

Table 1: Herding and contagion in the African sovereign bond market

A. Daily African Bonds Yield

	Africa	Latin America to Africa	Asia to Africa	Developed Europe to Africa	Developing Europe to Africa	Other Developed to Africa
Intercept	-14.659	-11.012	-3.773	-8.383	-3.813	-3.823
	(0.646)	(0.546)	(0.580)	(0.453)	(0.499)	(0.479)
Y_2	2.563	2.333	1.194	1.827	0.890	1.384
	(0.118)	(0.099)	(0.100)	(0.082)	(0.089)	(0.083)
Y_3	**-0.087**	-0.085	-0.035	-0.068	-0.024	-0.052
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Y_5		**-0.049**	**-0.076**	**-0.110**	**-0.029**	**-0.085**
		(0.001)	(0.002)	(0.002)	(0.001)	(0.003)
R-Square	0.491	0.647	0.681	0.769	0.745	0.766

B. Weekly African Bonds Yield

	Africa	Latin America to Africa	Asia to Africa	Developed Europe to Africa	Developing Europe to Africa	Other Developed to Africa
Intercept	-12.926	-8.409	6.881	-2.882	3.745	5.061
	(1.862)	(1.480)	(1.361)	(1.035)	(0.967)	(1.152)
Y2	2.133	1.848	-0.452*	0.782	-0.460	0.081
	(0.341)	(0.270)	(0.233)	(0.188)	(0.172)	(0.198)
Y3	**-0.061**	-0.061	0.039	-0.014	0.038	0.008
	(0.016)	(0.012)	(0.010)	(0.009)	(0.008)	(0.009)
Y5		**-0.063**	**-0.111**	**-0.136**	**-0.041**	**-0.041**
		(0.003)	(0.004)	(0.003)	(0.002)	(0.007)
R-Square	0.473	0.672	0.791	0.848	0.881	0.841

Notes: The table presents the regression. The independent variable is the Cross Sectional Absolute Deviation (CSAD) of returns (bonds yield) at day t when the market return is positive. Y2 is the coefficient of the absolute value of the positive market portfolio return at day t, Y3 is the coefficient of

the squared positive market return at day t in column (1), and Y5 is coefficient the squared return from another regional or country market in columns (2)–(6). In Panel A, the estimations are made with daily observations, while weekly observations are used in Panel B. Standard errors appear in parentheses. Boldface denotes negative and statistically significant herding coefficients at the 1% level.

Table 2: Herding and contagion in the African CDS market

A.   Daily African CDS Spread

	Africa	Latin America to Africa	Asia to Africa	Developed Europe to Africa	Developing Europe to Africa	Other Developed to Africa
Intercept	-0.655	-0.595	-0.598	-0.552	-0.541	-1.052
	(0.036)	(0.032)	(0.039)	(0.035)	(0.036)	(0.048)
Y_2	0.779	0.575	0.625	0.677	0.663	1.045
	(0.027)	(0.024)	(0.026)	(0.026)	(0.027)	(0.033)
Y_3	**-0.060**	-0.015	-0.016	-0.044	-0.033	-0.102
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)
Y_5		**-0.017**	**-0.073**	0.001*	**-0.022**	**-0.110**
		(0.001)	(0.004)	(0.000)	(0.001)	(0.041)
R-Square	0.674	0.754	0.726	0.710	0.704	0.674

B.   Weekly African CDS Spread

	Africa	Latin America to Africa	Asia to Africa	Developed Europe to Africa	Developing Europe to Africa	Other Developed to Africa
Intercept	-0.470	-0.415	-0.497	-0.383	-0.407	-0.912
	(0.069)	(0.060)	(0.074)	(0.066)	(0.067)	(0.098)
Y2	0.650	0.447	0.536	0.557	0.567	0.953
	(0.052)	(0.048)	(0.049)	(0.052)	(0.051)	(0.070)
Y3	**-0.039**	0.006	0.000	-0.025	-0.017*	-0.087
	(0.010)	(0.009)	(0.009)	(0.009)	(0.010)	(0.012)
Y5		**-0.018**	**-0.085**	0.001	**-0.023**	-0.104
		(0.001)	(0.009)	(0.001)	(0.003)	(0.094)
R-Square	0.687	0.765	0.745	0.724	0.719	0.682

Notes: The table presents the regression. The independent variable is the Cross Sectional Absolute Deviation (CSAD) of CDS spread at day t when the market return is positive. Y2 is the coefficient of the absolute value of the positive market portfolio return at day t , Y3 is the coefficient of the squared positive market return at day t in column (1), and Y5 is coefficient the squared return from another regional or country market in columns (2)–(6). In Panel A, the estimations are made with daily observations, while weekly observations are used in Panel B. Standard errors appear in parentheses. Bold cases denote negative and statistically significant herding coefficients at the 1% level.

Table 3: Herding and contagion in other developing regions' CDS markets

A. Weekly Asia CDS Spread

	Asia	Africa to Asia	Latin America to Asia	Developed Europe to Asia	Developing Europe to Asia	Other Developed to Asia
Intercept	-0.0353	0.0754	-0.0222	-0.101*	-0.329	0.00547
	(0.0500)	(0.0166)	(0.0518)	(0.0446)	(0.0431)	(0.0210)
Y_2	0.517	0.304	0.563	0.741	0.620	0.305
	(0.0544)	(0.0166)	(0.0598)	(0.0503)	(0.0422)	(0.0242)
Y_3	**-0.0287***	0.0372	-0.0430**	-0.0757	0.0870	0.0265
	(0.0124)	(0.00366)	(0.0153)	(0.0114)	(0.0110)	(0.00483)
Y_5		**-0.0236**	0.00539*	0.0129	**-0.106**	**-0.221**
		(0.00147)	(0.00212)	(0.00111)	(0.00456)	(0.0417)
R-Square	0.352	0.903	0.362	0.500	0.617	0.827

B. Weekly Latin America CDS Spread

	Latin America	Africa to Latin America	Asia to Latin America	Developed Europe to Latin America	Developing Europe to Latin America	Other Developed to Latin America
Intercept	-1.019	-1.089	-0.989	-1.034	-0.899	-1.312
	(0.0804)	(0.0636)	(0.0476)	(0.0807)	(0.0667)	(0.0836)
Y_2	1.146	1.304	1.438	1.121	1.419	1.545
	(0.0440)	(0.0321)	(0.0262)	(0.0451)	(0.0322)	(0.0463)
Y_3	0.0312	0.0227	0.0197	0.0337	0.0200	0.00182
	(0.00418)	(0.00293)	(0.00243)	(0.00429)	(0.00295)	(0.00416)
Y_5		**-0.216**	**-0.238**	-0.00543	**-0.127**	**-1.102**
		(0.00626)	(0.00746)	(0.00281)	(0.00516)	(0.233)
R-Square	0.941	0.981	0.981	0.942	0.971	0.961

C. Weekly Developing Europe CDS Spread

	Developing Europe	Africa to Developing Europe	Asia to Developing Europe	Developed Europe to Developing Europe	Latin America to Developing Europe	Other Developed to Developing Europe
Intercept	0.410	0.280	0.210	0.388	0.378	0.232
	(0.0318)	(0.0450)	(0.0365)	(0.0336)	(0.0319)	(0.0404)

	(1)	(2)	(3)	(4)	(5)	(6)
Y_2	0.160	0.141	0.218	0.204	0.247	0.306
	(0.0304)	(0.0376)	(0.0312)	(0.0350)	(0.0339)	(0.0360)
Y_3	-0.00122	0.00365	0.00643	-0.00883	-0.0247	0.00502
	(0.00613)	(0.00694)	(0.00867)	(0.00670)	(0.00734)	(0.00617)
Y_5		-0.000359	**-0.0500**	0.00334**	0.00865	**-0.312**
		(0.00330)	(0.00898)	(0.00102)	(0.00157)	(0.0747)
R-Square	0.223	0.351	0.332	0.233	0.251	0.424

Notes: The table presents the regression. The independent variable is the Cross Sectional Absolute Deviation (CSAD) of CDS spread at day t when the market return is positive. Y2 is the coefficient of the absolute value of the positive market portfolio return at day t, Y3 is the coefficient of the squared positive market return at day t in column (1), and Y5 is the coefficient of the squared return from another regional or country market in columns (2)–(6). Panels A, B and C represent, respectively, the estimation results for Asia, Latin America, and Developing Europe. Standard errors appear in parentheses. Bold cases denote negative and statistically significant herding coefficients at the 1% level.

Table 4: Herding and contagion in other developing regions' bond markets

A. Weekly Asia Bonds Yield

	Asia	Africa to Asia	Latin America to Asia	Developed Europe to Asia	Developing Europe to Asia	Other Developed to Asia
Intercept	1.599	-0.897	-0.997*	0.368	1.258**	-1.300**
	(0.533)	(0.573)	(0.529)	(0.545)	(0.619)	(0.532)
Y_2	-0.203	0.602	0.601	0.064	-0.188	0.718
	(0.180)	(0.187)	(0.176)	(0.182)	(0.201)	(0.184)
Y_3	0.045	-0.023	-0.016	0.036**	0.045	-0.010
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)
Y_5		0.000	**-0.013**	**-0.020**	0.004	**-0.030**
		(0.000)	(0.001)	(0.002)	(0.001)	(0.003)
R-Square	0.481	0.554	0.422	0.574	0.505	0.604

B. Weekly Latin America Bonds Yield

	Latin America	Africa to Latin America	Asia to Latin America	Developed Europe to Latin America	Developing Europe to Latin America	Other Developed to Latin America
Intercept	5.116	3.062	3.778	3.817	4.462	3.774
	(0.272)	(0.290)	(0.298)	(0.308)	(0.253)	(0.282)
	-1.398	-0.917	-1.006	-1.077	-1.331	-0.935

Y_2	(0.080)	(0.081)	(0.084)	(0.085)	(0.075)	(0.082)
Y_3	0.124	0.093	0.103	0.109	0.123	0.099
	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)
Y_5		-0.000	**-0.023**	**-0.024**	0.000	**-0.017**
		(0.000)	(0.002)	(0.002)	(0.001)	(0.004)
R-Square	0.698	0.741	0.620	0.738	0.753	0.749

## C. Weekly Developing Europe Bonds Yield

	Developing Europe	Africa to Developing Europe	Asia to Developing Europe	Developed Europe to Developing Europe	Latin America to Developing Europe	Other Developed to Developing Europe
Intercept	12.273	-0.672	0.808	-0.008	5.790	0.897
	(1.527)	(0.904)	(1.153)	(0.754)	(1.379)	(0.867)
Y_2	-2.744	-0.140	1.220	0.779	-0.793*	1.417
	(0.451)	(0.259)	(0.354)	(0.223)	(0.408)	(0.268)
Y_3	0.178	0.047**	-0.069	-0.028*	0.056*	-0.086
	(0.033)	(0.018)	(0.025)	(0.016)	(0.029)	(0.019)
Y_5		**-0.011**	**-0.118**	**-0.186**	**-0.062**	**-0.056**
		(0.001)	(0.004)	(0.003)	(0.004)	(0.007)
R-Square	0.086	0.549	0.748	0.801	0.329	0.736

Notes: The table presents the regression. The independent variable is the Cross Sectional Absolute Deviation (CSAD) of returns (bonds yield) at day t when the market return is positive. Y2 is the coefficient of the absolute value of the positive market portfolio return at day t, Y3 is the coefficient of the squared positive market return at day t in column (1) and Y5 is the coefficient of the squared return from another regional or country market in columns (2)–(6). Panels A, B and C represent respectively the estimations results for Asia, Latin America and Developing Europe. Standard errors appear in parentheses. Bold cases denote negative and statistically significant herding coefficients at the 1% level.

Figure 1. Trends in African sovereign CDS spreads
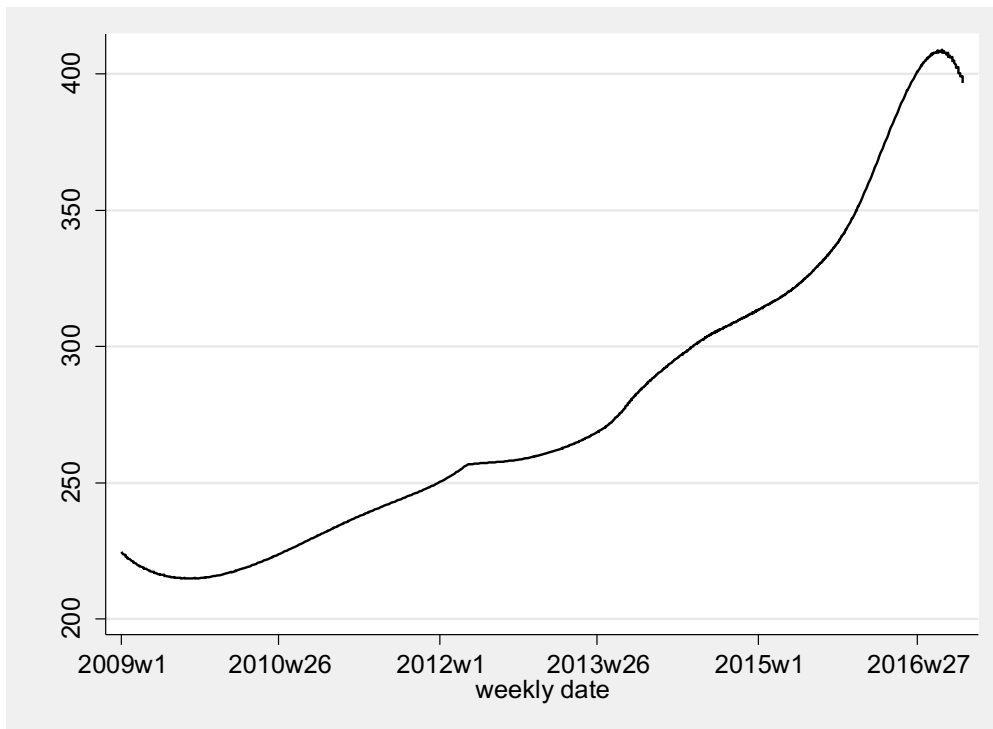
Notes: The figure depicts the trends of the unweighted lowess smoothing CDS spreads for the African countries in our sample.