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Urban Protests, Coups d'état and Post-Coup Regime Change

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Abstract:
This study investigates the impact of urban protests on coup attempts and subsequent regime change in a sample of 39 Sub-Saharan African countries for the period from 1990 to 2007. Widespread public discontent, especially when occurring in urban centers, can act as a trigger of coups d'état in autocratic regimes. Yet, it is less clear how elites respond to protests in terms of post-coup institutional change and democratization. To account for potential endogeneity of protests and coups, variation in rainfall is used as an instrument for urban protests. The results show that rainfall-related urban protests raise the likelihood that a coup is staged, but have no effect on subsequent democratization.

Keywords: Coup d'état, public protest, regime change, autocracy
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1 Introduction

The recently observed interplay of public protests and irregular leadership removals staged by regime elites has fueled research on the role of public uprisings as a trigger of coups d'état (Gassebner, Gutmann & Voigt, 2016; Johnson & Thyne, 2016; Powell, 2012). In contrast, much less research has been devoted to the question of how public revolts affect post-coup institutional change in terms of democratization and anecdotal evidence is ambiguous. For instance, Egypt's armed forces overthrew the country's first democratically elected president Mohamed Morsi in a popularly-backed coup in 2013 after widespread demonstrations against his Islamic government, claiming that the military would "remain away from politics" and pave the way to presidential elections (Kirkpatrick, 2013). Yet, in 2014 coup leader and former general al-Sisi was approved as president, consolidating what critics claim to be an authoritarian security state. Similarly, in May 2014 the government in Thailand was removed from office by military forces that claimed to stage a "guardian coup" aimed at enforcing popular calls for political reforms and an end to corruption. However, after having seized power, the new (military) government increased repression and repeatedly delayed national elections (Fuller, 2014). This study explores the interaction of regime elites and the public by investigating the impact of public protests on the occurrence of coup attempts and subsequent political regime change.

From a theoretical perspective, public protests have been argued to provide a signal of government illegitimacy, thereby increasing both the disposition and the ability of a (formerly loyal) regime elite to remove an incumbent government with unconstitutional means (Apolte, 2015; Casper & Tyson, 2014). In contrast, the hypothesized direction of the effect of public unrest on post-coup regime change is more ambiguous. The traditional view is that regime elites have little incentive to extent political participation in the aftermath of a successful coup (Derpanopoulos et al., 2016). Yet, public protests might impose what Acemoglu and Robinson (2006) call a "revolutionary threat" on elites, forcing them to respond to calls for democratic reforms after having removed a disliked leader from office (Thyne & Powell, 2016). For this mechanism to be plausible, however, the intensity of a potential threat must be sufficiently high both before and after the coup is staged. Hence, it might suffice for the elite to stage a preemtive coup in order to avoid more dramatic regime changes and suppress public discontent (Gilli & Li, 2015). More generally speaking, public protests might open a window of opportunity for regime elites to stage a coup and install a new leader, while at the same time responding to public calls for reform without substantial political change (Dorsch & Maarek, 2015).

This study investigates the impact of urban protests on coup attempts and post-coup regime change for a sample of 39 Sub-Saharan African (SSA) countries over the period from 1990 to 2007. We focus on urban protests as an important source of changing elite perceptions because urban dwellers are geographically concentrated and thus more likely to engage in collective action and to attract the attention of political elites than

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citizens in sparsely populated areas (Johnson & Thyne, 2016). The main difficulty in testing the link between protests and coups is that public revolts are rarely exogenous to coup risk. Following Aidt and Leon (2016) and Dorsch and Maarek (2015), we therefore exploit exogenous variation in rainfall to create an IV for protests. Since rain-fed agriculture accounts for a substantial part of African GDP, our focus is on SSA countries.[1] There is a considerable amount of evidence suggesting that extreme weather shocks and social unrest are closely linked in SSA countries through resource competition and rising food prices (Hendrix & Salehyan, 2012; Raleigh, Choi & Kniveton, 2015). In addition, many African countries have been prone to political instability and repeated cycles of extra-constitutional violence, rendering this region a relevant research subject from a policy perspective.

Regarding the impact of urban unrest on post-coup regime change, we investigate how protests affect the likelihood that a coup attempt leads to a subsequent institutional change, either in terms of a democratic transition, an autocratic regime change or autocratic stability based on the classification of Cheibub, Gandhi, and Vreeland (2010) .

The next section describes the data set, while section 3 presents the econometric model. In sections 4 and 5, we discuss our estimation results. Section 6 concludes.

2 Data

For our dependent variables, we use the dataset provided by Powell and Thyne (2011) who define coup attempts as "illegal and overt attempts by the military or other elites within the state apparatus to unseat the sitting head of state using unconstitutional means" (p. 252). We create a binary coup variable indicating whether there is a coup attempt in a given country-year. To identify instances of post-coup regime changes, we compute different binary regime-change variables that indicate whether a coup attempt is followed by a specific type of regime change (e.g. a change from one autocratic to another autocratic regime). To this end, we use the regime data set of Cheibub, Gandhi, and Vreeland (2010) who distinguish between three democratic (parliamentary, mixed, or presidential) and three autocratic (royal, military, or civilian) regime types.

Data on public protests in SSA is available from the Social Conflict in Analysis Database (SCAD) version 3.1 (Salehyan & Hendrix, 2014). Our protest variable captures the intensity of social unrest by measuring the logged sum of the duration (in days) of all relevant protest events in a given country-year. Since we focus on urban unrest, we only include protest events that are located in areas with a population density of more than 100 individuals per square kilometer (obtained from Aidt and Leon (2016)).

To obtain the rainfall-related IVs, we use data from Miguel, Satyanath, and Sergenti (2004), Miguel and Satyanath (2011), and Ciccone (2011) that originate from the Global Precipitation Climatory Project. We compute our baseline instrument drought as a binary variable that equals one if average precipitation in a given country-year is below the 20th percentile of the sample distribution of annual rainfall (470.68 mm per year). Since there is substantial regional heterogeneity of precipitation across African countries with most drought years occurring in Western Africa (see Table 1), we interact our drought instrument with region dummies for Western, Eastern, Middle and Southern Africa.

Table 1: Summary statistics.

	Obs	Mean	SD	Min	Max
Coup	682	0.056	0.23	0	1
Post-coup autocratic change, binary	624	0.0144	0.119	0	1
Post-coup autocratic stability, binary	624	0.0304	0.172	0	1
Post-coup democratic transition, binary	624	0.0160	0.126	0	1
Post-coup regime change, categorial	623	−0.0337	0.235	−1	1
Urban protest, logs	682	0.464	1.063	0	6.004
Protest, not weighted (logs)	682	2.424	1.74	0	6.582
GDP p.c. growth	682	0.007	0.059	−0.502	0.371
Drought	682	0.17	0.376	0	1
Drought × Western Africa dummy	682	0.081	0.272	0	1
Drought × Eastern Africa dummy	682	0.004	0.066	0	1
Drought × Middle Africa dummy	682	0.037	0.188	0	1
Drought × Southern Africa dummy	682	0.048	0.215	0	1
Extractive price shock	682	−0.008	0.891	−6.208	7.529
GDP p.c., logs	682	6.335	0.9424	4.733	9.022
Autocracy	682	0.773	0.419	0	1
Regime duration	682	18.609	13.864	1	61
Military expenditure, logs	585	22.384	3.0127	4.0395	30.912

As the most important control variable we include GDP per capita growth from the World Development Indicators (WDI) (World Bank, 2015). In addition, we use variation in international commodity prices as an instrument for economic growth. More precisely, we include annual changes in a country's extractive commodity price index as constructed by Bazzi and Blattman (2014). In some specifications, we include additional control variables. Data for (logged) GDP p.c. levels and total military expenditure is obtained from the WDI. To control for the political regime, we include a dummy variable for autocratic regimes and the age of the current regime (before the coup is staged). Both variables are taken from Cheibub, Gandhi, and Vreeland (2010). In addition, we calculate the time passed since the last coup attempt (in years), its square and cubic term following Carter and Signorino (2010) .

3 Empirical strategy

To investigate the link between urban protests and coup attempts, we specify our structural model as follows:

$$\begin{aligned} \text{coup indicator}_{i,t} &= \alpha + \beta ln(\text{urban protest})_{i,t} + \gamma \text{GDP p.c .growth}_{i,t} \\ &\quad + \mathbf{X}'_{i,t-1}\Lambda + \theta_i + \mu_t + \varepsilon_{i,t} \end{aligned} \tag{1}$$

In the first part of the empirical analysis, the dependent variable coup indicates whether there is a coup attempt in a given country-year. In the second part, we include different indicator variables for specific types of post-coup regime change. *ln*(urban protest) is the logged duration (in days) of all protest events located in urban areas in a given country-year. Country (θ_i) and year (μ_t) fixed effects are included and the error term (ε) is allowed to be heteroscedastic and serially correlated. In addition to annual GDP p.c. growth, some specifications include further control variables, captured by the vector $\mathbf{X}$. Since coup attempts are expected to be influenced by recently observed changes in the environment of the elite, we regress coups on the contemporaneous protest intensity and economic growth, while we lag the additional control variables (reflecting structural causes of coup risk) by one year[2].

The main problem associated with the estimation specification is that urban protests are likely to be endogenous to coup risk. The expectation of a coup plot itself might lead to riots, and unobserved variables could drive both, public protests and coup attempts. To isolate exogenous variation in urban protests, we follow Aidt and Leon (2016) and Dorsch and Maarek (2015) and use extreme negative rainfall variation (i.e. droughts) as an instrument for urban protests. Since weather-related shocks spur grievances and urban populations strongly depend on domestic agricultural commodity supply in SSA countries (Dell, Jones & Olken, 2014), isolating urban protest events that are triggered by weather-related shocks helps to identify variation in protests that is exogenous to coup risk. To satisfy the exclusion restriction, droughts should affect coup attempts only through urban protests, *conditional* on control variables such as economic growth. In contrast to the vulnerability of large parts of the population to shocks in agricultural output, regime elites in SSA countries are assumed to rely on a more diversified income portfolio that makes them less vulnerable to weather shocks (Bazzi & Blattman, 2014). In particular, elites usually control the rents from international trade in extractive resources and thus, are not directly affected by negative rainfall shocks. In addition, controlling for economic growth is important as economic downturns are likely to affect both elite perceptions and public grievances. If the coefficient estimate of urban protest remains statistically significant upon the inclusion of income growth, weather-driven urban protests affect coup risk through channels *other* than economic growth (e.g. through challenging state legitimacy). Yet, GDP p.c. growth is likely to be endogenous to coup risk as well. To account for this potential caveat, we employ extractive commodity price shocks from Bazzi and Blattman (2014) as an instrument for economic growth.

4 Results for protests and coup incidence

We start our empirical analysis by investigating the effect of urban protests on the likelihood that a coup is staged. Table 2 presents ordinary least squares (OLS) estimations of our structural equation (1). The estimate of urban protest in model (1) is positive and significant, pointing to a positive correlation between urban unrest and the likelihood of a coup attempt. The coefficient of GDP p.c. growth has the expected negative sign and is significant, supporting the notion that economic growth tends to reduce the risk of a coup (Kim, 2014). Since coup is a binary indicator, we also estimate a fixed effects logit model in column (2) and show that the estimates are robust across estimation techniques. In model (3), we include lagged values of urban protest. The insignificant coefficient suggests that protests have an immediate rather than a postponed impact on coup attempts. In

column (4) we include additional variables that have been discussed in the literature on coup attempts. While our main explanatory variables remain significant, none of the additional controls significantly predict coup attempts.

Table 2: Urban protests and coup attempts – OLS estimates.

Dependent variable: Coup	**OLS (1)**	**Logit (2)**	**OLS (3)**	**OLS (4)**
Urban protest$_t$, logs	0.0173**	0.381*	0.0239**	0.0197**
	(0.00852)	(0.225)	(0.0103)	(0.00889)
GDP p.c. growth$_t$	−0.772***	−11.06***	−0.902***	−0.783**
	(0.265)	(3.644)	(0.263)	(0.295)
Urban protest$_{t-1}$, logs			−0.0111	
			(0.00864)	
GDP p.c. levels$_{t-1}$, logs				0.00497
				(0.105)
Autocracy$_{t-1}$				0.0324
				(0.0408)
Regime age$_{t-1}$				0.00248
				(0.00169)
Military expenditure$_{t-1}$, logs				0.00224
				(0.00636)
Country FE	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Time since last coup	Y	Y	Y	Y
(Pseudo) R-squared	0.069	0.210	0.082	0.098
Observations	682	324	643	582

OLS, Ordinary least square estimations. Column (2) reports conditional logit coefficients. Robust standard errors in parentheses. Significance levels: ***p < 0.01, **p < 0.05, *p < 0.1.

Since endogeneity is a serious concern for both, urban protest and GDP p.c. growth, the OLS and logit estimates are likely to be biased. Before discussing the IV estimates, it is insightful to examine the relationship between urban protests and rainfall shocks. In model (1) of Table 3, we show that droughts significantly increase the logged duration of urban protests. Yet, the F statistic for drought is below the critical value of ten suggested by Stock and Yogo (2002), indicating that, on average, negative rainfall shocks might not be sufficiently correlated with urban unrest in order to ensure strong first stage results. In model (2), we exploit the fact that there is substantial regional heterogeneity in rainfall and interact our drought indicator with region dummies for Eastern, Middle and Southern Africa. The significant point estimate of drought shows that in Western Africa (which is the omitted baseline region), a drought increases the average duration of protests by roughly 14 days. In other regions, this effect is less pronounced, yet droughts always lead to a significant increase in the duration of protests. The large F statistic indicates that the drought variables are jointly significant and strongly correlated with urban unrest. Since economic growth might be endogenous to coup risk as well, we include extractive price shocks as an additional explanatory variable in model (3) and also show the results for GDP p.c. growth as dependent variable in model (4). Importantly, droughts do not explain income growth which suggests that adverse weather shocks influence coup attempts only through public protests. In contrast, extractive price shocks predict GDP p.c. growth but not urban protests. We find that price shocks have a negative and significant impact on economic growth. This result is somewhat counter intuitive, but in line with comparable evidence in Aidt and Leon (2016) .

Table 3: Droughts and urban protests.

Dependent variable:	**(1) Urban protest**	**(2) Urban protest**	**(3) Urban protest**	**(4) GDP p.c. growth**
Drought$_t$	0.349*	2.642***	2.651***	−0.00203
	(0.196)	(0.140)	(0.139)	(0.00485)
Drought$_t$ × Eastern Africa		−2.306***	−2.299***	−0.0236
		(0.559)	(0.563)	(0.0302)
Drought$_t$ × Middle Africa		−2.601***	−2.610***	−0.00789
		(0.150)	(0.149)	(0.00698)
Drought$_t$ × Southern Africa		−2.387***	−2.404***	0.00859
		(0.201)	(0.201)	(0.00775)

GDP p.c. growth$_t$	−0.377	−0.375		
	(0.575)	(0.574)		
Extractive price shock$_t$			−0.0210	−0.00507*
			(0.0185)	(0.00291)
F test (Drought IVs)	3.16	96.30	97.86	1.91
F test (Drought IVs), p-value	0.0836	0.000	0.000	0.129
Country FE	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Observations	682	682	682	682

All models estimated by ordinary least squares. Robust standard errors reported in parentheses. Significance levels: ***p < 0.01, **p < 0.05, *p < 0.1.

Table 4 presents our main IV results applying two-stage least-squares (2SLS). Models (1) and (2) report the results from the baseline estimation including our regional drought IVs for urban protests, with and without additional controls. The coefficient estimates of urban protest are significant and larger in magnitude suggesting that the OLS estimates were underestimating the effect of urban unrest on coup risk. Taking the point estimate from model (1), a drought in Western Africa leads to an increase in the likelihood of a coup attempt of 5.85 percentage points (through the increased duration of urban protests).[3] Evaluated at the sample mean of coup attempts, this effect corresponds to a doubling of coup risk during drought years. The Kleibergen-Paap F statistic indicates that the drought IVs are strongly correlated with urban protest.

Table 4: Urban protests and coup attempts – 2SLS estimates.

	Two-stage least-squares IV				
Dependent variable: Coup$_t$	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Urban protest$_t$, logs	0.0223*	0.0456**	0.0578**		
	(0.0118)	(0.0212)	(0.0234)		
All protests$_t$, logs				0.0149	
				(0.0221)	
All protests$_t$, modified (logs)					0.128
					(0.0206)
GDP p.c. growth$_t$	−0.770***	−0.765***	0.537	−0.754***	−0.767***
	(0.237)	(0.225)	(1.380)	(0.246)	(0.245)
Excluded instruments	Drought IVs		Drought IVs, Extractive price shock	Drought IVs	
First stage F test for:					
urban protest$_t$ (p-value)	0.000	0.000	0.000	0.000	0.000
GDP p.c. growth$_t$ (p-value)	–	–	0.510	–	–
Kleibergen-Paap F statistic	27.03	17.17	0.794	6.329	6.626
Stock-Yogo CV 10% max IV bias	10.27	10.27	8.78	10.27	10.27
A-R Wald, *F* (p-value)	–	–	[0.0420]	[0.0524]	[0.0524]
A-R Wald, χ^2 (p-value)	–	–	[0.0313]	[0.0438]	[0.0438]
Hansen J (p-value)	0.891	0.326	0.196	0.724	0.733
Additional controls	N	Y	Y	N	N
Time since last coup	Y	Y	Y	Y	Y
Country & time FE	Y	Y	Y	Y	Y
Observations	682	581	581	682	682

2SLS, Two-stage least-squares. *All protests, logs* is the logged duration of all protest events in the sample, irrespective of the location of these events. *All protests, modified* excludes protest events that occur in the months after an observed coup attempt in a given country-year. Drought IVs refers to the variables drought, drought × Eastern Africa, drought × Middle Africa, drought × Southern Africa. Additional controls are GDP p.c. levels, autocracy, regime age, and military expenditure. The null hypothesis of the Anderson-Rubin Wald tests is that the endogenous regressors jointly equal zero and that the overidentifying restrictions are valid (p-values reported). The respective test statistics are the Anderson-Rubin's Wald F and Wald χ^2 statistic. The null hypothesis of Hansen's test of overidentifying restrictions is that the instruments are valid and correctly excluded from the structural regression (p-values reported). Hansen's *J* statistic is robust to heteroskedasticity and autocorrelation. Robust standard errors are reported in parentheses (). Significance levels: ***p < 0.01, **p < 0.05, *p < 0.1.

In model (3), we include extractive price shocks as an additional IV to account for the potential endogeneity of economic growth. The point estimate of urban protest raises in magnitude suggesting that part of the

effect of rainfall-driven economic shocks is channeled through protests as supported by Kim (2014). However, the Kleibergen-Paap F statistic is below the critical value for avoiding weak instruments (Stock & Yogo, 2002). From the first stage F-statistics on excluded instruments we conclude that concerns of instruments being weak mainly apply to instrumenting growth by commodity prices and also report weak-IV robust inference to assess significance. The p-values of the Anderson-Rubin Wald tests suggest that urban protest and GDP p.c. growth are jointly significant at the 5% level, but given the above stated concerns we treat these results with caution.

We also report two robustness tests for our baseline protest measure. In model (4) of Table 4, we include an un-weighted measure of protest intensity that counts all protest events in our sample irrespective of the their location. The coefficient is smaller and less precisely estimated, indicating that urban protests are much more relevant for influencing elite perceptions than protests in peripheral areas (Johnson & Thyne, 2016).

One problem with the estimated coefficient of our baseline protest variable is that it might capture the reverse effect that coup attempts could have on the subsequent intensity of urban riot activities. To account for this potential caveat, we include a modified protest variable in model (5) of Table 4 that excludes all protest events that occur in the months following a coup attempt in a given country-year. This coding procedure excludes all protest events from our sample that could, in principle, be provoked by coup attempts and thus ensures that causality runs from protests to coups, and not vice versa. The point estimate of this modified protest variable is positive and large in size, and statistically jointly significant together with economic growth when assessed based on the weak-IV robust Anderson-Rubin significance tests.

Finally, we also report Hansen's *J* test for all specifications in Table 4. The test fails to reject the null hypothesis in all of our models, indicating that the exclusion restriction is valid.

5 Results for protests and coup outcomes

This section explores how public uprisings shape the incentives of coup leaders to implement regime change following a coup attempt. To shed light on this question, we rely on the typology of political regimes provided by Cheibub, Gandhi, and Vreeland (2010) who define democratic systems with the presence of free and contested elections. In addition, the authors classify different types of autocracies, namely military dictatorships, monarchies and civil regimes. Since it might take some time to establish and stabilize new institutions in the aftermath of a coup attempt, we identify a post-coup regime change if there is a coup attempt in a given country and year, followed by a transition from one political regime to another within the next three years. We distinguish two different types of post-coup regime change, namely "post-coup autocratic change" (i.e. a change from one autocratic regime to another one, or a change from a democratic to an autocratic regime) and "post-coup democratic transition" (i.e. a change from an autocratic to a democratic regime type). In addition, we compute the variable "post-coup autocratic stability" for those cases in which a coup attempt in an autocratic regime is not followed by any change within the next three years.

In Table 5, we show the IV estimations for the link between urban protests and the three different types of post-coup regime change. As control variables we include economic growth as well as a dummy variable indicating whether the coup was staged in a military regime, reflecting the notion that military regimes are characterized by specific political transition dynamics (Geddes, 1999). In models (1) and (2), we find positive and significant coefficient estimates for the effect of protests on post-coup autocratic regime change and post-coup autocratic stability. In contrast, the effect of protests on post-coup democratic change is not statistically significant in model (3). In model (4), we also include a categorial variable for post-coup regime change that is one if there is a coup followed by a democratic transition, minus one if a coup is followed by either autocratic regime change or autocratic stability, and zero if there is no coup at all. The negative point estimate suggests that urban protests significantly decrease the prospects of post-coup democratic change, but increase the likelihood that a coup will be followed by a subsequent autocratic regime. Our results thus suggest that coup leaders are able to prevent substantial democratic change in the aftermath of a violent leadership removal and rather exploit urban protests to restore autocratic institutions.

Table 5: Protests and post-coup regime change – 2SLS estimates.

	Two-stage least-squares IV			
Dependent variable:	**Post-coup autocratic change, binary**	**Post-coup autocratic stability, binary**	**Post-coup democratic transition, binary**	**Post-coup regime change, categorial**
	(1)	**(2)**	**(3)**	**(4)**
Urban protest$_t$	0.00685**	0.0133**	0.00182	−0.0189**

	(0.00331)	(0.00640)	(0.00364)	(0.00748)
GDP p.c. growth$_t$	0.0365	−0.646***	−0.281	0.364
	(0.0636)	(0.192)	(0.226)	(0.355)
Military regime dummy$_{t-1}$	0.0617*	−0.0168	0.0663**	−0.00739
	(0.0329)	(0.0314)	(0.0262)	(0.0616)
Excluded instruments	Drought IVs			
Kleibergen-Paap F statistic	103.4	103.4	103.4	103.0
Stock-Yogo CV 10% max IV bias	10.27	10.27	10.27	10.27
Hansen J (p-value)	0.792	0.865	0.522	0.968
Country FE	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
Time since last coup	Y	Y	Y	Y
Additional controls	N	N	N	N
Observations	623	623	623	622

Post-coup autocratic change, binary is one if there is a coup attempts in year t, followed by a subsequent change (i) from one autocratic to another autocratic regime type or (ii) from a democratic to an autocratic regime type in t+1, t+2, or t+3; and zero otherwise. Post-coup democratic transition, binary is coded analogously for democratic regime changes. Post-coup autocratic stability, binary takes the value one if there is a coup attempt in year t, but no regime change within the following three years (i.e. remains autocratic); and zero otherwise. Post-coup regime change, categorial takes the value 1 if there is a coup attempt in year t, followed by a democratic transition within three years; −1 if there is a coup followed by (i) an autocratic regime change or (ii) no regime change (i.e. remains autocratic); and 0 if there no coup observed in year t. Drought IVs refers to the variables drought, drought × Eastern Africa, drought × Middle Africa, drought × Southern Africa. Robust standard errors in parentheses (). Significance levels: ***p < 0.01, **p < 0.05, *p < 0.1.

6 Conclusion

This contribution analyzes the impact of urban unrest on the occurrence of coups d'état and subsequent political change by isolating exogenous variation in protests through rainfall shocks. Overall, our results support the idea that rainfall-related urban protests raise the likelihood that a coup is staged. Yet, we do not find evidence for the idea that popular protests actually force coup leaders to make democratic concessions. Rather, our results suggest that by staging a preemtive coup, the elite is able to exploit public grievances for their own benefit, maintain autocratic institutions and appease public turmoil sufficiently to avoid more drastic regime changes like democratization. While the evidence can only be tentative in the sense that it covers only a short time period (1990 to 2007) and a limited number of countries in a particular region (Sub-Sahara Africa), it might nevertheless provide important insights into the interplay of two driving forces of political change in autocracies.

Notes

[1]According to the World Bank's World Development Indicators (WDI), agricultural value added accounted on average for 28.7% of total GDP in SSA countries (excluding South Africa) over 1990–2010. See http://data.worldbank.org/data-catalog/africa-development-indicators. Data retrieved on August 11, 2017.

[2]Since we observe the number of coup attempts and protest events at the country-year level, our coefficient of interest, β, could, in principle, capture the effect that coup attempts have on subsequent riot activities in the year when the coup is staged and thus might be biased. We discuss this problem in the robustness section.

[3]The marginal effect is $0.0223 \times 2.625 = 0.0585$.

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