Full Length Research Paper

Determinants of regime survival in Africa

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Political instability has arguably been the most important factor that defined the African political landscape for the past five post-independence decades. Few countries in the region were immune from the costly conflicts that afflicted the region. It is perhaps no surprise then that a growing volume of literature on African political economy chose to explain the lacklustre economic performance of the countries in terms of absence of political stability. However, studies generally tend to downplay the diversities in the political economy trajectories of the different countries in the region. By highlighting one such cross-country variation, this study analyses the determinants of regime survival in Africa. More specifically, we apply survival analysis techniques to identify the institutional features behind observed differences in regime survival. We find that colonial legacy as well as level of income is important determinants of the hazard rates for regime survival in Africa.

Key words: Africa, regime survival, democracy, colonial legacy.

INTRODUCTION

One finds ample evidence that indicates the relatively high frequency and longevity of political conflicts in Africa since the early 1960s (Easterly and Levine, 1997, Guillaumont et al., 1999). The extensive data set compiled by the African Research Program at Harvard University provides a useful quantitative account of the extent of political instability in Africa. Accordingly, of the 1196 years covered by the data, the number of years in which countries in the region did go through at least one unrest was about 546. Similarly, in about 11% of the cases, there were extra-constitutional attempts to overthrow governments in office. The countries in the region also experienced full scale wars every fifteen years. Nevertheless, given that 46 countries were covered in the study, such un-weighted mean values are likely to camouflage otherwise sizeable within region variations in terms of political instability. At one extreme there existed countries that had long historical record of political violence, which included such countries as Angola, Chad, Ethiopia, Mozambique and Sudan, while a few others including Botswana, Gabon and Tanzania remained relatively stable. It is in particular this diverse experience in political instability that represents the theme of the paper. With the help of one indicator of political stability, i.e. regime tenure, we investigate the factors that explain cross-country differences in the survival of governments in Africa. The paper is organised as follows. In section II, we present a selective review of the literature on political

instability with particular reference to Africa. We then discuss the model and variable measurement issues in section III. Findings will be discussed in section IV while the last section concludes.

Why do political instabilities occur?

A search for the causal factors of political instabilities has long attracted scholarly interest that crosscuts different disciplines, *albeit* mostly as part of a wider research question. Africa has been largely portrayed for its instability that some scholars have even gone great length to 'deAfricanise' success stories, as is done by Acemoglu et al. (2003) regarding Botswana. Others included African data in a broader context. A case in point is provided by Alesina and Perotti (1996) who empirically tested on a sample of 71 countries the effects of income inequality on economic growth as well as Gyimah-Brempong and Taynor, 1999). They hypothesised that income inequality adversely affects economic growth through its positive association with socio-political instability. By applying a principal components method on a five-dimension social unrest variable, the study found that income inequality increases socio-political instability which in turn reduces investment. Such findings were further endorsed by Gyimah-Brempong and Traynor (2002) who draw several inferences on the links between economic performance

and political instability in Africa. Nkurunziza and Bates (2003) also assess the impacts of stability, regime type and violence on economic growth in Africa. A string of variables that capture different dimensions of political upheavals, such as constitutional crisis, political assassinations, revolutions and riots, were used to derive a single weighted index of political instability. Azam (1995) discusses the choices an African government faces as to whether to bolster its defence or redistribute to opponents using a game-theoretic model. Despite a long-standing tradition to link Africa's rather dismal performance in politics and economics to its ethnic make-up (e.g. Easterly and Levine 1997), Kasara (2007) provides empirical evidence against such a paradigm (See also Bardhan (1997) on the complexities of the ethnic issue and Mkandawire (2001) on the compatibility of development and state character in Africa. In several studies, political instability need not necessarily be preceded by overthrow of governments. Other studies, however, define political instability as an event which was accompanied by changes in government (Deaton and Miller 1995; Knack and Keefer 1995). The voluminous research on the effects of regime types on economic growth, though not necessarily with only an African focus, include Przeworski and Limongi (1993), Savvides (1995), and Tsangarides (2001) while Acemoglu (2003) deal with the effects of colonial history on institutional path of countries (See also Aron, 2000 for a review of studies on the nexus between growth and institutions, Bates 1983, and Barro, 1991 on African exceptionalism in economic growth).

Studies that investigated the economic implications of political instabilities largely overlooked the question of why political instabilities occur in the first place. A major departure from such paradigms was provided by Collier and Hoeffler (1998) . In a study that dealt with the incidence of civil war in Africa, Collier and Hoeffler (2002) showed that, while Africa has had a similar incidence of civil wars to other developing regions, its vulnerability was explained more by economic conditions. In contrast to other regions, Africa showed a rising trend for civil wars as a consequence of its poor economic perfor-mance. Nevertheless, social conditions were more conducive to reducing the likelihood of civil wars in Africa. In line with the work of Collier and Hoeffler, our interest in this paper is also to investigate the determinant factors of political instability. More specifically, we define political instability as a non-constitutional change in government in a given a country. We also limit our focus on differences in tenure of governments within Africa.

Model

Let T ≥ 0 denote the duration with a given distribution in the population and t a specific realisation of T. In this case, T represents duration in terms of years in which a given regime had survived before it was replaced by a coup état at period t. Accordingly, countries enter into the initial state anytime in the interval [0,40], that is, between 1960 and 2000. Countries in Africa entered the initial state at different times since their dates of independence also vary. Note that we take 1960 as the start period for few countries which gained independence before that date (Ghana, Guinea, South Africa and Sudan) as well as those which avoided colonisation altogether (Ethiopia and Liberia).

Therefore, the probability that a regime survives beyond a specific time, say t, is given by:

$$S(t) \equiv 1 - F(t) = P(T > t) - - - -(1)$$

Where $F(t) = P(T \le t) - - - (2)$
$$t \ge 0$$

is the cumulative distribution function (cdf). Assuming that duration is continuos with differentiable cdf, the probability of a regime failure in the interval [t, t+h] given that it survived up until time t is given by:

$$P(t \le T < t + h \,/\, T \ge t) - - - - - (3)$$

The hazard function is, then, defined as:

$$\lambda(t) = \lim_{h \downarrow 0} \frac{P(t \le T < t + h \,/\, T \ge t)}{h} - - - -(4)$$

When the cdf is differentiable, we can take the limit of the right-hand side, divided by h, as h approaches zero from above:

$$\lambda(t) = \lim_{h \downarrow 0} \frac{F(t+h) - F(t)}{h} \cdot \frac{1}{1 - F(t)} = \frac{f(t)}{1 - F(t)} = \frac{f(t)}{S(t)} - - -(5)$$

Because the derivative of $S(t)$ is $-f(t)$, we have

$$\lambda(t) = -\frac{d \log S(t)}{dt} - - - - - -(6)$$

And using $F(0) = 0$, we can integrate to get

$$F(t) = 1 - \exp - \int_0^t \lambda(s) ds \,, t > 0 - - - - -(7)$$

Which then gives the density of T as:

$$F(t) = \lambda(t) \exp - \int_0^t \lambda(s) ds - - - - -(8)$$

Table 1. Classification of African regimes by survival rates.

Duration in years	Number of countries	Percentage share in total
5	6	13.3
5< x 10	8	17.8
10< x 20	11	24.4
>20	20	44.4
Total	45	99.9

Source: Own calculation using ARP (2008).

One important notion in hazard functions is duration dependence, i.e. if and how time spent in the initial state affects likelihood of exit. If the length of time a regime survives has no bearing on the probability of its removal from office then the process is called memory-less and can be represented by:

$$F(t) = 1 - \exp(-\lambda t) - - - - - - (9)$$

However, if the longer a regime stays in power the more likely it is to be dislodged from power then we have positive duration dependence. Such a situation is best captured by the Weibull distribution with the hazard function given by:

$$\lambda(t) = f(t)/S(t) = \gamma \alpha t^{\alpha-1} - - - - - - (10)$$

When, on the other hand, long regime tenure improves chances of survival for a regime, or when there exists a negative duration dependence, such a scenario can be described by a log-logistic hazard function as given by:

$$\lambda(t) = \frac{\gamma \alpha t_{\alpha-1}}{1 + \gamma t^{\alpha}} - - - - - - - - - - - (11)$$

Our concern here is in the analysis of single-spell data with time invariant covariates. Although forced regime changes occur at different points in time in a given country, sometimes multiple cases within a year, we consider in this study the survival time of a given regime between its first entry into the initial state (that is year of independence) and it got removed from power through non-constitutional means. As such, the values of the political and economic covariates refer to the time when the country enters the initial state. Thus, our model is specified as:

$$Y_i = \beta_i + \beta_i X + \beta_i Z + \epsilon_i - - - - - - - - - - (12)$$

Where Y_i is duration in number of years in which a regime survived before being replaced; X is level of income; Z accounts for the political variables as discussed below; and ϵ_i is the error term.

Data and analysis

The dependent variable in our model is the number of years a regime installed at independence stayed in power before being forcefully removed. It is recorded regardless of whether or not the change in executive originated from within ruling party political in-fighting. For countries which experienced no regime change, the relevant duration values were number of years from independence to 2000. We draw this data from the online data base of the African Research Program at Harvard University (ARP, 2008). One observes different patterns in terms of regime survival among African countries. In certain cases, newly installed and/or elected governments at the time the countries had come out of colonisation remained in office for a short period of time. For instance, the first government of Benin lasted only for three years while the life-span of that of Seychelles was only a year. In fact, eleven of the 46 African governments under consideration remained in power for six or less years before being removed forcefully. Governments in countries such as Equatorial Guinea, Madagascar, Niger and Nigeria registered survival duration of between ten and twenty years while at the other end there existed several governments in office for more than three decades. It is worth noting that long regime survival did not necessarily mean stable political environment as the experiences of Angola and Mozambique indicate. In both these countries, regimes lasted long despite continuous large scale civil wars.

As shown in Table 1, the modal regime life in Africa, since independence in the early 1960s, is more than twenty years. The relatively long tenure of African regimes becomes all the more apparent when we consider the cumulative share of those regimes that survived between 10 - 20 years and above 20 years. In this case, about two in three African leaders stay in power for more than ten years. Regime longevity seems to have little correlation with regards to the fact that a regime is totalitarian or not. In so far as we speak of better governed states which avoided non-constitutional change in their executives (e.g. Botswana and Mauritius), we also find a number of autocratic regimes that have lasted for decades. Gabon and Togo provide cases in point to the latter set of countries. However, very long and relatively

Table 2. Determinants of regime survival in Africa.

Variable	One	Two	Three	Four
Income	-1.19***	-1.16***	-0.99**	-1.05***
Democracy	0.24*	0.13		
British	-1.58**		-1.40*	
French		0.79		0.83
Autocracy			-0.25*	-0.18*
Constant	0.85***	0.71**	0.88**	0.76**
Chi2	42.50	20.56	36.96	27.55
N	46	46	46	46

NB. * p < .05; ** p < .01; *** p < .001. Estimation is by Weibull regression: log-relative hazard form. We also used robust standard errors.
Source: Author's calculation.

stable rule under an autocratic regime did not guarantee that such pattern of rule continues once a regime change occurs. For instance, Côte d'Ivoire plunged into severe political turmoil, including its first coup dÁetat in 1999, only after the 34 year rule of Houphouët-Boigny.

We apply a string of political, economic as well as social factors that are widely considered to have a resonance on political economy trajectories of African countries. We use real GDP per capita to control for economic determinants of regime survival. Because of its comparative edge in terms of longer time coverage, the political explanatory variables are drawn from the Polity IV data (Marshall and Jaggers, 2002). In broadest terms, the variables from Polity data account for three institutional attributes; namely democratic governance, process of executive recruitment and the degree to which political competition was allowed in executive selection. A detailed definition of each political variable is provided in the discussion of results below. Recent research underscored the relevance of colonial history in explaining current disparities in political economy outcomes of countries (Acemoglu et al., 2001). We control for this phenomenon by including a dummy for the identity of the colonial power in each country's history. In particular, we investigate whether the different colonial models pursued by Britain and France shaped hazard of regime failure in different ways.

A number of interesting patterns emerge when we apply a quantitative analysis of the determinants of regime survival in Africa. Firstly, colonial history matters strongly in defining whether regimes in Africa face higher or lower hazards of violent removal. More specifically, as compared to those countries under French and other countries' colonial rule, former British colonies faced less hazard rates to encounter regime removal. At any given survival time, an African head of government of a former British colonial state is 40 - 58% less likely to be forcibly removed from power. Nevertheless, we find the effect of French colonial rule on the survival rates of African heads of states to be statistically insignificant.

Secondly, regardless of colonial history or any other political factor, state of the economy is also a very strong determinant of regime survival in Africa. As shown in model one above, a one percent difference in income levels between countries translates into a 19% difference in rates of survival of a regime in Africa. Models two, three, and four also indicate that, irrespective of which controls were introduced, level of income in a country, measured by real GDP per capita, reduces the likelihood of a regime's removal between 16% and 0.99%. This finding underscores the point that the resonance of economic growth in Africa travels beyond enhancing material welfare of its population; since the political health of states in the region is also very much affected by the health of their economies.

Thirdly, the type of regime in place also matters in determining the hazard rates of regime collapse in Africa. Results from model one show that better governed states (that is, on the Polity democratic score) are more likely to go through sudden and unconstitutional regime turnover than other states. This is in particular true of former British colonies; in which case a unit increase in the democratic score of a country entails a 24% higher hazard rate for its regime to be toppled at any given time. However, as shown in Table 2, we could not draw similar inferences for former French colonies in Africa. What is more emphatic is the fact that autocratic regimes, regardless of their colonial history, seem to enjoy longer regime tenure. A one unit increase in the autocracy score (that is, deterioration of governance) reduced the regime removal hazard rates for British and French colonies by 25% and 18% respectively. Still, a caution is in order. Although it is true that autocratic regimes in Africa face less hazard rates of removal through coup dÁetat, political instabilities in these countries take different forms such as civil conflicts and border wars.

We introduce a couple of additional political variables to identify determinants of regime survival in Africa. The variable XCONST refers to the extent of institutionalised constraints on the decision-making powers of chief executives, whether individuals or collectives (Marshall and Jaggers 2007). The other variable (XROPEN), also from Polity data, assesses the degree to which the position of chief executive is open to all politically active population; and can be attained through regularised systems. As the results reported in Table 3 indicate, the clear demarcation in the behaviour of political regimes between former British and French, which we observed in the previous analysis, persists in this particular case as well. Accordingly, neither the levels of constraints imposed on chief executives nor the openness of the head of state position for political competition influences regime survival in former French colonies in Africa. Nevertheless, we observe a different scenario for those countries which used to be under British colonial rule. In this case, a more open political space seems to lower regime removal hazard rates while broader constrains on decision-making powers of the chief executive reduces the survival

Table 3. Determinants of regime survival in Africa (other political factors).

Variable	Five	Six
Income	-1.04***	-0.93***
XCONST	0.36*	0.22
XROPEN	-0.64	-0.73
British	-1.29*	
French		0.62
Constant	0.94**	0.84**
Chi2	23.61	17.87
N	46	46

NB. * p < .05; ** p < .01; *** p < .001.
Estimation is by Weibull regression: log-relative hazard form. We also used robust standard errors. Source: Author's calculation.

rates of African regimes. This latter factor accounts for the fact that the military in Africa enjoys strong leverage on African governments.

Concluding remarks

Africa's political history since independence has largely been marred by widespread political violence; and a concomitant pattern of lacklustre economic performance. Almost all parts of the region have undergone severe political upheavals which, in certain cases such as Liberia and Somalia, led to state failures. A characteristic feature of the African political landscape has been the vulnerability of governments to non-constitutional remo- val. For instance, Benin had as many as four successful coup dÁetat in the first ten years of its independence. Amid all the uncertainties, however, African regimes tend to have a long tenure on average. In this study, we investigated the reasons behind the disparities in regime survival in Africa. We showed that part of Africa's problems with regards to the strength of its governments emanates from colonial legacy. It is shown that govern- ments in former British colonies face relatively lower hazard rates on this type of political upheaval. Economics also plays a powerful role in determining the likelihood for an African government to face removal at any point in time. The length of term of office for chief executives in Africa remains a thorny issue, even after the wave of political reforms of the past two decades. Uganda's Museveni reneged on promises of mandatory two-term limit to hang on power. Chiluba of Zambia, Muluzi of Malawi, and Obasanjo of Nigeria were but few of the leaders who unsuccessfully tried to change term limits.

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