Supplementary materials

Table A1: Descriptive statistics

Table A1 provides descriptive statistics for the variables in the main analysis.

Table A1. Descriptive statistics

	Mean	Standard deviation	Min	Max
Irregular leader removal	0.05	0.21	0.00	1.00
Economic crisis$_{t-1}$	1.05	0.14	0.23	2.55
Economic crisis ($\leq$1)$_{t-1}$	0.97	0.07	0.23	1.00
Natural resources (log)$_{t-1}$	3.36	2.67	0.00	11.14
GDP/cap (log)$_{t-1}$	7.54	0.83	5.32	10.67
Population size (log)$_{t-1}$	8.90	1.41	4.80	14.10
Democracy level$_{t-1}$	-4.50	4.40	-10.00	5.00
Ongoing civil war$_{t-1}$	0.09	0.29	0.00	1.00
Temporal split	0.74	0.44	0.00	1.00
t	8.78	8.54	1.00	49.00
t^2	150.04	279.63	1.00	2401.00
t^3	3554.60	9864.24	1.00	117649.00
Global economic crisis	1.06	0.04	0.91	1.13
Regional irregular leader removals	0.05	0.03	0.00	0.16
Natural resource revenues (log)	7.05	4.00	0.00	13.34
Total revenues (log)	8.59	1.87	3.83	15.09
Physical integrity rights Index	3.86	2.10	0.00	8.00
Weighted conflict index	12.07	22.58	0.00	516.25
U.S. military aid/cap	4.92	23.11	0.00	452.01
Credit rating	29.94	19.29	3.65	92.10

Table B1: Alternative temporal splits

Table B1 provides robustness checks for the temporal split analyses by delimiting the splits at different points in time: 1950, 1955, 1965, and 1970. This tests two issues. First, it ensures that the results are not just a coincidental artifact of the 1960 split but pertain to temporally similar cut-offs – such as 1955 and 1965 – as well. Secondly, it enables examinations of whether it is indeed the 1960 cutoff that matters most or whether more distant cut-offs, such as at 1950 or 1970, are more significant. Interestingly, the results reveal that structural break cut-offs around 1960 and 1965 seem to be the most significant breaks, and moving either towards the 1950s or the 1970s only weakens the significance of the break points. More specifically, Wald tests show the weakest structural breaks for the effect of economic crisis at 1950 (p-value at 0.13 and 0.04 for the full-scale economic crisis and censored economic crisis measures respectively) and 1970 (p-value at 0.06 and 0.12). Structural breaks seem a bit clearer at 1955 (p-value at 0.09 and 0.02), but seem most consistent at 1965 (p-value at 0.02 and 0.04). These tests corroborate the argument put forward in this study, namely that it is the emergence of natural resources in the 1960s that contributes to the shift in crisis effects on irregular leader removal in autocracies.

Table B1. Alternative temporal splits

	Split = 1955		**Split = 1955**		**Split = 1965**		**Split = 1970**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temporal split	-0.208	-0.465	-0.152	-0.429	0.046	-0.176	0.057	-0.109
	(0.334)	(0.351)	(0.292)	(0.317)	(0.177)	(0.233)	(0.152)	(0.215)
Temporal split=0 × Economic crisis$_{t-1}$	-0.153		-0.143*		-0.152**		-0.108**	
	(0.093)		(0.079)		(0.063)		(0.051)	
Temporal split=1 × Economic crisis$_{t-1}$	-0.004		-0.001		0.006		0.004	
	(0.028)		(0.027)		(0.028)		(0.034)	
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.370**		-0.381**		-0.329**		-0.247*
		(0.172)		(0.166)		(0.153)		(0.145)
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.010		0.016		0.009		-0.003
		(0.050)		(0.050)		(0.049)		(0.052)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.009	0.003	0.007	0.003	0.035*	0.031*	0.029*	0.025*
	(0.039)	(0.038)	(0.032)	(0.032)	(0.018)	(0.017)	(0.015)	(0.014)
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.009	0.009	0.009	0.010	0.001	0.002	0.001	0.002
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Temporal split=0 × Population size (log)$_{t-1}$	-0.006	-0.002	-0.004	-0.001	-0.012	-0.007	-0.011	-0.006
	(0.024)	(0.024)	(0.024)	(0.023)	(0.024)	(0.024)	(0.023)	(0.023)
Temporal split=1 × Population size (log)$_{t-1}$	-0.002	0.001	-0.006	-0.003	-0.006	-0.001	-0.006	-0.002
	(0.023)	(0.023)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)	(0.025)
Temporal split=0 × Democracy level$_{t-1}$	0.002	0.002	0.002	0.002	0.002	0.003	0.003*	0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**	0.003**	0.003**	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Temporal split=0 × Ongoing civil war$_{t-1}$	0.106**	0.107**	0.075*	0.075	0.097***	0.097***	0.081***	0.079***
	(0.049)	(0.052)	(0.044)	(0.046)	(0.033)	(0.034)	(0.027)	(0.028)
Temporal split=1 × Ongoing civil war$_{t-1}$	0.074***	0.074***	0.079***	0.080***	0.073***	0.073***	0.078***	0.078***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.019)	(0.019)	(0.019)	(0.019)
Constant	0.217	0.433	0.200	0.427	0.067	0.231	0.061	0.186
	(0.275)	(0.300)	(0.239)	(0.272)	(0.218)	(0.258)	(0.227)	(0.262)
Countries/Observations	130/5849	130/5849	130/5849	130/5849	130/5849	130/5849	130/5849	130/5849
Country F-E	✓	✓	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table C1: Logit regressions

Table C1 reruns the main analyses with logit rather than LPM regressions. This leaves a maximum of 85 autocracies, but the results generally remain very similar. The only exception is in Model 6, where the interaction with the censored crisis indicator and natural resource revenues fails to achieve statistical significance for the 1960-2009 period. As discussed in the article, this is most likely due to the higher levels of estimation inefficiency related to the censored measurement, as only part of the variation is being utilized. All other models – including the censored crisis interaction coefficient for the 1901-2009 period sample in Model 4 – provide similar conclusions to the main analyses in the article.

Table C1. Logit regressions

	Structural break		**Natural resource interactions**			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-1.523	-7.048				
	(3.777)	(4.449)				
Temporal split=0 × Economic crisis$_{t-1}$	-3.286**					
	(1.391)					
Temporal split=1 × Economic crisis$_{t-1}$	0.602					
	(0.727)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-6.862***				
		(2.486)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		1.646				
		(1.469)				
Economic crisis$_{t-1}$			-2.493**	-1.556		
			(1.117)	(1.322)		
Natural resources (log)$_{t-1}$			-0.683***	-0.641**	-0.904*	-0.658
			(0.231)	(0.266)	(0.464)	(0.527)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.556***	0.443*		
			(0.200)	(0.226)		
Economic crisis (<1)$_{t-1}$					-2.808	-0.707
					(1.833)	(2.177)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.843*	0.516
					(0.469)	(0.530)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.194	0.093				
	(0.394)	(0.384)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	-0.130	-0.104				
	(0.298)	(0.291)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.359	-0.303				
	(0.533)	(0.531)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.279	-0.227				
	(0.547)	(0.543)				
Temporal split=0 × Democracy level$_{t-1}$	0.021	0.020				
	(0.036)	(0.036)				
Temporal split=1 × Democracy level$_{t-1}$	0.072***	0.074***				
	(0.026)	(0.026)				
Temporal split=0 × Ongoing civil war$_{t-1}$	1.831***	1.801***				
	(0.521)	(0.517)				
Temporal split=1 × Ongoing civil war$_{t-1}$	1.448***	1.501***				
	(0.260)	(0.266)				
GDP/cap (log)$_{t-1}$			0.229	0.071	0.243	0.087
			(0.349)	(0.467)	(0.344)	(0.463)
Population size (log)$_{t-1}$			-0.159	-1.980*	-0.114	-1.988*
			(0.638)	(1.040)	(0.634)	(1.044)
Democracy level$_{t-1}$			0.061***	0.058**	0.062***	0.061**
			(0.022)	(0.028)	(0.022)	(0.028)
Ongoing civil war$_{t-1}$			1.472***	1.362***	1.516***	1.442***
			(0.242)	(0.280)	(0.244)	(0.282)
Countries/Observations	85/4398	85/4398	83/3923	72/2559	83/3923	72/2559
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D1-D9: Alternative crisis specifications

This section provides robustness checks with different measures of economic crisis. Tables D1-D6 rerun the main analyses with different benchmarks, given by n in:

$$CT_{i,t} = \frac{GDP/cap_{i,t}}{\sum_{k=1}^{n} \frac{GDP/cap_{i,t-k}}{n}} \tag{1}$$

More specifically, the analysis provides results for n from 2 to 8. The overall results remain similar.

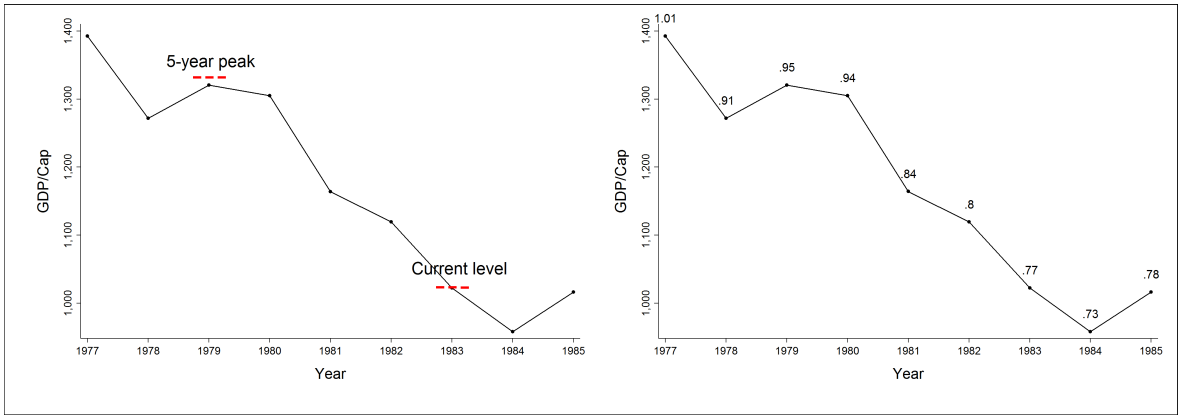
In addition, Table D7 shows the results with a more traditional GDP/cap growth rate (three-year moving average) measurement approach – both the full-range measure and a censored measure that only takes values below 0 (0 is given for all positive values).

Table D8 undertakes the analysis with a slightly different crisis measure: the current-peak approach (CP). Rather than calculating the previous five-year average, this approach simply locates the peak in the previous five years and then divides the current output level by the peak level. The approach is formalized in Equation (2) below and illustrated in Figure 1 as well:

$$CP_{i,t} = \frac{GDP/cap_{i,t}}{\max\{GDP/cap_{i,t-1}, GDP/cap_{i,t-2}, ...GDP/cap_{i,t-n}\}} \tag{2}$$

, where n constitutes how many years back the peak should be located.

Figure 1. Current-peak calculation for Nigeria in 1983 (left), all CP ratios (right)



Finally, Table D9 runs the models utilizing an economic slump dummy that is often used in the economic literature. In this approach, an economic crisis starts with a contraction of GDP/cap (at a time when it was higher than ever before in that country). It ends when GDP/cap is at or above its pre-crisis level. As I am not interested in momentary one-year contractions during which a crisis perception does not have time to materialize, I include a three-year criterion which requires the slump period to endure for at least three years in order to be classified as a crisis. To formalize this definition: for a country i, in year t, with a GDP/cap denoted by Y, an economic crisis begins when $Y_{i,t} < Y_{i,t-1}$ and $Y_{i,t-1}$ equals the maximum so far, and ends when $Y_{i,t+p} \geq Y_{i,t-1}$. It is required that $p \geq 3$ in order to classify the period as a crisis. As crisis periods are given the value 1 and non-crisis periods are given the value 0, the signs on the coefficients in this analysis are reversed.

Table D1. Alternative crisis specification, n=2

	Structural break		**Natural resource interactions**			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.027	-0.280				
	(0.241)	(0.279)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.128					
	(0.096)					
Temporal split=1 × Economic crisis$_{t-1}$	-0.025					
	(0.041)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.447**				
		(0.199)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		-0.091				
		(0.079)				
Economic crisis$_{t-1}$			-0.146*	-0.160*		
			(0.086)	(0.082)		
Natural resources (log)$_{t-1}$			-0.032**	-0.036***	-0.053**	-0.047**
			(0.014)	(0.013)	(0.022)	(0.022)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.026*	0.027**		
			(0.014)	(0.012)		
Economic crisis (<1)$_{t-1}$					-0.359**	-0.291*
					(0.150)	(0.160)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.050**	0.041*
					(0.022)	(0.022)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.023	0.023				
	(0.023)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.007	0.009				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.007	-0.002				
	(0.024)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.002	0.002				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.094**	0.094**				
	(0.040)	(0.041)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.072***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.016	0.013	0.019	0.015
			(0.012)	(0.010)	(0.012)	(0.010)
Population size (log)$_{t-1}$			-0.003	-0.042*	-0.000	-0.040*
			(0.016)	(0.022)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003***	0.003**	0.003***	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.078***	0.070***	0.077***	0.069***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.086	0.353	0.069	0.501**	0.228	0.592**
	(0.240)	(0.280)	(0.160)	(0.225)	(0.176)	(0.245)
Observations	5839	5839	5243	3885	5243	3885
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D2. Alternative crisis specification, n=3

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.068	-0.364				
	(0.235)	(0.276)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.181**					
	(0.084)					
Temporal split=1 × Economic crisis$_{t-1}$	-0.009					
	(0.034)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.483**				
		(0.188)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		-0.030				
		(0.062)				
Economic crisis$_{t-1}$			-0.154**	-0.138**		
			(0.069)	(0.064)		
Natural resources (log)$_{t-1}$			-0.032***	-0.034***	-0.048***	-0.039**
			(0.012)	(0.011)	(0.018)	(0.018)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.027**	0.025**		
			(0.011)	(0.010)		
Economic crisis (<1)$_{t-1}$					-0.299**	-0.200
					(0.125)	(0.126)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.045**	0.032*
					(0.018)	(0.017)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.026	0.024				
	(0.023)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.007	0.008				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.008	-0.003				
	(0.024)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.004	0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.093**	0.094**				
	(0.040)	(0.041)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.073***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.013	0.019	0.014
			(0.012)	(0.010)	(0.012)	(0.010)
Population size (log)$_{t-1}$			-0.004	-0.041*	-0.001	-0.040*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003***	0.003**	0.003***	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.078***	0.070***	0.077***	0.070***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.131	0.392	0.075	0.471**	0.175	0.508**
	(0.229)	(0.271)	(0.150)	(0.222)	(0.161)	(0.230)
Observations	5841	5841	5245	3885	5245	3885
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D3. Alternative crisis specification, n=4

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.052	-0.343				
	(0.231)	(0.269)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.172**					
	(0.078)					
Temporal split=1 × Economic crisis$_{t-1}$	-0.002					
	(0.030)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.431**				
		(0.171)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.006				
		(0.051)				
Economic crisis$_{t-1}$			-0.144**	-0.120**		
			(0.062)	(0.056)		
Natural resources (log)$_{t-1}$			-0.031***	-0.031***	-0.041***	-0.030**
			(0.011)	(0.010)	(0.015)	(0.015)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.025**	0.022**		
			(0.010)	(0.009)		
Economic crisis (<1)$_{t-1}$					-0.232**	-0.123
					(0.108)	(0.102)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.038**	0.023
					(0.015)	(0.014)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.027	0.024				
	(0.023)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.007	0.007				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.009	-0.004				
	(0.024)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.005	-0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.094**	0.094**				
	(0.040)	(0.041)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.074***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.013	0.018	0.013
			(0.012)	(0.010)	(0.012)	(0.011)
Population size (log)$_{t-1}$			-0.005	-0.041*	-0.002	-0.040*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003***	0.003**	0.003**	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.077***	0.070***	0.078***	0.071***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.119	0.353	0.065	0.452**	0.121	0.447**
	(0.224)	(0.260)	(0.148)	(0.220)	(0.153)	(0.220)
Observations	5845	5845	5249	3886	5249	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D4. Alternative crisis specification, n=6

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.023	-0.252				
	(0.227)	(0.257)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.148**					
	(0.066)					
Temporal split=1 × Economic crisis$_{t-1}$	0.006					
	(0.024)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.323**				
		(0.143)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.020				
		(0.047)				
Economic crisis$_{t-1}$			-0.120**	-0.096*		
			(0.052)	(0.050)		
Natural resources (log)$_{t-1}$			-0.028***	-0.028***	-0.035***	-0.028**
			(0.010)	(0.010)	(0.013)	(0.013)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.022***	0.019**		
			(0.008)	(0.008)		
Economic crisis (<1)$_{t-1}$					-0.175*	-0.103
					(0.089)	(0.092)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.031**	0.021*
					(0.013)	(0.013)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.028	0.023				
	(0.024)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.006	0.007				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.008	-0.004				
	(0.023)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.004	-0.000				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.094**	0.094**				
	(0.039)	(0.040)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.074***	0.075***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.012	0.017	0.012
			(0.012)	(0.010)	(0.012)	(0.011)
Population size (log)$_{t-1}$			-0.004	-0.040*	-0.002	-0.040*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003**	0.003**	0.003**	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.077***	0.069***	0.078***	0.071***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.082	0.254	0.032	0.427*	0.064	0.424*
	(0.214)	(0.244)	(0.146)	(0.218)	(0.149)	(0.218)
Observations	5853	5853	5254	3886	5254	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D5. Alternative crisis specification, n=7

	Structural break		**Natural resource interactions**			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.011	-0.253				
	(0.227)	(0.262)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.150**					
	(0.063)					
Temporal split=1 × Economic crisis$_{t-1}$	0.007					
	(0.023)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.328**				
		(0.145)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.023				
		(0.046)				
Economic crisis$_{t-1}$			-0.113**	-0.085*		
			(0.049)	(0.048)		
Natural resources (log)$_{t-1}$			-0.026***	-0.026***	-0.033***	-0.027**
			(0.010)	(0.010)	(0.012)	(0.013)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.020***	0.017**		
			(0.008)	(0.007)		
Economic crisis (<1)$_{t-1}$					-0.166*	-0.097
					(0.086)	(0.087)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.030**	0.020*
					(0.012)	(0.012)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.029	0.023				
	(0.024)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.006	0.006				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.009	-0.005				
	(0.023)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.005	-0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.092**	0.093**				
	(0.038)	(0.040)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.074***	0.075***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.012	0.017	0.012
			(0.013)	(0.011)	(0.013)	(0.011)
Population size (log)$_{t-1}$			-0.004	-0.039*	-0.002	-0.040*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003**	0.003**	0.003**	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.077***	0.069***	0.077***	0.071***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.078	0.259	0.025	0.416*	0.058	0.417*
	(0.212)	(0.246)	(0.146)	(0.217)	(0.149)	(0.217)
Observations	5855	5855	5255	3886	5255	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D6. Alternative crisis specification, n=8

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	0.003	-0.260				
	(0.226)	(0.264)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.145**					
	(0.064)					
Temporal split=1 × Economic crisis$_{t-1}$	0.008					
	(0.021)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.335**				
		(0.149)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.030				
		(0.045)				
Economic crisis$_{t-1}$			-0.103**	-0.078*		
			(0.047)	(0.045)		
Natural resources (log)$_{t-1}$			-0.025***	-0.025***	-0.031**	-0.025**
			(0.009)	(0.009)	(0.012)	(0.012)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.019**	0.016**		
			(0.007)	(0.007)		
Economic crisis (<1)$_{t-1}$					-0.151*	-0.082
					(0.085)	(0.084)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.028**	0.019*
					(0.012)	(0.011)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.030	0.024				
	(0.024)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.006	0.006				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.009	-0.005				
	(0.023)	(0.023)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.005	-0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.092**	0.093**				
	(0.038)	(0.040)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.074***	0.075***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.011	0.017	0.012
			(0.013)	(0.011)	(0.013)	(0.011)
Population size (log)$_{t-1}$			-0.003	-0.039*	-0.002	-0.039*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003**	0.003**	0.003**	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.077***	0.069***	0.078***	0.071***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.064	0.261	0.014	0.407*	0.045	0.406*
	(0.212)	(0.250)	(0.147)	(0.217)	(0.149)	(0.217)
Observations	5857	5857	5255	3886	5255	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D7. Alternative crisis specification, Economic growth (3-year MA)

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	0.115	0.090				
	(0.223)	(0.222)				
Temporal split=0 × Economic performance$_{t-1}$	-0.005***					
	(0.001)					
Temporal split=1 × Economic performance$_{t-1}$	0.000					
	(0.001)					
Temporal split=0 × Economic performance (<0)$_{t-1}$		-0.010***				
		(0.003)				
Temporal split=1 × Economic performance (<0)$_{t-1}$		0.000				
		(0.001)				
Economic performance$_{t-1}$			-0.004***	-0.002*		
			(0.001)	(0.001)		
Natural resources (log)$_{t-1}$			-0.006	-0.008*	-0.003	-0.007
			(0.004)	(0.005)	(0.004)	(0.005)
Economic performance$_{t-1}$ × Natural resources (log)$_{t-1}$			0.001***	0.000**		
			(0.000)	(0.000)		
Economic performance (<0)$_{t-1}$					-0.004*	-0.002
					(0.002)	(0.002)
Economic performance (<0)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.001**	0.000
					(0.000)	(0.000)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.027	0.024				
	(0.023)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.007	0.007				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.008	-0.003				
	(0.024)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.004	0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.093**	0.094**				
	(0.039)	(0.041)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.074***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.018	0.012	0.017	0.012
			(0.012)	(0.010)	(0.012)	(0.011)
Population size (log)$_{t-1}$			-0.004	-0.040*	-0.002	-0.041*
			(0.016)	(0.023)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003***	0.003**	0.003***	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.077***	0.071***	0.078***	0.072***
			(0.017)	(0.017)	(0.017)	(0.018)
Constant	-0.057	-0.084	-0.082	0.338	-0.104	0.336
	(0.209)	(0.205)	(0.150)	(0.220)	(0.156)	(0.221)
Observations	5838	5838	5242	3885	5242	3885
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D8. Alternative crisis specification, Peak-current approach

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	-0.054	-0.130				
	(0.232)	(0.235)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.143*					
	(0.082)					
Temporal split=1 × Economic crisis$_{t-1}$	0.003					
	(0.029)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.209*				
		(0.107)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.013				
		(0.037)				
Economic crisis$_{t-1}$			-0.108*	-0.093*		
			(0.057)	(0.055)		
Natural resources (log)$_{t-1}$			-0.023**	-0.024**	-0.024**	-0.021*
			(0.010)	(0.010)	(0.011)	(0.011)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.019**	0.017**		
			(0.008)	(0.008)		
Economic crisis (<1)$_{t-1}$					-0.120*	-0.075
					(0.068)	(0.068)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.020**	0.015
					(0.010)	(0.010)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.022	0.021				
	(0.023)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.006	0.006				
	(0.009)	(0.009)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.005	-0.004				
	(0.023)	(0.023)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.002	-0.001				
	(0.025)	(0.025)				
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.001)	(0.001)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.094**	0.094**				
	(0.040)	(0.040)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.074***	0.074***				
	(0.017)	(0.017)				
GDP/cap (log)$_{t-1}$			0.017	0.014	0.017	0.013
			(0.012)	(0.010)	(0.012)	(0.010)
Population size (log)$_{t-1}$			-0.003	-0.040*	-0.002	-0.041*
			(0.016)	(0.022)	(0.016)	(0.022)
Democracy level$_{t-1}$			0.003**	0.003**	0.003**	0.003**
			(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.078***	0.070***	0.078***	0.071***
			(0.017)	(0.017)	(0.017)	(0.017)
Constant	0.090	0.144	0.007	0.408*	0.010	0.398*
	(0.218)	(0.224)	(0.148)	(0.216)	(0.147)	(0.216)
Observations	5849	5849	5251	3886	5251	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table D9. Alternative crisis specification, Economic slump approach

	Structural break		Natural resource interactions	
	1875-2011	1875-2011	1901-2009	1960-2009
	(1)	(2)	(3)	(4)
Temporal split	-0.008	-0.008		
	(0.224)	(0.224)		
Temporal split=0 × Economic slump$_{t-1}$	0.027*	0.027*		
	(0.014)	(0.014)		
Temporal split=1 × Economic slump$_{t-1}$	0.008	0.008		
	(0.009)	(0.009)		
Economic slump$_{t-1}$			0.030**	0.029*
			(0.013)	(0.015)
Economic slump$_{t-1}$ × Natural resources (log)$_{t-1}$			-0.005**	-0.005*
			(0.003)	(0.003)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.021	0.021		
	(0.022)	(0.022)		
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.012	0.012		
	(0.009)	(0.009)		
Temporal split=0 × Population size (log)$_{t-1}$	-0.009	-0.009		
	(0.024)	(0.024)		
Temporal split=1 × Population size (log)$_{t-1}$	-0.003	-0.003		
	(0.026)	(0.026)		
Temporal split=0 × Democracy level$_{t-1}$	0.001	0.001		
	(0.002)	(0.002)		
Temporal split=1 × Democracy level$_{t-1}$	0.004***	0.004***		
	(0.001)	(0.001)		
Temporal split=0 × Ongoing civil war$_{t-1}$	0.090**	0.090**		
	(0.041)	(0.041)		
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.073***		
	(0.017)	(0.017)		
GDP/cap (log)$_{t-1}$			0.019	0.014
			(0.013)	(0.010)
Population size (log)$_{t-1}$			-0.008	-0.041*
			(0.017)	(0.024)
Democracy level$_{t-1}$			0.003**	0.003**
			(0.001)	(0.001)
Ongoing civil war$_{t-1}$			0.078***	0.072***
			(0.017)	(0.017)
Natural resources (log)$_{t-1}$			-0.001	-0.005
			(0.005)	(0.005)
Constant	-0.027	-0.027	-0.096	0.305
	(0.206)	(0.206)	(0.165)	(0.231)
Observations	5816	5816	5264	3869
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table E1-E4: Alternative natural resource revenue specifications

Tables E1-E4 show results with different natural resource revenue specifications. Table E1 changes the three-year moving average specification of natural resource revenues to a one-year measure without any moving averages. Interestingly, the results seem stronger and more consistently significant with this specification. It suggests that sudden spikes in resource revenues have immediate shielding effects and rapid drops create sudden crisis vulnerabilities in autocratic leaders. Table E2 runs the analysis by including only revenues from oil, with similar results. This suggests that the findings may be driven mostly by oil revenues, but it does not preclude that other natural resources, such as gas and precious metals, exert the same effects. Table E3 examines the moderating effect of non-oil natural resource revenues. The results show similar patterns, although the product term is only significant in Model 3. Table E4 provides the same analysis on a restricted sample that excludes countries who have not received any non-oil natural resource income at any point in their history. That is, only countries that have at least one year in which they have received revenues from natural resources other than oil are included in the sample. This approach might potentially alleviate some of the inefficiency issues that accompany the fact that a major proportion of countries score 0 on the non-oil revenue variable. Here, both product terms with the censored crisis variable reveal significant effects. Thus, we may conclude that non-oil natural resources seem to exert the same moderating effects as oil revenues, but the effects are inconsistent. This might be due to the low level of variation on this variable, as the majority of natural resource revenues come from oil. Yet the fact that we do see some moderating effects supports the notion that both oil and non-oil resource revenues are able to act as a shield for crisis-ridden autocrats.

Table E1. Alternative natural resource revenue specifications, current year revenue

	(1)	(2)	(3)	(4)
Economic crisis$_{t-1}$	-0.137**	-0.110**		
	(0.059)	(0.055)		
Natural resources (log)$_{t-1}$	-0.032***	-0.030***	-0.042***	-0.030**
	(0.011)	(0.010)	(0.015)	(0.014)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$	0.024***	0.021**		
	(0.009)	(0.009)		
Economic crisis (<1)$_{t-1}$			-0.207**	-0.114
			(0.100)	(0.096)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$			0.038**	0.024*
			(0.014)	(0.014)
GDP/cap (log)$_{t-1}$	0.021	0.015	0.021	0.015
	(0.013)	(0.011)	(0.013)	(0.011)
Population size (log)$_{t-1}$	-0.003	-0.046*	-0.001	-0.047*
	(0.017)	(0.025)	(0.017)	(0.024)
Democracy level$_{t-1}$	0.003**	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$	0.078***	0.071***	0.079***	0.073***
	(0.017)	(0.017)	(0.017)	(0.018)
Constant	0.017	0.473**	0.062	0.477**
	(0.152)	(0.235)	(0.152)	(0.230)
Observations	5113	3752	5113	3752
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) are not shown in order to save space.

Table E2. Alternative natural resource revenue specifications, only oil revenues

	(1)	(2)	(3)	(4)
Economic crisis$_{t-1}$	-0.113***	-0.085**		
	(0.041)	(0.041)		
Oil (log)$_{t-1}$	-0.027***	-0.027***	-0.038***	-0.026**
	(0.009)	(0.009)	(0.012)	(0.012)
Economic crisis$_{t-1}$ × Oil (log)$_{t-1}$	0.021***	0.019***		
	(0.007)	(0.007)		
Economic crisis (<1)$_{t-1}$			-0.182**	-0.089
			(0.078)	(0.079)
Economic crisis (<1)$_{t-1}$ × Oil (log)$_{t-1}$			0.036***	0.020*
			(0.011)	(0.011)
GDP/cap (log)$_{t-1}$	0.016	0.010	0.016	0.010
	(0.011)	(0.010)	(0.012)	(0.011)
Population size (log)$_{t-1}$	-0.005	-0.043*	-0.002	-0.044*
	(0.022)	(0.023)	(0.023)	(0.023)
Democracy level$_{t-1}$	0.003**	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$	0.075***	0.070***	0.075***	0.071***
	(0.016)	(0.017)	(0.017)	(0.017)
Constant	0.117	0.438**	0.164	0.451**
	(0.229)	(0.221)	(0.231)	(0.217)
Observations	5686	3887	5686	3887
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Cubic polynomials (t,t^2,t^3) are not shown in order to save space.

Table E3. Alternative natural resource revenue specifications, only non-oil resource revenues

	(1)	(2)	(3)	(4)
Economic crisis$_{t-1}$	-0.036	-0.014		
	(0.052)	(0.048)		
Non-oil resources (log)$_{t-1}$	-0.010	-0.009	-0.036*	-0.029
	(0.015)	(0.014)	(0.020)	(0.019)
Economic crisis$_{t-1}$ × Non-oil resources (log)$_{t-1}$	0.006	0.004		
	(0.012)	(0.011)		
Economic crisis (<1)$_{t-1}$			-0.151	-0.084
			(0.093)	(0.088)
Economic crisis (<1)$_{t-1}$ × Non-oil resources (log)$_{t-1}$			0.034*	0.024
			(0.019)	(0.018)
GDP/cap (log)$_{t-1}$	0.012	0.004	0.012	0.005
	(0.011)	(0.009)	(0.011)	(0.010)
Population size (log)$_{t-1}$	-0.006	-0.043	-0.004	-0.041
	(0.018)	(0.026)	(0.018)	(0.026)
Democracy level$_{t-1}$	0.003**	0.003**	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$	0.079***	0.072***	0.078***	0.070***
	(0.017)	(0.017)	(0.017)	(0.017)
Constant	-0.002	0.409	0.092	0.463*
	(0.172)	(0.267)	(0.171)	(0.258)
Observations	5251	3886	5251	3886
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) are not shown in order to save space.

Table E4. Alternative natural resource revenue specifications, only non-oil resource revenues and non-oil resource sample

	(1)	(2)	(3)	(4)
Economic crisis$_{t-1}$	-0.027	-0.016		
	(0.054)	(0.052)		
Non-oil resources (log)$_{t-1}$	-0.008	-0.009	-0.037*	-0.033*
	(0.015)	(0.015)	(0.019)	(0.018)
Economic crisis$_{t-1}$ × Non-oil resources (log)$_{t-1}$	0.005	0.004		
	(0.013)	(0.012)		
Economic crisis (<1)$_{t-1}$			-0.152*	-0.105
			(0.086)	(0.080)
Economic crisis (<1)$_{t-1}$ × Non-oil resources (log)$_{t-1}$			0.035*	0.029*
			(0.018)	(0.017)
GDP/cap (log)$_{t-1}$	0.011	0.002	0.011	0.002
	(0.012)	(0.010)	(0.012)	(0.010)
Population size (log)$_{t-1}$	0.000	-0.046	0.001	-0.045
	(0.018)	(0.028)	(0.018)	(0.027)
Democracy level$_{t-1}$	0.003***	0.004***	0.003***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Ongoing civil war$_{t-1}$	0.072***	0.065***	0.070***	0.064***
	(0.018)	(0.018)	(0.018)	(0.019)
Constant	-0.053	0.450	0.054	0.529*
	(0.181)	(0.292)	(0.171)	(0.276)
Observations	4670	3452	4670	3452
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) are not shown in order to save space.

Table F1: Autocratic regime controls

Table F1 provides more extensive model specifications by including autocratic regime controls for party dictatorship, military dictatorship, and monarchy (personalist dictatorship as reference category). The upshot of including these regime variables is systematic missing values for some countries, but they do on the other hand provide a more rigorous model specification that takes into account differences in survival strategies across different autocratic regime types. The results here are also almost identical to the main analyses.

Table F1. Autocratic regime controls

	Structural break		**Natural resource interactions**			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	0.011	-0.259				
	(0.252)	(0.279)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.153**					
	(0.075)					
Temporal split=1 × Economic crisis$_{t-1}$	0.009					
	(0.028)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.378**				
		(0.160)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		0.025				
		(0.049)				
Economic crisis$_{t-1}$			-0.124**	-0.106**		
			(0.058)	(0.053)		
Natural resources (log)$_{t-1}$			-0.026**	-0.030***	-0.037**	-0.030**
			(0.011)	(0.011)	(0.014)	(0.014)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.022**	0.023***		
			(0.009)	(0.008)		
Economic crisis (<1)$_{t-1}$					-0.199**	-0.112
					(0.098)	(0.095)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.036**	0.025*
					(0.014)	(0.013)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.027	0.023				
	(0.025)	(0.025)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.004	0.005				
	(0.010)	(0.011)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.019	-0.015				
	(0.024)	(0.024)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.012	-0.009				
	(0.026)	(0.026)				
Temporal split=0 × Democracy level$_{t-1}$	0.000	0.001				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.003**	0.003**				
	(0.002)	(0.002)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.108**	0.108**				
	(0.042)	(0.044)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.067***	0.067***				
	(0.019)	(0.019)				
Temporal split=0 × Military regime$_{t-1}$	-0.008	-0.008				
	(0.016)	(0.016)				
Temporal split=1 × Military regime$_{t-1}$	-0.023	-0.024				
	(0.019)	(0.019)				
Temporal split=0 × Party regime$_{t-1}$	0.004	0.002				
	(0.029)	(0.029)				
Temporal split=1 × Party regime$_{t-1}$	-0.030	-0.030				
	(0.019)	(0.019)				
Temporal split=0 × Monarchy$_{t-1}$	0.029	0.029				
	(0.022)	(0.022)				
Temporal split=1 × Monarchy$_{t-1}$	0.005	0.005				
	(0.037)	(0.037)				
GDP/cap (log)$_{t-1}$			0.013	0.007	0.013	0.009
			(0.015)	(0.013)	(0.015)	(0.013)
Population size (log)$_{t-1}$			-0.015	-0.046*	-0.013	-0.047*
			(0.016)	(0.024)	(0.016)	(0.024)
Democracy level$_{t-1}$			0.003**	0.003*	0.003**	0.003*
			(0.001)	(0.002)	(0.001)	(0.002)
Ongoing civil war$_{t-1}$			0.075***	0.060***	0.075***	0.062***
			(0.019)	(0.019)	(0.019)	(0.019)
Military regime$_{t-1}$			-0.015	-0.031	-0.015	-0.030
			(0.015)	(0.020)	(0.015)	(0.020)
Party regime$_{t-1}$			-0.022	-0.024	-0.021	-0.022
			(0.023)	(0.019)	(0.023)	(0.018)
Monarchy$_{t-1}$			0.029	-0.037	0.031	-0.026
			(0.030)	(0.049)	(0.030)	(0.048)
Constant	0.166	0.378	0.148	0.545**	0.196	0.534**
	(0.224)	(0.259)	(0.153)	(0.232)	(0.156)	(0.234)
Observations	5448	5448	4882	3563	4882	3563
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table G1-G2: Irregular and regular leader failures

Table G1 modifies the dependent variable by, first, including all leader failures, and second, by including only regular leader failures (e.g. leader turnovers via negotiated pacts). The results with all leader failures remain similar to the main results. This shows that the findings in this study are not simply an artifact of the way the dependent variable is constructed.

The results with regular leader removals, in turn, yield weak and inconsistent effects. This suggests that the strongest effects are indeed on irregular leader removal, and fits well into the theoretical argument, which explicitly discussed how economic crises increase the likelihood of instability events such as coups, civil wars, and revolutions, as well as how such mobilizations are dampened in regimes with natural resources.

Table G1. All leader failures

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	0.114	-0.204				
	(0.341)	(0.377)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.183*					
	(0.104)					
Temporal split=1 × Economic crisis$_{t-1}$	-0.038					
	(0.046)					
Temporal split=0 × Economic crisis (<1)$_{t-1}$		-0.458*				
		(0.235)				
Temporal split=1 × Economic crisis (<1)$_{t-1}$		-0.024				
		(0.093)				
Economic crisis$_{t-1}$			-0.274***	-0.293***		
			(0.088)	(0.098)		
Natural resources (log)$_{t-1}$			-0.058***	-0.066***	-0.081***	-0.076***
			(0.015)	(0.015)	(0.024)	(0.025)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.043***	0.046***		
			(0.013)	(0.014)		
Economic crisis (<1)$_{t-1}$					-0.436**	-0.373**
					(0.167)	(0.184)
Economic crisis (<1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.071***	0.060**
					(0.025)	(0.026)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.048	0.042				
	(0.036)	(0.036)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.017	0.015				
	(0.015)	(0.015)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.051	-0.044				
	(0.046)	(0.046)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.045	-0.039				
	(0.049)	(0.049)				
Temporal split=0 × Democracy level$_{t-1}$	0.016***	0.016***				
	(0.003)	(0.003)				
Temporal split=1 × Democracy level$_{t-1}$	0.013***	0.013***				
	(0.002)	(0.002)				
Temporal split=0 × Ongoing civil war$_{t-1}$	0.060	0.060				
	(0.048)	(0.049)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.073***	0.074***				
	(0.025)	(0.025)				
GDP/cap (log)$_{t-1}$			0.046**	0.048***	0.044**	0.045***
			(0.018)	(0.017)	(0.018)	(0.016)
Population size (log)$_{t-1}$			-0.091**	-0.129**	-0.085**	-0.123**
			(0.040)	(0.052)	(0.040)	(0.051)
Democracy level$_{t-1}$			0.014***	0.013***	0.014***	0.013***
			(0.002)	(0.002)	(0.002)	(0.002)
Ongoing civil war$_{t-1}$			0.066***	0.063**	0.067***	0.066**
			(0.024)	(0.026)	(0.024)	(0.027)
Constant	0.445	0.704*	0.924***	1.188**	1.030***	1.215**
	(0.370)	(0.401)	(0.340)	(0.490)	(0.362)	(0.518)
Countries/Observations	130/5849	130/5849	126/5251	117/3886	126/5251	117/3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table G2. Regular leader failures

	Structural break		Natural resource interactions			
	1875-2011	1875-2011	1901-2009	1960-2009	1901-2009	1960-2009
	(1)	(2)	(3)	(4)	(5)	(6)
Temporal split	0.155	0.080				
	(0.199)	(0.220)				
Temporal split=0 × Economic crisis$_{t-1}$	-0.014					
	(0.078)					
Temporal split=1 × Economic crisis$_{t-1}$	-0.025					
	(0.027)					
Temporal split=0 × Economic crisis ($\leq$1)$_{t-1}$		-0.056				
		(0.168)				
Temporal split=1 × Economic crisis ($\leq$1)$_{t-1}$		0.019				
		(0.061)				
Economic crisis$_{t-1}$			-0.095*	-0.114*		
			(0.053)	(0.064)		
Natural resources (log)$_{t-1}$			-0.017**	-0.024**	-0.015	-0.019
			(0.009)	(0.010)	(0.016)	(0.018)
Economic crisis$_{t-1}$ × Natural resources (log)$_{t-1}$			0.013*	0.015*		
			(0.007)	(0.009)		
Economic crisis ($\leq$1)$_{t-1}$					-0.082	-0.080
					(0.123)	(0.142)
Economic crisis ($\leq$1)$_{t-1}$ × Natural resources (log)$_{t-1}$					0.012	0.010
					(0.017)	(0.019)
Temporal split=0 × GDP/cap (log)$_{t-1}$	0.020	0.018				
	(0.024)	(0.023)				
Temporal split=1 × GDP/cap (log)$_{t-1}$	0.018	0.015				
	(0.012)	(0.011)				
Temporal split=0 × Population size (log)$_{t-1}$	-0.056*	-0.055*				
	(0.030)	(0.030)				
Temporal split=1 × Population size (log)$_{t-1}$	-0.055*	-0.054*				
	(0.031)	(0.030)				
Temporal split=0 × Democracy level$_{t-1}$	0.013***	0.013***				
	(0.002)	(0.002)				
Temporal split=1 × Democracy level$_{t-1}$	0.009***	0.009***				
	(0.002)	(0.002)				
Temporal split=0 × Ongoing civil war$_{t-1}$	-0.029	-0.029				
	(0.030)	(0.030)				
Temporal split=1 × Ongoing civil war$_{t-1}$	0.008	0.010				
	(0.021)	(0.021)				
GDP/cap (log)$_{t-1}$			0.025*	0.039**	0.022	0.036**
			(0.013)	(0.016)	(0.013)	(0.016)
Population size (log)$_{t-1}$			-0.100***	-0.095**	-0.098***	-0.092**
			(0.031)	(0.041)	(0.031)	(0.040)
Democracy level$_{t-1}$			0.010***	0.010***	0.010***	0.010***
			(0.001)	(0.002)	(0.001)	(0.002)
Ongoing civil war$_{t-1}$			-0.002	0.004	-0.000	0.006
			(0.019)	(0.023)	(0.019)	(0.023)
Constant	0.438	0.483*	0.871***	0.712*	0.859***	0.680
	(0.265)	(0.285)	(0.278)	(0.409)	(0.300)	(0.432)
Observations	5849	5849	5251	3886	5251	3886
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Cubic polynomials (t,t^2,t^3) and their interactions with the temporal split variable are not shown in order to save space.

Table H1: IV analysis without regional irregular leader removal

Table H1 reruns the IV analysis with the regional irregular leader removal variable excluded from the analysis in order to address potential issues of post-estimation bias. The results remain the same.

Table H1. IV regressions of economic performance on irregular leader removals

	1875-1959		1960-2010		No resource rev.		Resource rev.	
	(11)	(12)	(13)	(14)	(15)	(16	(17)	(18)
Panel A: Two-stage least squares								
Economic crisis	-0.374**		-0.015		-0.322**		-0.022	
	(0.145)		(0.065)		(0.152)		(0.059)	
Economic crisis (<1)		-0.860**		-0.035		-0.754**		-0.052
		(0.336)		(0.150)		(0.359)		(0.142)
GDP/cap (log)	0.060*	0.033	-0.006	-0.006	0.070**	0.051**	0.015	0.014*
	(0.034)	(0.030)	(0.012)	(0.011)	(0.030)	(0.025)	(0.009)	(0.008)
Population size (log)	-0.023	-0.005	-0.051***	-0.050***	-0.049*	-0.039	-0.017	-0.017
	(0.042)	(0.045)	(0.013)	(0.013)	(0.030)	(0.031)	(0.016)	(0.016)
Democracy level	0.003	0.004	0.003*	0.003*	0.003	0.003	-0.000	0.000
	(0.003)	(0.003)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Ongoing civil war	0.128***	0.133***	0.089***	0.088***	0.121***	0.120***	0.109***	0.109***
	(0.041)	(0.043)	(0.017)	(0.018)	(0.031)	(0.032)	(0.025)	(0.025)
Panel B: First-stage estimates for economic performance								
Global economic crisis	0.822***	0.356***	1.090***	0.469***	0.706***	0.302***	1.241***	0.519***
	(0.102)	(0.053)	(0.114)	(0.072)	(0.095)	(0.052)	(0.130)	(0.076)
Kleibergen–Paap F statistic	66.59	45.73	86.00	40.77	55.55	33.10	90.32	47.22
Countries/Observations	68/1840	68/1840	119/3966	119/3966	88/2545	88/2545	108/3134	108/3134
Country F-E	✓	✓	✓	✓	✓	✓	✓	✓
Cubic polynomials (t,t^2,t^3)	✓	✓	✓	✓	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Panels A and B report coefficients from the second and first stage of two-stage estimations.

First stage controls and cubic polynomials (t,t^2,t^3) are not reported in order to save space.

Table I1-I2: Robustness checks for analyses illustrating the theoretical mechanisms

Tables I1-I2 provide robustness checks for the final analysis in the article, which examines the proposed mechanisms. Table I1 presents error correction models for Model 15 and Model 20 in Table 3 in the article. The conclusions remain the same. Table I2 provides four models: Model 1 reruns Model 15 in Table 3 from the article with natural resource tax revenues. Model 2 reruns Model 18 in Table 3 from the article by focusing only on economic protest events (anti-government protests and strikes), and Models 3-4 provide the instability analyses with Poisson count models. The conclusions do not change in any of these models.

Table I1. Error correction models

	ΔNatural resource revenues (1)	ΔCredit rating (2)
ΔEconomic crisis	0.245	6.293**
	(0.451)	(2.635)
Economic crisis	0.147	6.831***
	(0.317)	(1.478)
ΔNatural resources (log)	0.456**	0.150
	(0.196)	(0.271)
Natural resources (log)	0.056	-0.018
	(0.044)	(0.081)
ΔGDP/cap (log)	0.885	-5.804*
	(0.899)	(3.025)
GDP/cap (log)	-0.029	-0.299
	(0.068)	(0.431)
ΔPopulation size (log)	-0.767**	2.088
	(0.378)	(3.236)
Population size (log)	0.000	-1.634
	(0.126)	(1.009)
ΔDemocracy level	-0.005	-0.073
	(0.006)	(0.046)
Democracy level	-0.000	0.046
	(0.006)	(0.031)
ΔOngoing civil war	0.085	-0.340
	(0.052)	(0.368)
Ongoing civil war	-0.043	-0.326
	(0.079)	(0.331)
Constant	-0.228	8.262
	(1.130)	(10.183)
Observations	684	1541
Country F-E	✓	✓
Year F-E	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table I2. Alternative model specifications

	OLS models		Poisson models	
	Resource tax revenues	Economic protests	Instability	Economic protests
	(1)	(2)	(3)	(4)
Economic crisis	0.914	-1.279***	-1.830***	-3.256***
	(0.789)	(0.363)	(0.084)	(0.488)
Natural resources (log)	0.204**	-0.156**	-0.161***	-0.340***
	(0.088)	(0.070)	(0.019)	(0.106)
Economic crisis × Natural resources (log)		0.157**	0.095***	0.358***
		(0.062)	(0.017)	(0.094)
GDP/cap (log)	1.087*	-0.035	-0.122***	-0.019
	(0.610)	(0.103)	(0.027)	(0.167)
Population size (log)	-0.004	0.010	-0.775***	0.707*
	(1.200)	(0.238)	(0.069)	(0.397)
Democracy level	0.011	0.002	0.015***	0.011
	(0.019)	(0.007)	(0.001)	(0.008)
Ongoing civil war	0.110	0.955***	0.885***	1.116***
	(0.155)	(0.085)	(0.015)	(0.076)
Constant	-8.012	1.740		
	(11.253)	(2.358)		
Observations	1514	3451	3446	3031
Country F-E	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓

Standard errors (clustered on country) in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$