

ONLINE APPENDIX

YOUTH BULGES AND CIVIL CONFLICT: CAUSAL EVIDENCE FROM SUB-SAHARAN AFRICA

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S1 Robustness Checks

Table S1.1: Correlation Coefficients - Instrument and Socioeconomic Outcomes

	Log GDP p. Capita (1)	Urbanization (2)	Democracy (Polity IV) (3)	Real Openness (4)
S_t^{10-14}	-0.124 (0.176)	-0.230 (1.988)	0.506 (1.666)	-0.037 (0.122)
S_t^{15-19}	0.071 (0.122)	-1.852 (1.998)	1.622 (2.036)	-0.150 (0.168)
S_t^{20-24}	0.189 (0.165)	-1.696 (1.861)	-3.539 (2.185)	0.123 (0.197)
Obs.	2,057	2,193	1,762	2,057
RMSE	0.199	1.853	2.800	0.264

Note: * $p < 0.10$, ** $p < 0.05$. S_t^{10-14} represents the drought shock measure for population group aged 10–14 defined according to Eq.(5). S_t^{15-19} and S_t^{20-24} are the shocks for age groups 15–19 and 20–24, respectively. FE estimator regressions in all columns with country dummies, country-specific time trends and regional time dummies and robust standard errors clustered at the country level in parentheses. Urbanization is the share of urban population relative to total population (WDI). Democracy is the revised combined Polity score (Polity IV database). Real GDP p. Capita and Real Openness are drawn from the FAO database.

S1.1 Use of alternative cut-off levels for shock definition

Table S1.2: Robustness Cut-off (10th percentile): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	0.137						
Population 10–14 _t	(0.259)	[0.930]						
Log	0.071	2.595*	2.413***	0.013	2.400***	1.930***	1.470***	-3.123
Population 15–19 _t	(0.225)	[0.086]	[0.002]	[0.978]	[0.000]	[0.000]	[0.000]	[0.524]
Log	-0.250	-0.369						
Population 20–24 _t	(0.251)	[0.648]						
Incidence Civil Conflict _{t-1}						0.295*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.318	0.317	0.198	0.300	0.277	0.213	0.421
F-test excl. IV		2.42, 3.63, 2.75	7.913	7.913	7.913	7.739	10.81	2.757
Kleibergen-Paap		0.080	0.039	0.039	0.039	0.041	0.022	0.053

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

Table S1.3: Robustness Cut-off (15th percentile): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity	Low Intensity	Low Intensity	Low Intensity	Low Intensity
	(OLS)	(IV)		Conflict _t	Conflict _t	Incidence _t	Onset _t	Offset _t
	(1)	(2)	(3)	(IV)	(IV)	(IV)	(IV)	(IV)
Log	0.090	-0.229						
Population 10–14 _t	(0.259)	[0.838]						
Log	0.071	2.453**	2.101***	-0.070	2.176***	1.692***	1.181***	-1.073
Population 15–19 _t	(0.225)	[0.042]	[0.001]	[0.870]	[0.000]	[0.000]	[0.000]	0.752
Log	-0.250	-0.374						
Population 20–24 _t	(0.251)	[0.623]						
Incidence Civil Conflict _{t-1}						0.298*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.308	0.308	0.198	0.294	0.272	0.206	0.403
F-test excl. IV		3.57, 4.17, 3.26	9.206	9.206	9.206	9.043	12.22	4.234
Kleibergen-Paap		0.048	0.025	0.025	0.025	0.026	0.015	0.018

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

Table S1.4: Robustness Cut-off (25th percentile): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity	Low Intensity	Low Intensity	Low Intensity	Low Intensity
	(OLS)	(IV)		Conflict _t	Conflict _t	Incidence _t	Onset _t	Offset _t
	(1)	(2)	(3)	(IV)	(IV)	(IV)	(IV)	(IV)
Log	0.090	0.268						
Population 10–14 _t	(0.259)	[0.819]						
Log	0.071	2.762**	2.819***	0.161	2.674***	2.056***	1.249***	-1.256
Population 15–19 _t	(0.225)	[0.017]	[0.000]	[0.712]	[0.000]	[0.000]	[0.000]	[0.781]
Log	-0.250	-0.097						
Population 20–24 _t	(0.251)	[0.901]						
Incidence Civil Conflict _{t-1}						0.294*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.331	0.329	0.199	0.307	0.280	0.207	0.404
F-test excl. IV		1.68, 2.39, 2.40	6.545	6.545	6.545	6.360	8.017	3.062
Kleibergen-Paap		0.020	0.030	0.030	0.030	0.030	0.018	0.026

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

Table S1.5: Robustness Cut-off (30th percentile): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	0.681						
Population 10–14 _t	(0.259)	[0.600]						
Log	0.071	2.500	2.664***	0.231	2.448***	1.909***	1.121***	-3.991
Population 15–19 _t	(0.225)	[0.030]	[0.002]	[0.637]	[0.001]	[0.000]	[0.001]	[0.368]
Log	-0.250	-0.081						
Population 20–24 _t	(0.251)	[0.921]						
Incidence Civil Conflict _{t-1}						0.296*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.333	0.324	0.199	0.301	0.277	0.204	0.431
F-test excl. IV		1.18, 2.11, 2.34	5.689	5.689	5.689	5.517	7.164	4.700
Kleibergen-Paap		0.030	0.032	0.032	0.032	0.034	0.021	0.012

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

S1.2 Use of alternative cut-off time scale of SPEI

Table S1.6: Robustness Time Scale SPEI (3 months): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	0.216						
Population 10–14 _t	(0.259)	[0.874]						
Log	0.071	1.517	1.834***	-0.143	1.986***	1.558***	1.049***	-1.419
Population 15–19 _t	(0.225)	[0.254]	[0.009]	[0.743]	[0.001]	[0.001]	[0.000]	[0.688]
Log	-0.250	0.293						
Population 20–24 _t	(0.251)	[0.685]						
Incidence Civil Conflict _{t-1}						0.299*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.303	0.302	0.197	0.289	0.269	0.203	0.405
F-test excl. IV		2.53, 4.12, 3.50	9.302	9.302	9.302	9.144	12.27	3.583
Kleibergen-Paap		0.025	0.027	0.027	0.0276	0.028	0.016	0.024

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

Table S1.7: Robustness Time Scale SPEI (5 months): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	0.203						
Population 10–14 _t	(0.259)	[0.878]						
Log	0.071	2.689**	2.706***	0.114	2.596***	1.968***	1.339***	0.859
Population 15–19 _t	(0.225)	[0.028]	[0.000]	[0.801]	[0.000]	[0.000]	[0.000]	[0.834]
Log	-0.250	-0.090						
Population 20–24 _t	(0.251)	[0.912]						
Incidence Civil Conflict _{t-1}						0.295*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.328	0.326	0.198	0.305	0.278	0.209	0.396
F-test excl. IV		1.33, 2.59, 3.07	6.946	6.946	6.946	6.759	8.062	4.815
Kleibergen-Paap		0.056	0.023	0.023	0.023	0.025	0.017	0.008

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

S1.3 Use of alternative growing seasons

Table S1.8: Robustness Growing Season (All months included): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	-0.039						
Population 10–14 _t	(0.259)	[0.998]						
Log	0.071	2.093	3.219**	1.044	2.166*	1.855*	1.294***	45.204
Population 15–19 _t	(0.225)	[0.835]	[0.029]	[0.334]	[0.093]	[0.052]	[0.003]	[0.125]
Log	-0.250	2.946						
Population 20–24 _t	(0.251)	[0.803]						
Incidence Civil Conflict _{t-1}						0.296*** (0.048)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.280	0.404	0.343	0.212	0.294	0.275	0.208	1.513
F-test excl. IV		0.63, 1.34, 0.80	1.500	1.500	1.500	1.459	3.434	0.095
Kleibergen-Paap		0.858	0.210	0.210	0.210	0.216	0.072	0.634

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

Table S1.9: Robustness Growing Season (Vrieling et al., 2013): Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log	0.090	-0.365						
Population 10–14 _t	(0.259)	[0.808]						
Log	0.071	2.114	2.654***	0.587	2.088***	1.681***	1.232***	-1.772
Population 15–19 _t	(0.225)	[0.179]	[0.002]	[0.315]	[0.001]	[0.001]	[0.000]	[0.813]
Log	-0.250	0.992						
Population 20–24 _t	(0.251)	[0.307]						
Incidence Civil Conflict _{t-1}						0.298*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE						(0.044)		
F-test excl. IV		1.88, 2.57, 1.19	4.632	4.632	4.632	4.519	7.170	1.932
Kleibergen-Paap		0.044	0.078	0.078	0.078	0.082	0.042	0.078

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable.

S1.4 Use of rainfall as instrument

Table S1.10: Robustness Rainfall Instrument: Youth Bulges and Civil Conflict Incidence: 2SLS-IV

	Civil Conflict Incidence _t			High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(OLS)	(IV)		(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log Population 10–14 _t	0.106 (0.255)	-1.506 [0.502]						
Log Population 15–19 _t	0.077 (0.219)	2.250 [0.457]	1.969** [0.037]	-0.294 [0.619]	2.206** [0.016]	1.785** [0.020]	1.618*** [0.007]	1.114 [0.726]
Log Population 20–24 _t	-0.244 (0.253)	0.888 [0.695]						
Incidence Civil Conflict _{t-1}						0.295*** (0.044)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	2193	2193	1890	319
RMSE	0.279	0.318	0.304	0.197	0.294	0.273	0.217	0.395
F-test excl. IV		1.47, 2.54, 2.98	6.530	6.530	6.530	6.344	6.230	2.323
Kleibergen-Paap		0.133	0.011	0.011	0.011	0.012	0.011	0.039

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. The three F-test values in column (2) represent the first-stage Angrist-Pischke test statistic of the excluded instruments of the three first stage regressions. I.e., with the (log) population of the age group 10–14, 15–19 and 20–24, respectively, as the LHS variable. The instrument is constructed as the average (log) amount of birth year rainfall for each age group. The rainfall data are drawn from Schneider et al. (2011).

S1.5 Alternative Coding and Data Sources

Table S1.11: Robustness 2SLS-IV - Alternative Onset/Offset Coding and Alternative Conflict Data

	Onset Civil Conflict _t		Offset Civil Conflict _t		Any Coup ^c
	(1) ^a	(2) ^b	(3) ^a	(4) ^b	(5)
Log	1.325***	1.712***	0.446	-0.092	1.526**
Population 15–19 _t	[0.000]	[0.000]	[0.930]	[0.747]	[0.021]
Incidence Civil Conflict _{t-1}		-0.221*** (0.037)		0.482*** (0.044)	
Contemporary Drought Shocks	yes	yes	yes	yes	yes
Obs.	1,818	2,193	205	2,193	2,012
RMSE	0.209	0.233	0.409	0.160	0.267
F-test excl. IV	11.28	8.362	2.645	8.362	2.630
Kleibergen-Paap	0.207	0.227	0.391	0.160	0.268

Note: ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments.

^a Onset (offset) is coded following Miguel et al. (2004), where continued periods of conflict (peace) as well as the onset of peace (conflict) is coded as missing.

^b Onset (offset) is coded following Fearon and Laitin (2003), where all onsets (offsets) are coded as one, and zero otherwise. In the regression, we the control for lagged conflict.

^c Information regarding coup d'état attempts are drawn from Powell and Thyne (2011).

S1.6 Use of relative youth bulge measure

Table S1.12: Robustness: Relative Youth Bulge Measure

	Civil Conflict Incidence _t	High Intensity Conflict _t	Low Intensity Conflict _t	Low Intensity Incidence _t	Low Intensity Onset _t	Low Intensity Offset _t
	(IV)	(IV)	(IV)	(IV)	(IV)	(IV)
	(1)	(2)	(3)	(4)	(5)	(6)
Population Share 15–19 _t	6.786*** [0.000]	-0.147 [0.909]	6.963*** [0.000]	5.418*** [0.000]	3.651*** [0.000]	0.240 [0.964]
Incidence Civil Conflict _{t-1}				0.286*** (0.050)		
Contemporary Drought Shocks	yes	yes	yes	yes	yes	yes
Obs.	2193	2193	2193	2193	1890	319
RMSE	0.315	0.198	0.310	0.283	0.210	0.398
F-test excl. IV	3.520	3.520	3.520	3.315	3.168	4.415
Kleibergen-Paap	0.070	0.070	0.070	0.078	0.085	0.056

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses. The values in brackets represent the Anderson-Rubin Chi-squared test statistic which is robust to weak instruments. In the case of multiple endogenous variables, we report the subset Anderson-Rubin test statistic for each structural parameter (Guggenberger et al., 2012). RMSE is the root mean square error. The F-test is the first-stage Angrist-Pischke test statistic of the excluded instruments. Kleibergen-Paap is the p-value of the first-stage LM statistic of the excluded instruments. Population Share 15–19_t refers to the number of 15–19 year olds relative to the adult population (30+)

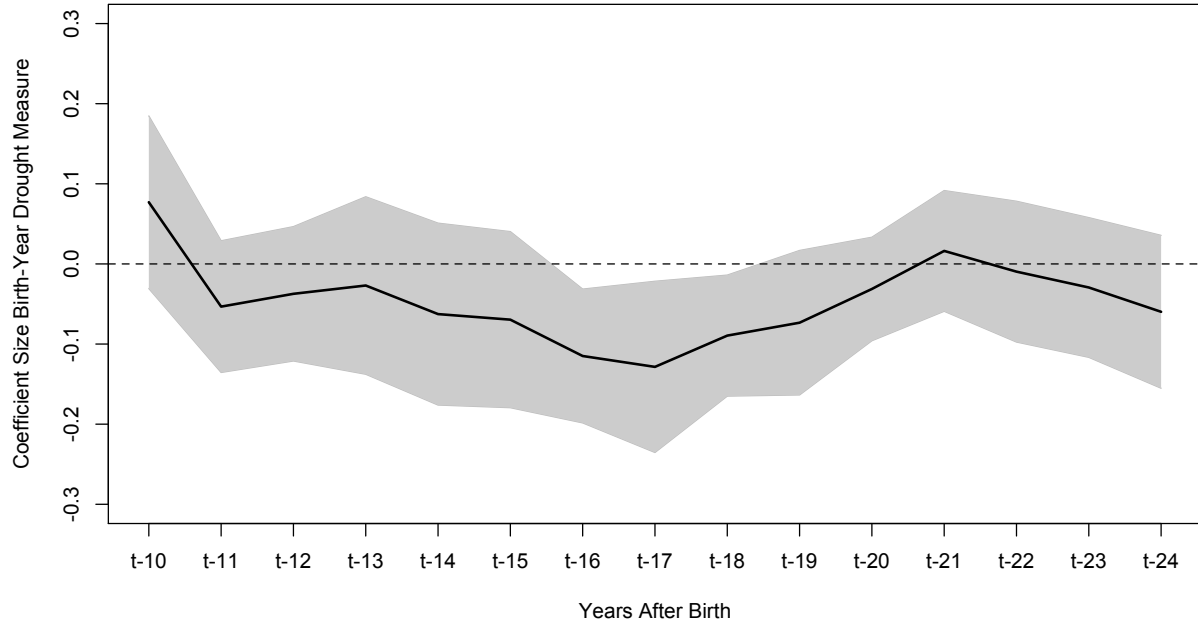


Figure S1.1: Graph depicts the effect of the individual birth year shocks $t - 10$ to $t - 24$ on the risk of conflict incidence (defined in Eq.(4)). The shaded represents the 90 percent confidence interval.

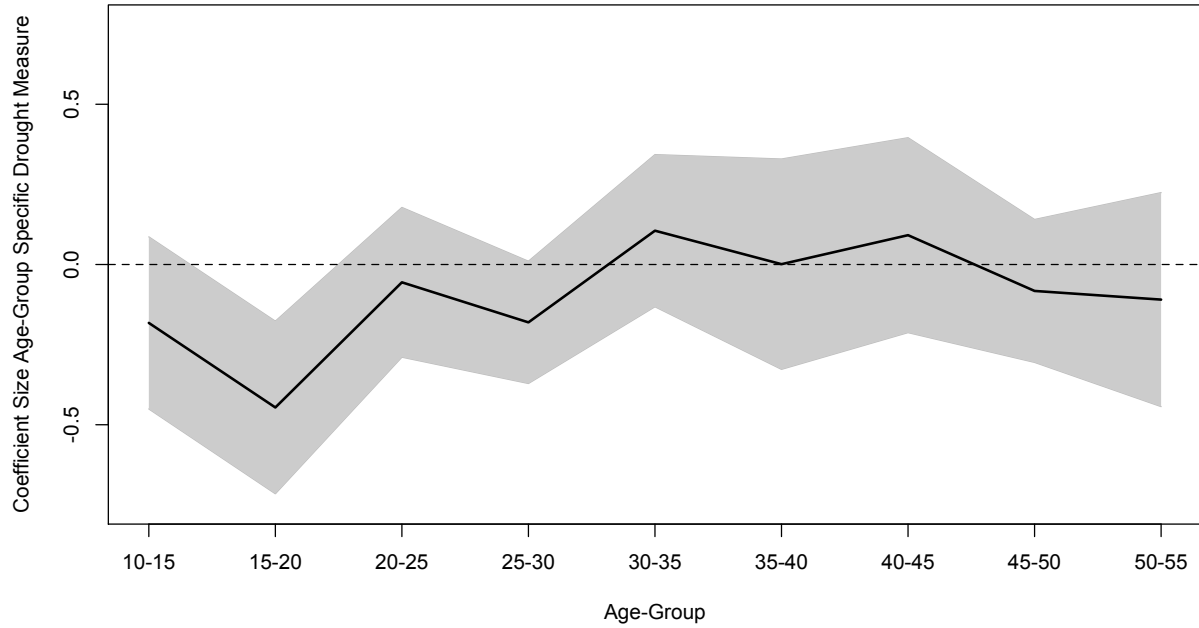


Figure S1.2: Graph depicts the effects of the age-group specific drought measures on the risk of conflict incidence (defined in Eq.(5)). The shaded represents the 90 percent confidence interval.

S2 IPUMS Data

To construct age group specific unemployment rate and school attainment levels at the sub-national level, we use harmonized, regionally representative survey information provided by the IPUMS-international database (Minnesota Population Center, 2004).

We build the region-level outcome variables by computing the weighted average over all the individuals that pertain to the age group of interest. The weights are provided by IPUMS. For example, we construct the unemployment rate of the age group 15–19 in the following manner: In a first step, we restrict the sample to persons aged 15–19. Second, we construct an indicator variable capturing whether a person is employed or not. In the last step, we compute the weighted average of this unemployment indicator for each region and year. The regional-level average number of years of schooling is constructed analogously. To compute the population size of group aged 15–19, we simply sum the sampling weights provided by IPUMS within each year and region.

Apart from providing individual level information regarding employment and schooling status, the database also reports in which region of a country an individual lives in. For each of these regions, IPUMS provides polygons which enables us to construct the region-specific drought-shock measure defined in Section 4. The drought data are then matched to the regional level outcome variable.

To construct the conflict onset indicator, we use the geocoded conflict data from the UCDP GED Conflict Polygons (Croicu and Sundberg, 2012). This geocoded dataset is available for the time period 1989–2010. Using this data we can determine whether a conflict occurred in a given region and year.

The final dataset spans the years 1989–2010 and contains 136 sub-national regions of 11 countries. These countries are: Burkina Faso, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Rwanda, South Africa, Uganda, and Zambia.

S2.1 Effects of adjacent age groups at sub-national Level

Table S2.1: Robustness Adjacent Age Groups: Mechanism

	Conflict Incidence _t		Unemployment Population 10–14 _t	Unemployment Population 20–24 _t	Unemployment Population 15–65 _t		Log Years of Schooling Population 10–14 _t	Log Years of Schooling Population 20–24 _t
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S_t^{10-14}	-0.282 (0.309)		0.019 (0.074)		0.022 (0.015)		-0.096 (0.089)	
S_t^{20-24}		0.012 (0.294)		-0.019 (0.040)		-0.018 (0.017)		-0.126 (0.206)
Obs.	388	388	374	388	388	388	336	336
RMSE	0.353	0.354	0.135	0.0535	0.0176	0.0176	0.119	0.180

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. S_t^{10-14} (S_t^{20-24}) represents the drought shock measure for population group aged 10–14 (20–24) defined according to Eq.(??). FE estimator regressions in all columns with country dummies, country-specific time trends, regional time dummies and robust standard errors clustered at the level in parentheses.

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