

Captured by the Government: Ethnic Divisions and Political Accountability

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Comments and suggestions welcome

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Abstract

I present a model in which weak institutions in the form of "Personal Rule" regimes compound the problem of ethnic divisions into one of bad governance because of reduced accountability of the leadership. As a consequence, the ruler can construct a kleptocratic regime in which he can steal from the citizens, included his own ethnic supporters, even though he is at the helm of a weak state. The model predicts as well extensive use of patronage, and absence of investment in infrastructure. Hence, it perfectly fits the experience of bad governance, wasteful policies and kleptocracy in post-colonial Africa.

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1 Introduction

“Very quickly, African independence and socialism turned into one-man dictatorships, characterized by conspicuous consumption by the elites and a "Swiss-bank socialism" that allowed the head of state and his cohort of vampire elites to loot their countries' treasuries (...). Billions of dollars were deposited abroad by the Babangidas, the Bandas, the Barres, the Does, the Kerekous, the Houphouet-Boignies, the Mois, the Mobutus, the Mengistus and many others.”¹

The plundering of African economies has been a systematic and generalized practice of African leaders in the years that have passed since they achieved independence. The rewards from such activities have been enormous: several rulers, such as Mobutu, Moi or Houphouet-Boigny have been estimated to have personal fortunes equivalent to the total debt accumulated by their countries². Underlying the blatant enrichment of the rulership, there has been an effort to engage in extensive redistribution of resources in surprisingly inefficient ways. For instance, Bates (1981) describes how cash crop growers are taxed by being forced to sell their produce to the state-owned Marketing Boards at prices well below the international price while, at the same time, some of these same growers receive subsidized inputs such as fertilizer. This coexistence of expropriation and subsidy to the same groups extends to other policies such as financial repression and subsidized loans.

Extensive and inefficient redistribution and regulation, coupled with outright stealing and corruption by the leadership explains a big share of the dismal economic performance of African economies in the last five decades³. Most of Africa's population obtains today an income inferior than the already low 1960 levels despite the exploitation of seemingly boundless natural resources, the reception of huge amounts of foreign aid and an astronomical increase of foreign debt. By any standards, the performance of the different rulerships of many African countries has been catastrophic for an immense majority of their populations. Intuition suggests that a leader that reduces the utility of her citizens will find it very difficult to remain in power. The ability of the citizenry to substitute non-performing politicians should constrain the leaders to dedicate their efforts, to some extent, to the advancement of the interests of their constituencies⁴. The facts in Africa

¹Quote from Ayittey (1992:105)

²See Ayittey (1992) or Mbaku (2000) for an account of the extend of thievery.

³For the effect of bad policies, see Collier and Gunning (1999), Easterly and Levine (1997) or Easterly (2002). For the effect of political and bureaucratic corruption see, for instance, Mbaku (2000).

⁴The seminal theoretical work on these lines is Barro (1973) and Ferejohn (1986). These models are based on an undelying moral hazard problem that allows the ruler some room to shirk in office. Optimal use of replacement rules via election of another candidate places limits on this potential shirking.

suggest that this mechanism fails to work: the political longevity of kleptocratic and inefficient rulers is remarkable. For instance, Kenya endured Moi's leadership during 24 years, and Houphouet-Boigny's rulership of Ivory Coast ended with his death, after 33 years in power. What explains the incapacity of the citizenry to replace or at least constrain such blatantly venal leaders?

A standard explanation is that coercion and force are used to crush any potential dissent. However, given the accounts that present African states -colonial, and post-colonial alike- as very weak states, with limited control over their territories, with weak armies and police forces⁵ and severely limited bureaucracies, it is very difficult to see how such regimes have been able to keep their populations from expressing their discontent at the enrichment of the few and the poverty of the many solely through the use of violence. In other words, African states have by no means been police states, with tight control over the private activities of citizens. It is precisely this weakness what explains the incidence and longevity of guerrilla movements and other forms of violent conflict⁶. Another argument put forward is the existence of a severe collective action problem at the time of coordinating to oust the leader. However, given the enormous size of the rents appropriated by the leadership, it seems that the incentives to coordinate are very strong, and an explanation that is based solely on the incapacity to organize does not seem realistic for a situation that has lasted decades. In addition, note that any of these explanations results in leaders insulated from the population and secure in their power. If this were the case, why would they engage in such extensive and inefficient transfers of resources across groups in their societies? A richer economy offers better prospects for rent extraction, and hence the immense inefficiencies introduced by their regimes seem hardly consistent with an unconstrained leader.

Instead, a better explanation is that these rent-extracting leaders have been able to coopt large shares of their populations into supporting the regime⁷. The patterns of inefficient redistribution can thus be rationalized by the need to obtain support from sizable groups. However, this explanation opens a new set of questions: how is it possible that the leaders were able to amass such exorbitant personal wealth at the same time that they were rewarding a sufficient share of their populations to keep in power? Even more intriguing, if the authority of the ruler is cemented on a particular group, how is it possible that internal competition within the group has not dissipated to some extend

⁵La Ferrara and Bates (2001) characterize underdeveloped polities by absence of monopoly over the use of violence. See Bates (2001) and Cooper (1999) for a longer discussion and its historical roots.

⁶See Fearon and Laitin (2003).

⁷It is surprising to see many instances where large populations are easily mobilized by the regime: ethnic voting is such an example, but the much darker side of it was present in Rwanda, 1994.

the enormous rents that these leaders were accumulating?

This paper presents a coherent argument to explain these policy patterns together with the absence of political accountability and the endurance of kleptocratic regimes. The explanation is based on the characterization of African polities as “weakly institutionalized”⁸, conducing to what has been dubbed a system of “Personal Rule”⁹.

Specifically, the model uses two consequences of weak institutionalization. First, checks and balances are basically nonexistent, which allows leaders to use their vast powers in setting the fiscal system of taxes and subsidies to treat different groups in their societies in discriminatory ways, effectively constructing clientelist networks. In Africa, the group attribute that is typically most politically relevant is the ethnic dimension¹⁰.

Second, in a system of personal rule the process of replacing a leader in power is not controlled by an established political institution, and hence it is uncertain and hardly ever smooth. Jackson and Rosberg (1982), write “a succession [...] alters at least some of the important relationships and standings among leaders and factions- for example, the standing of big men and the clan and ethnic communities they represent” and “in systems of personal rule [...] by bringing down the ruler, the plotters may very well succeed in bringing down the regime”. Thus, ousting a leader may involve a complete change in the standing of the elites currently in power. Kenya or Cameroon are good examples of dramatic switches in the standing of different ethnic groups caused by succession.

The main contribution of the paper is to show the role of this absence of due process for succession: the combination of weak institutions and a society divided on ascriptive lines frees the ruler from accountability to his supporters, even if his position and the state are weak.

Due to the absence of constraints, the ruler can easily create first and second class citizens, treating her ethnic group better than the opposition. The kleptocratic equilibrium is sustained because the way regime supporters constrain the rapacious activities of the leadership is by credibly threatening to replace the ruler and put someone else in charge, *ideally from their own group*. However, in a system of personal rule, removing the leader from power initiates an uncertain succession process that may end up with the current supporting group in the opposition. The ethnic divide implies that the division between winners and losers is very difficult to surpass¹¹ and hence the possibility of losing

⁸See Acemoglu, Robinson and Verdier (2003).

⁹See Jackson and Rosberg (1982) for a characterization of such regimes.

¹⁰For a comment on the political relevance of ethnic categories see Horowitz (1987). Bates (1983) comments on the particularities of ethnicity in Africa. Note that Africa is the continent with the highest degree of ethnolinguistic fractionalization.

¹¹Caselli and Coleman (2002) use the same idea in justifying the breakdown of societies in ethnic conflicts.

the winner status is not satisfactory: being in the opposition is necessarily worse than being in the supporter group, because opposition leaders cannot commit not to follow the same discriminatory strategy that the current leader is using. Hence, current supporters of the leader know that should the leadership switch ethnic hands, their standing will be worse. This potential threat makes the supporting group refrain from disciplining the leader except in the most excessive cases. As a consequence, in equilibrium the ruler will be able to steal from both her supporters and opposition ethnic groups.

The amount the ruler is able to divert is endogenous to the model because both the gains from replacing the ruler (avoiding her current stealing) and the costs (the lottery between a replacement from the current ruling group or the opposition) are determined in equilibrium by the strategies played by rulers and potential substitutes. This endogenization allows us to draw conclusions with respect to the policies and the amount of stealing observed in equilibrium.

First, the fact that African rulers resort to activity based indirect taxation¹² provides a rationale for the patterns of inefficient use of public funds as resources for patronage and redistribution to the ruler's ethnic group. To prevent the transfer of resources across sectors, taxation rates on the diverse activities of ethnic groups¹³ have to move in parallel. As a consequence, in equilibrium the ruler is better off if she taxes her supporters at a high rate and then hands back some funds in the form of targeted patronage such as corrupt bureaucratic posts, because this allows her to increase taxation on the excluded group. This outcome is thus consistent with the coexistence of heavy rates of taxation and inefficient subsidization to supporter groups observed in Africa.

Second, the presence of specific sources of wealth that cannot be transferred across economic activities allows the rulers to steal more *from each group*. This result is independent of whether it is the supporter or the opposition ethnic group who has more resources locked. The more a group's source of wealth is sector specific, the less they can arbitrage differences of taxation across sectors. Hence, an economy based in long term cash crop exports such as cocoa or coffee will exhibit more venal leaders. The same goes through for an economy richer in natural resources. This helps explain the natural resource curse of countries like Nigeria, or the wealth accumulation of Kenya's leaders.

Finally, the equilibrium amount of stealing is decreasing in the quality of institutions. In particular, institutions that make succession processes better established or limit the

¹²African states are bureaucratically weak, which forces them to obtain resources via indirect taxation, or through manipulations of the price mechanism.

¹³That there is stratification in economic activities across ethnic groups has been long noticed. "Cementing the ethnic division of labor is the preeminent role of ascriptive ties in economic relations in the developing world" in Horowitz (1985).

discretion in the use of patronage will reduce the extent of kleptocratic excesses.

The remainder of the paper is organized as follows. Next section relates this paper to different strands of literature both in economics and political science. Section III presents the model and analyzes it, stressing the relevant comparative statics. It also contains a discussion on the interpretation of the model and its results. Section IV contains two extensions of the logic of the model. One explains another general pattern of public expenditure in Africa: the preponderance of wages over investment. A corollary on the relevance for ethnic violence is examined as well. Finally, the last section concludes.

2 Related literature

This paper is a contribution to the literature on political economy of less developed economies, in particular in the context of weak institutions. Recently, Robinson and Verdier (2002), Robinson, Torvik and Verdier (2002) and Robinson and Torvik (2002) explained inefficient policy choices in these countries by using variations of probabilistic voting models combined with the relaxation of the ability of politicians to commit to their platforms. In these two-period models, weak institutions are captured by the incapacity to commit, and the existence of groups plays a role as well in the explanation for the existence of clientelism and other inefficient practices. My model contributes to this literature by explaining why internal competition within the ruling group cannot dissipate kleptocratic rents even in a repeated game framework. Acemoglu, Robinson and Verdier (2003) explicitly treat the puzzle of the existence of kleptocratic rulers by noting that weak institutions imply that the ruler can exacerbate the collective action problem of society.

Other previous formal analyses of weak institutions and dictatorships include Acemoglu and Robinson (2000), Acemoglu and Robinson (2004), Grossman (1991), Grossman and Noh (1994), Robinson (1998), La Ferrara and Bates (2001), Bueno de Mesquita et al. (2003) among many others. The general approach, in which this paper is included, is to model the leader as maximizing the amount of resources she can extract from the polity, subject to the constraint of remaining in power. These models do not tend to capture the idea that weak institutions include the opportunity to marginalize and expropriate part of the population¹⁴. None of these papers explains why a large share of the population accept a leader that is so obviously non-performing nor do they establish a link with

¹⁴An exception is Bueno de Mesquita et al. (2003), where members of the selectorate can be excluded from the winning coalition. Acemoglu et al (2003) consider that the ability to tax different groups at different rates is a characteristic of weakly institutionalized polities.

patronage and clientelism. The notion of absence of accountability is thus not formally addressed.

A broad overview of the political science literature that explores the sources and nature of ethnic conflicts distinguishes two main views. Primordialist or perennialist positions consider conflict as an almost inevitable result of a clash between different cultures in the same territory. These explanations tend to go back in history to find the thread of enmity that explains today's violence and hence the focus is on supposed deep differences in unchanging values. The modern view of ethnicity, however, emphasizes the fluidity of ethnic identities, and the capacity of citizens to identify and classify themselves in different ways. This position is sometimes called constructivist, or instrumentalist, but this single name includes a variety of mechanisms by which identities are constructed¹⁵. Bates (1983) provides a classic exposition of a constructivist position in the context of Africa based in the competition for the state, that can be understood as comprehensive.

In this context, my work takes the existence of groups as given, and hence possesses a certain primordialist flavor. Even though constructivist positions have swept primordialism among scholars I am hardly alone in making this simplifying assumption¹⁶. The focus of this paper is not on the definition of groups but on the consequences of their existence for political accountability. I consider that the legacy of colonial rule and its divide-and-rule strategies make it fair to take African societies as deeply divided. In any case, the model presented here stresses a specific mechanism through which the elites would benefit from the existence of ethnic cleavages, and hence it gives a clear rationale for the conscious propagation of ethnic divisions. The constructivist position is thus vindicated by a clear exposition of the benefits to elites of ethnic polarization and section IV includes a brief discussion on how I interpret the "constructivist" actions of African leaders in the light of the model.

There is a small but growing formal literature on ethnic conflict. See Fearon (1998), (2002) and the references therein. Caselli and Coleman (2003) provide a rationale for why conflicts tend to be along ethnic lines: characteristics such as language and skin color allow winners to exclude losers ex-post, hence changing the incentives to escalate conflict ex-ante. The idea of the role of excludability is thus present in their model, but my paper formalizes the idea that the elites are the ones contributing to and benefiting from ethnic

¹⁵Chandra (2001) finds at least four different variants differentiated by the actors that give rise to identity changes: modernization, long term institutions such as the colonial state, economic needs and political ethnic entrepreneurship. Obviously, these alternatives are not mutually exclusive. See Fearon and Laitin (2000) for an extensive discussion of the different mechanisms conducting to violence inside constructivism.

¹⁶Chandra (2001) cites a number of modern studies, such as Posen (1993) or Fearon (1998) that take this shortcut.

conflict, and then explains why the rest of the population follows. To understand this process, it is crucial to separate the citizenry from the leadership, a notion that formal models of group conflict do not tend to pursue¹⁷. De Figueiredo and Weingast (1999) explain widespread violence and the participation of the masses as the reaction to uncertainty about the intentions of other groups and leaders. While this is a good explanation for open conflict, my intention is to focus on the silent acceptance of a kleptocratic ruler and hence the mechanism is not the same, even though they are by no means excludable.

Finally, note that the logic of the model is consistent with the burgeoning array of empirical literature that concludes that ethnic divisions are associated with poverty and lost opportunities for growth¹⁸. It stands from these analyses that the main cause to link ethnic divisions to bad economic outcomes seems to be different dimensions of bad policy¹⁹. The picture is not only one of bad policies, but one of bad governance: ethnic fractionalization correlates positively with the presence of corruption, "pork barrel politics" and autocracy²⁰. A final stylized fact is that the relationship between ethnic fragmentation and negative economic outcomes is diluted at high levels of institutional development²¹. In other words, ethnic divisions are more costly whenever institutions are weak²².

Theoretical attempts to explain these patterns have been unsatisfactory and incomplete. Models that work through differences in tastes across ethnic groups can account for the reduction in public good provision, but surely cannot explain the rise in corruption or the prevalence of patronage that accompanies high ethnic fractionalization. Other explanations work through common pool problems and emphasize lack of coordination in the taking of decisions. While these explanations may capture part of the truth, the reality is that the state apparatus may have been weak in terms of its penetration of society, but it has been single-minded in the pursue of the interests of the narrow elite that controls

¹⁷Glaeser (2002) proposes a model in which hate is provided as a quasi-good by self-interested politicians to rational citizens who demand it.

¹⁸This literature originates with Mauro (1995) and Easterly and Levine (1997), both papers using the same data to approximate ethnic divisions. The correlation of ethnic fractionalization with low levels of growth survives the use of alternative measures of ethnic divisions, as Alesina et al. (2003) show. Fearon (2003) provides yet another alternative measure. This correlation is robust to the use of alternative summary indexes of diversity, such as polarization as in Garcia-Montalvo and Reynal Querol (2002).

¹⁹See Easterly and Levine (1997), La Porta et al. (1999), Alesina et al. (1999),(2003) among others.

²⁰For the negative relationship of ethnic fractionalization with different indicators of civil liberties, electoral rights and democratic politics see Barro (1999) and Aghion, Alesina and Trebbi (2004). Mauro (1995), Alesina et. al (2003) among others show the positive relationship between fractionalization and different measures of corruption, bureaucratic inefficiency and absence of rule of law.

²¹See Collier (2000), Easterly (2001) and Alesina and La Ferrara (2003).

²²For a self-contained discussion of the relevant empirical findings as well as a survey of the literature see Alesina and La Ferrara (2003).

it. The excess plundering of an economy may be explained by ethnic competition in the case of failed states, such as Sierra Leone or Somalia where, effectively, different warlords are engaged in a common pool problem. This is not the reason why Moi or Mobutu were able to extract so many resources, provide inefficient policies, and still survive in power.

3 The model

3.1 The Environment

Consider an infinitely repeated economy with two ethnic groups, A and B . A group is defined by two distinct sets of characteristics. First, there are some ascriptive characteristics like language or skin color (maybe geographical distribution) that are identifiable and not easily changeable²³. Second, different groups obtain wealth from a different portfolio of economic activities. These portfolios of economic activities generate w^A and w^B per period, respectively. For simplicity, consider the economic activity to be the only characteristic that a group can change. In particular, a group may decide to switch its efforts to the activity portfolio of the other group, but in the process it loses a fraction of its wealth. Hence if group A switches to B 's activity, it obtains $w^A(1 - \phi^A)$ instead of w^A . ϕ^i thus captures the extent to which a group's wealth is specific to a particular activity. For example, if a group obtains its wealth from a mixture of rice and coffee, it can switch its efforts to maize in the fields that it used for rice, but coffee trees are a long term specific investment, and putting those lands to another use diminishes the income that the group can enjoy. A group that is specialized in cash-crops, especially tree crops, has no way to transfer its planted capital to another activity. The same would be true for a group that obtains revenue from natural resources that lie below its territory. On the other hand, ϕ^i may simply capture the degree to which specialized knowledge is useless in another sector. For simplicity, assume that switching is allowed each period. Let $\omega_t^i = 1$ if group i switches activities in period t . Otherwise $\omega_t^i = 0$.

There is a state that performs two functions: it taxes portfolios of economic activities and uses the proceeds to provide group specific goods.

These groups specific goods might be public goods that are so dependent on taste that only one of the groups enjoys them. Alternatively, they may constitute pure patronage such as the allocation of public resources to the region of a group in the form of infrastructure or the granting of lucrative bureaucratic posts (or posts in the army, police, etc) to members of the favored group. The state is able to discriminate across recipients

²³In the spirit of Caselli and Coleman (2003)

for public expenditure thanks to the ascriptive characteristics of the groups.

On the other hand, taxes are activity specific because in particularly poor developing countries as in Africa, the absence of a competent bureaucracy forces the governments to raise their revenue from indirect taxation on economic activities like the use of Marketing Boards for agricultural products and other manipulations of the pricing system²⁴. In the context of the model, I allow taxation to differ across group-activities, but the ability to imperfectly switch activities will put a ceiling on how differently one can tax different sources of wealth²⁵.

Both groups have identical preferences represented by $E \sum_{t=0}^{\infty} \delta^t C_t^j$, where C_t^j is the consumption of group j at time t , and δ is the discount factor.

At any point in time, one ethnic group has control of the government. Even though a group nominally has the state captured, real power is exercised by a narrow elite inside the group, and I will call it the Leader. Denote by L^i the leader if she is from group i . In the remainder of the paper, I call the group to which the leader belongs "supporter" group, and the other is the "excluded" group for reasons that will become apparent. Each group has an unlimited supply of identical leaders from which to choose.

Denote τ^{ij} the tax level that a leader of group i levies on (the activities of) group j . Similarly, let Z^{ij} be the amount that leader of group i spends on public good for group j . Obviously $i, j = \{A, B\}$. The amount Z^{ij} provides utility $R(Z^{ij})$ to group j with $R' > 0$, $R'' < 0$ and $R(0) = 0$. Group $-j$ receives no utility from Z^{ij} .

This economy has two fundamental states, $S_t \in \{A, B\}$, denoting whether power is captured by group A or group B in period t .

The instantaneous utility of a citizen of group j in state S is thus:

$$C(S, \omega^j) = (1 - \omega^j)(w^j - \tau^{Sj}) + \omega^j((1 - \phi^j)w^j - \tau^{S-j}) + R(Z^{Sj})$$

where time subscripts have been omitted for notational simplicity.

Even though the leader belongs to group S_t she has self-serving interests. In particular, she wants to maximize the funds that she can divert for her own uses. The weakness of institutions is such that it provides strong incumbency advantage: in particular, assume that as long as the incumbent leader retains the support of her group, she maintains her position. For simplicity I assume that the "excluded" group has no chance of recovering power if the incumbent leader retains support from her group. However, if the supporters

²⁴Bates (1981) provides a detailed account of these practices. In addition, Bates (1989) shows that these manipulations are inefficient to the point of contributing to famines.

²⁵Alternatively, reversion to subsistence would put an absolute ceiling to the taxes that can be levied on a sector

of an incumbent leader decide to subvert the authority of their leader and substitute her with another leader from their group, they succeed automatically²⁶. Hence the relevant constraint on the rapacious interests of the leader is the need to keep the support of her group.

The reality of Personal Rule regimes implies that successions are always uncertain matters, resolved in non-institutionalized ways. In the model I assume that when a leader is ousted, the new selected leader is "weak" for the period of the replacement, and the state does not function. While the leader is weak, the group that is not in power can try to obtain it. In this case, the status of the group in power will change with probability $1 - \gamma^S$. γ^S thus captures the degree to which the grip on power of group S is solid. On the other hand it could capture the entrenchment of the leader²⁷ or the relative competence of the next replacement.

A leader of group A obtains instantaneous utility (the expression for B is just symmetric) as long as she is in power:

$$U_t^A = \tau_t^{AA} + \tau_t^{AB} - Z_t^{AA} - Z_t^{AB}$$

and discounts future payoffs by δ . When a leader is not in power, she obtains 0 utility per period.

The timing of each stage game, given state S_t , is the following:

1. Leader L^S announces the policy vector $P_t = \{\tau_t^{SA}, \tau_t^{SB}, Z_t^{SA}, Z_t^{SB}\}$
2. The citizens of group S_t decide to "subvert" $s_t = 1$ or not $s_t = 0$
3. If $s_t = 0$, the citizens decide ω_t^A and ω_t^B and afterwards the policy vector is implemented, payoffs are realized and the next period starts with $S_{t+1} = S_t$
4. If $s_t = 1$, the leader is replaced immediately by another L^S and the "revolt" vector $P_r = \{0, 0, 0, 0\}$ is implemented. With probability $1 - \gamma^{S_t}$, S_t loses power and the next period starts with $S_{t+1} = -S_t$. Otherwise, the next period starts with $S_{t+1} = S_t$

There are a number of features of the model that are worth stressing. First, note that I am treating ethnic groups as single actors. In this case, given that preferences are homogeneous inside each group and political action does not have any private cost this is

²⁶Obviously these are two extreme assumptions taken for expositional simplicity.

²⁷Removing an entrenched leader requires more significant subversion thus weakening the group vis a vis the challenging ethnic group.

not a restrictive assumption. The focus of the model is on the forces that prevent rents to be competed away by different elites inside the same group. Hence, adding heterogeneity and a collective action problem would only help the current leader into stealing even more, because she would find it easier to disrupt coordination. Second, and in the same spirit, I do not allow the leader access to any repression instrument: if she loses the support of her group, she is replaced at no explicit cost.

Third, the economy is modelled in a very reduced form: taxes entail no efficiency cost. As a consequence, all potential for inefficiency is in the allocation of Z . A more complex model would allow us to analyze other aspects of the number of mislead policies that these leaders imposed on their economies, but again, the focus of the model is on political survival and capture of the electorate.

Finally, note that no difference is made between democracy and dictatorship in the model. The evidence from Africa shows that democracies have not behaved differently than dictatorships at the time of supporting kleptocracies and corruption²⁸. In my analysis, the reason is that both types of regimes have been able to play ethnic divisions and patronage networks in exactly the same ways. Institutional reform, in this case, needs to go further than getting people to vote, and has to include effective constraints on the capacity of the leaders to treat ethnic groups differently, as well as smoothing intragroup competition.

3.2 Definition of Equilibrium

The equilibrium concept to be used is (pure strategies) Markov Perfect Equilibrium. In this type of equilibria, strategies can only be contingent on the current state of the world and the prior actions taken within the same period. In the present case, this will provide an equilibrium that is stationary as long as the group in power, which characterizes completely the state space, does not change.

As has been described above, the state space of this economy includes only two elements, $\Theta = \{A, B\}$, denoting whether power is captured by group A or group B at the beginning of period t . Denote the state at each period by S_t , where obviously $S_t \in \Theta$, $\forall t = 0, 1, 2, \dots$. Assume that each group has a set of potential leaders from which replacements will be drawn randomly. Call these two sets of leaders Δ^A and Δ^B . At any point in time, the leader in power is denoted by L^A or L^B depending on the group she was drawn from. Denote by \tilde{L}^A the potential leaders that belong to Δ^A but are not in power currently. \tilde{L}^B is defined symmetrically. The strategy of the current leader L^A is

²⁸See Assensoh and Alex-Assensoh (2002), Jackson and Rosberg (1982) or Mbaku (2000) among others.

denoted by P^A and it is a four-tuple $\{\tau^{AA}, \tau^{AB}, Z^{AA}, Z^{AB}\} \in \mathbb{R}_+^4$ when $S_t = A$. When either $S_t = B$ or $S_t = A$ but a leader belongs to $\sim L^A$, her set of strategies is empty. The symmetric definition goes through for the strategies of leaders L^B . Note that I do not consider the identity of the leader part of the state space²⁹.

The strategy of group A is denoted $\sigma^A(S/P^S)$ and depends of both the state of political capture and the policy vector proposed by the leader. It determines two actions, $\{s^A, \omega^A\}$ that have been defined above as the decision to subvert and the decision to switch economic activities. If $S_t = A$, $s^A \in \{0, 1\}$, that is, if the leader is from group A , this group can decide to give her support or to subvert her authority. On the other hand, if $S_t = B$, $s^A = \emptyset$. $\omega^A \in \{0, 1\}$ independently of the state. The symmetric definition goes through for the strategy space of citizens of group B .

State transitions work as follows. $S_{t+1} = S_t$ whenever $s_t^S = 0$. If $s_t^S = 1$, that is, if there is subversion, $S_{t+1} = -S_t$ with probability $1 - \gamma^{S_t}$. Denote this transition function $T(\sigma^S, S)$. Hence, power only changes hands with positive probability when the supporter group subverts. Otherwise the state remains the same. Since in equilibrium I will show that there is never subversion, the unique equilibrium is stationary.

A (pure strategies) Markov Perfect Equilibrium for this game is a combination of strategies denoted by $\{\tilde{P}^A, \tilde{P}^B, \tilde{\sigma}^A, \tilde{\sigma}^B\}$ such that all four strategies are best responses to the other three for all possible states. In particular, consider the following set of Bellman equations:

$$V^A(S) = \max_{\sigma^A} \{C^A(S, \tilde{P}^S, \sigma^A(S/P^S), \tilde{\sigma}^B) + \delta \Sigma_{\Theta} V^A(S') T(\sigma^S, S)\} \quad (1)$$

$$V^B(S) = \max_{\sigma^B} \{C^B(S, \tilde{P}^S, \sigma^B(S/P^S), \tilde{\sigma}^A) + \delta \Sigma_{\Theta} V^B(S') T(\sigma^S, S)\} \quad (2)$$

$$W_{L^A}^A(A) = \max_{P^A} \{U^A(P^A, \tilde{\sigma}^A, \tilde{\sigma}^B) + \delta \Sigma_{\Theta} W_{\Delta}^A(S') T(\tilde{\sigma}^A(A/P^A), A)\} \quad (3)$$

$$W_{L^B}^B(B) = \max_{P^B} \{U^B(P^B, \tilde{\sigma}^B, \tilde{\sigma}^A) + \delta \Sigma_{\Theta} W_{\Delta}^B(S') T(\tilde{\sigma}^B(B/P^B), B)\} \quad (4)$$

where C^j denotes the consumption of citizen j as a function of the state S and the strategies of the leader in power and both sets of citizens. $V^j(S)$ denotes the value function for citizen j in state S . $W_{L^S}^i(S)$ denotes the value function for leader from group i in state S , when she is the current leader L^S . To complete the definition, note that $W_{\Delta}^A(B)$, $W_{L^A}^A(A)$, $W_{\Delta}^B(A)$ and $W_{L^B}^B(B)$ are completely independent of any decision that the particular leader could take. They only depend of the probability that, in equilibrium, a particular leader will be in power in the future. Since it will be shown that there is no leader ousting in equilibrium, whether the opposite group is in power or whether another

²⁹Issues of interpretation would arise if a leader could play differently just because her name is different.

leader from her own group is in power, the continuation value of an out-of-power leader is 0³⁰. As a consequence, these are not interesting strategic objects in this game. A Markov Perfect Equilibrium is thus a combination of strategies $\{\tilde{P}^A, \tilde{P}^B, \tilde{\sigma}^A, \tilde{\sigma}^B\}$ such that $\tilde{\sigma}^A$ solves (1), $\tilde{\sigma}^B$ solves (2), \tilde{P}^A solves (3) and \tilde{P}^B solves (4).

3.3 Analysis

The equilibrium will be characterized by backwards induction. Assume without loss of generality that $S_t = A$. Let's examine first the decision to switch the sector of production. Take first B producers. Note that the decision to switch does not affect continuation utilities, hence only the static difference in payoffs is relevant. After observing the policy vector P_t , they will switch sector only if the loss in wealth is smaller than the difference in taxation. Formally,

$$\omega_t^B = 1 \text{ iff } w^B - \tau^{AB} < (1 - \phi^B)w^B - \tau^{AA}$$

Since it is in the interest of the ruler not to allow this switch, which is wasteful, this ability to switch provides an upper bound on the differential taxation that the ruler can levy on group B . The effective constraint on the ruler will thus be

$$\tau^{AB} \leq \phi^B w^B + \tau^{AA} \tag{5}$$

The equivalent restriction for group A is then

$$\tau^{AA} \leq \phi^A w^A + \tau^{AB} \tag{6}$$

Obviously, both restrictions cannot be binding at the same time. The analysis below will reveal that the ruler endogenously chooses to discriminate against the "excluded" group. The reason is that she only needs the support of her own group to remain in power.

Let us examine now the decision to subvert by A supporters. Note that the leader is the first player to act in the stage game. As a consequence, since strategies can only be conditional on the state of the economy, a leader L^A always proposes the same policy vector P^A . Upon observing P^A , if there is no subversion ($s_t = 0$), A supporters obtain:

$$w^A - \tau^{AA} + R(Z^{AA}) + \delta V^A(A)$$

³⁰Alternatively, if the probability of election is equiprobable, I only need to assume an arbitrarily high cardinality of Δ so that this probability effectively is arbitrarily small.

Alternatively, if they subvert, $s_t = 1$, they expect:

$$w^A + \delta\gamma^A V^A(A) + \delta(1 - \gamma^A)V^A(B)$$

Hence the non-subversion condition reduces to:

$$\tau^{AA} - R(Z^{AA}) \leq \delta(1 - \gamma^A)(V^A(A) - V^A(B)) \quad (7)$$

Note that the ruler will always satisfy this constraint by subgame perfection. Not satisfying it gives her no benefit because in the period she is thrown out she already receives 0 utility, plus she will obtain 0 forevermore, while being in power implies receiving positive rents each period. Hence in any MPE there will never be any ousting of a ruler. Since no change of ruler implies no change of state, any MPE of this game will be stationary, with the ruler proposing always the same P^A which will be accepted every time. Hence, after some rearranging and introducing stationarity to make $V^A(A)$ and $V^A(B)$ explicit, the constraint that the ruler has to observe to avoid being thrown out can be written as follows:

$$\tau^{AA} - R(Z^{AA}) \leq \frac{\delta}{1 - \delta}(1 - \gamma^A)[\tilde{\tau}^{BA} - R(\tilde{Z}^{BA}) - \tilde{\tau}^{AA} + R(\tilde{Z}^{AA})] \quad (8)$$

Where the superscript \sim denotes equilibrium values. Note that the right hand side of the inequality contains all expected future terms. For notational simplicity we will denote $\Phi^A = \frac{\delta}{1 - \delta}(1 - \gamma^A)[\tilde{\tau}^{BA} - R(\tilde{Z}^{BA}) - \tilde{\tau}^{AA} + R(\tilde{Z}^{AA})]$. This term summarizes the way in which future expected equilibrium play affects present decisions. With these ingredients, now we are able to posit the problem of ruler L^A :

$$\begin{aligned} & \max_{\{\tau^{AA}, \tau^{AB}, Z^{AA}, Z^{AB}\}} \tau^{AA} + \tau^{AB} - Z^{AA} - Z^{AB} + \delta W_{L^A}^A(A) \quad (9) \\ \text{subj.to} \quad & \tau^{AB} \leq \phi^B w^B + \tau^{AA} \quad [\lambda] \\ & \tau^{AA} \leq \phi^A w^A + \tau^{AB} \quad [\nu] \\ & \tau^{AA} - R(Z^{AA}) \leq \Phi^A \quad [\mu] \\ & 0 \leq Z^{AB} \quad [\rho] \end{aligned}$$

Note that in the formulation of this program, I am already taking into account that there will not be subversion, since I am introducing (8) as a constraint that the ruler will satisfy. As a consequence the transition function is trivial: as long as this program is satisfied, the ruler will retain the support of her group and hence there will be no change of state.

The ruler thus maximizes her returns per period, conditional on avoiding any wasteful switching and any subversion. The first order conditions of this program yield:

$$1 + \lambda - \nu - \mu = 0 \quad (10)$$

$$1 - \lambda + \nu = 0 \quad (11)$$

$$-1 + \mu R'(Z^{AA}) = 0 \quad (12)$$

$$-1 + \rho = 0 \quad (13)$$

Since the model is mostly linear, the first order conditions are simple and easy to interpret. From (13) it is obvious that $Z^{AB} = 0$. The reason is that providing patronage good to the excluded group is costly and yields no benefit, since the supporter group is enough to maintain power. From (10) and (11) and the fact that λ and ν cannot both be strictly positive at the same time we learn that $\nu = 0$, $\lambda = 1$ and $\mu = 2$. $\nu = 0$ implies that the second restriction is not saturated. Quite intuitively, then, the leader will tax the excluded group as much as she can, that is, to the point in which the first constraint is binding. Hence, every dollar that the ruler is able to tax her own supporters is worth double for her, because it allows her to tax an extra dollar to the excluded group. This is the reason why $\mu = 2$. Note from (12) that μ multiplies the return from the last unit of patronage given to group A . The non-subversion constraint implies that $\tau^{AA} - R(Z^{AA})$ equals a constant. Hence, an increase in $R(Z^{AA})$ allows the ruler to tax her supporters more. The value of an increase in $R(Z^{AA})$ is thus the value of an extra dollar of taxation τ^{AA} , and we have seen that it is $\mu = 2$. Hence, patronage good for A is overprovided in equilibrium: the ruler considers the benefits to double what a social planner would consider optimal. Formally, the stage program yields the following solution:

$$Z^{AB} = 0 \quad (14)$$

$$R'(Z^{AA}) = \frac{1}{2} \quad (15)$$

$$\tau^{AA} = \Phi^A + R(Z^{AA}) \quad (16)$$

$$\tau^{AB} = \phi^B w^B + \Phi^A + R(Z^{AA}) \quad (17)$$

The solution for the patronage public goods (14) and (15) is thus independent of expectations of future play, but not the amount of resources that the leader can extract from both groups. The solution above presents a mapping between future equilibrium play and present play. Remember that, in equilibrium, another symmetric problem is solved by

any L^B leader in power. The solution to the program for L^B is thus:

$$\begin{aligned} Z^{BA} &= 0 \\ R'(Z^{BB}) &= \frac{1}{2} \\ \tau^{BB} &= \Phi^B + R(Z^{BB}) \end{aligned} \tag{18}$$

$$\tau^{BA} = \phi^A w^A + \Phi^B + R(Z^{BB}) \tag{19}$$

Denote the mapping from expectations to current play $\Gamma(\Phi^A, \Phi^B) = (\tau^{AA}, \tau^{AB}, \tau^{BA}, \tau^{BB})$, given by (16), (17), (18) and (19). Moreover, the definition of Φ^A (and the symmetric definition of Φ^B) provides a mapping from actual play to consistent expectations $\Psi(\tau^{AA}, \tau^{AB}, \tau^{BA}, \tau^{BB}) = (\Phi^{A'}, \Phi^{B'})$. A (rational expectations) equilibrium posits the requirement that these expectations be consistent with future play. In this context this reduces to finding a fixed point of the mapping that relates expectations into themselves: $\Psi(\Gamma(\Phi^A, \Phi^B)) = (\Phi^{A'}, \Phi^{B'})$. Explicitly, this mapping is the following:

$$\begin{aligned} \Phi^{A'} &= \frac{\delta}{1-\delta}(1-\gamma^A)[\phi^A w^A + \Phi^B + R(Z^{BB}) - \Phi^A - R(Z^{AA}) + R(Z^{AA})] \\ \Phi^{B'} &= \frac{\delta}{1-\delta}(1-\gamma^B)[\phi^B w^B + \Phi^A + R(Z^{AA}) - \Phi^B - R(Z^{BB}) + R(Z^{BB})] \end{aligned}$$

For simplicity denote $\zeta^i = \frac{\delta}{1-\delta}(1-\gamma^i)$. Solving this system for the fixed point $(\Phi^A, \Phi^B) = (\Phi^{A'}, \Phi^{B'})$ yields:

$$\begin{aligned} \Phi^A &= \frac{\zeta^A(1+\zeta^B)(\phi^A w^A + R(Z^{BB})) + \zeta^A \zeta^B (\phi^B w^B + R(Z^{AA}))}{1 + \zeta^A + \zeta^B} \\ \Phi^B &= \frac{\zeta^B(1+\zeta^A)(\phi^B w^B + R(Z^{AA})) + \zeta^A \zeta^B (\phi^A w^A + R(Z^{BB}))}{1 + \zeta^A + \zeta^B} \end{aligned}$$

Since there is a single fixed point, uniqueness of MPE is shown. This discussion establishes the following proposition.

Proposition 1 *The model presents a unique MPE. If, without loss of generality, initial conditions determine that group A is in control, the equilibrium is such that:*

1. L^A proposes the following policy vector:

$$\begin{aligned}
Z^{AA} &\equiv Z^* \text{ such that } R'(Z^*) = \frac{1}{2} \\
Z^{AB} &= 0 \\
\tau^{AA} &= \frac{\zeta^A(1 + \zeta^B)\phi^A w^A + \zeta^A \zeta^B \phi^B w^B}{1 + \zeta^A + \zeta^B} + \frac{(1 + 2\zeta^A)(1 + \zeta^B)}{1 + \zeta^A + \zeta^B} R(Z^*) \\
\tau^{AB} &= \frac{\zeta^A(1 + \zeta^B)\phi^A w^A + (1 + \zeta^A)(1 + \zeta^B)\phi^B w^B}{1 + \zeta^A + \zeta^B} + \frac{(1 + 2\zeta^A)(1 + \zeta^B)}{1 + \zeta^A + \zeta^B} R(Z^*)
\end{aligned} \tag{20}$$

2. The citizens of group A accept this policy vector: $s^A = 0$

3. No activity switch occurs: $\omega^A = \omega^B = 0$

If group B starts in control, the equilibrium is symmetric.

3.4 Discussion and Interpretation

The unique equilibrium of the model provides an explanation for many of the facts about the post-colonial political economy of Africa that were difficult to understand using traditional, strongly institutionalized polities models of political accountability.

First, the model endogenously generates inefficient policies. Note that in the simple framework proposed here, the only potential source of inefficiency is the excessive allocation of patronage to a particular group. Since the opportunity cost of public funds is 1, the fact that the marginal return to patronage for the supporter group is $\frac{1}{2}$ shows that political needs cause inefficiencies³¹. This feature of the equilibrium helps explain the patterns of inefficient taxation and inefficient transfers coexisting in the same group, highlighted in the seminal work by Bates (1981) for agricultural policies in tropical Africa. The ruler needs to buy support from her own group while, at the same time, wants to extract a lot of resources from the economy. The best way of doing so, given the absence of lump-sum taxation, is by taxing both groups and then returning some patronage to the supporters even if it is highly wasteful. This is a general pattern of statism in Africa.

Second, the model predicts a very strong bias in the allocation of public funds. The excluded group receives no public benefits while the supporter group receives patronage beyond the optimal point. The use of public money in the form of bureaucratic posts,

³¹If the economy in the model was not so minimalistic, so that deadweight losses from taxation and distortions introduced by mislead foreign exchange policies and granting of monopolies were introduced, the result would clearly be that all these potential distortions would be used in equilibrium, as long as the direct effect could be different across groups.

infrastructure or even access to schools as a form of patronage, as well as the ethnic bias in the allocation of these goods has been widely documented in Africa. Gikuyus and later Kalenjin in Kenya, northern groups in both Nigeria and Uganda or Tutsis in Burundi are just salient examples that reproduce across the continent. The bias in favor of the ruling group is conspicuous and is actually one of the basic sources of resentment between ethnic groups³². Not only access to these positions is biased, but is accompanied by a lack of meritocratic pressure that makes them ripe for all kinds of corruption, official and unofficial³³.

Third, in addition to a biased allocation of patronage, taxation is differential across groups as well. In particular, the excluded group is expropriated of the non-transferable share of its wealth, in addition to taxes levied on the supporter group. Bates (1981) and Bates (1989) provides evidence of this pattern: in Ghana and Uganda, among other examples, the coalition that supported the leader extracted resources from the coffee and cocoa planters. These are crops that involve a lot of specific long term investment. On the contrary, in Kenya the Gikuyu controlled the coffee growing parts of the country, and hence the discrimination against these crops was much less evident.

The combination of higher taxation and absence of patronage makes the excluded group obviously worse off than the supporter group. As a consequence, whenever there is a change in the group controlling power, the patterns of taxation change and purges follow in order to make space for the new elites. For instance, the ascension to power by Moi in Kenya was followed by a substitution of Gikuyus by Kalenjin in all echelons of the state. In Ghana, cocoa has been heavily taxed by all governments, civil and military, except the one headed by Kofi Busia, a native from the Ashanti region which contains a big share of smallholders that grow cocoa. In Cameroon, the substitution of Ahidjo in 1982 unleashed another deep ethnic purge of the bureaucracy. Similar dynamics are found in Nigeria. Ironically, these purges tend to take place under the excuse of anti-corruption initiatives. These switches prove the use of the public resources as patronage, as well as the conscious status of "ruling" groups versus "excluded" groups.

This pattern of discrimination both in the raising of revenue and the patterns of spending supports the vision that a particular ethnic group has the government captured³⁴. The model suggests that the actual benefits of such capture are not spread throughout the group. The particular elite that holds power extracts so much resources that the non-elite

³²See Horowitz 1985, Bates 1983

³³See Collier and Garg (1999) for an account of how ethnic and kinship ties are rewarded in the form of salaries.

³⁴These dynamics have been crystalized in the much repeated sentence "it is our turn to eat". See, for example, Wa Wamwere (2003).

members of the group are actually worse off than in the absence of a state. In equilibrium it is very easy to see that (20) implies that $R(Z^*) - \tau^{AA} < 0$.

This result is also consistent with casual empiricism. In Kenya, a potential political cleavage, and a reason why Kenyatta used the ethnic card to maintain power was the situation of landless Gikuyus, most of them ex Mau Mau fighters. These downtrodden masses did not obtain anything from the regime, even though it was clear to all observers and political participants that Kenyatta was at the helm of a "Gikuyu" regime. Unmasking the fact that the majority of Gikuyu were not actually receiving their share of the spoils was obviously threatening to the regime. That is why the leadership had to act hastily whenever any political entrepreneur tried to shed light on these facts. This included the assassination of a popular politician in 1975³⁵. Wa Wamwere (2003) describes this imbalance in the reception of spoils in a colorful way: "The cream of government service goes to the ruling ethnic elites, the crumbs to the lesser ethnic elites, and dust to members of the so-called ruling ethnic community" and "Among the Gikuyu of Kenya, the approving masses are called grill lickers, *njuna ndara*". The fact that non-elites are not receiving much from the government is by no means circumscribed to Kenya³⁶.

Fourth, the results of the model rationalize the existence of kleptocratic elites supported by masses of impoverished ethnic followers. Even though in absolute terms the masses are made worse off by the existence of rent-creating policies, in relative terms it is much better to belong to the group in power than to the excluded group, and hence they are willing to defend the status quo vis à vis a leader from another group. The expressions (20) and (21) clarify the forces that allow the leader to steal, and quantify its influence. In particular, (20) shows that the leader is able to tax her own supporters for two reasons: because of the non-transferabilities in the economy $-\phi^A$ and ϕ^B - and because of her discretion in the allocation of patronage. These two concepts correspond to the two summands in the expression.

The members of a narrow elite around the leader are thus the ones extracting the lion's share of the rents that these inefficient policies create. Evidence of Kleptocratic tendencies abound in Africa, but Mobutu's Zaire is probably the most cited example. Sani Abacha in Nigeria or Daniel arap Moi in Kenya have been able to amass personal fortunes counted in the billions of dollars³⁷. The "clan de la madame" in Habyarimana's Rwanda

³⁵See Throup and Hornsby (1998:19). They write that this leader was "(...) attempting to mobilize the kikuyu masses -the *masakini* (literally, the poor)- against the conspicuous wealth of the kikuyu elite, especially Kenyatta's relatives and close allies."

³⁶"Ordinarily it is the representatives and fiduciaries of ethnic groups, more than the general members, who gain privileges or suffer punishments under systems of personal rule" Jackson and Rosberg (1983)

³⁷See Ayittey (1992), Wa Wamwere (2003), Mbaku (2000) or any account of corruption in Africa.

is another example of concentrated wealth extracted from the state. Even a relatively well considered leader, such as Houphouet-Boigny in Cote d'Ivoire had his share of personal aggrandizement projects, such as a marble covered cathedral in his home town. Consistent with this concentration of wealth at the highest levels of leadership, Africa is the continent with highest capital flight³⁸.

Finally note that the perverse effect of divisions in this model has nothing to do with diversity in the utility functions, or animosity. The simple inconsequential fact that, in a given society some people have a blue skin while others have it green is enough. The leader uses these ascriptive characteristics to build a coalition of support just by deciding that a condition to receive patronage is to belong to the "right" group.

3.4.1 Amplification of Kleptocracy

The theoretical reason that supports kleptocratic regimes in this model is summarized in expression (7). As long as the supporter group observes a difference between being in the supporter status and being excluded under the leadership of the opponent group, there is a surplus that the current leader can expropriate. Moreover, the more a leader can extract from her supporters, the more she can extract from the excluded group, thanks to (5) being binding in equilibrium. As a consequence, there is an amplification effect of any characteristic of the economy that allows one ruler to steal. Imagine that the institutional or economic technology of this society changes so that L^B is now able to steal more from her supporter group if she is ever in power. An A citizen understands that, in equilibrium, this will mean that should he ever fall into an excluded status, his plight will be worse. This reduces $V^A(B)$ in equilibrium. But obviously, this looses the non-subversion constraint for L^A and as a consequence, L^A is able to increase τ^{AA} to the point where her supporters are again indifferent between giving her support or subverting and taking a lottery that now is much less favorable, since both $V^A(A)$, and $V^A(B)$ are reduced. This amplification mechanism is the reason why in the expressions for equilibrium taxation in Proposition 1 the economic and institutional characteristics of both groups appear: γ^A , γ^B as well as ϕ^A , ϕ^B play a role in both τ^{AA} and τ^{AB} .

In the model, the net amount of funds that the leader L^A is able to extract equals

³⁸Collier and Gunning (1999)

$X^A = 2\Phi^A + 2R(Z^*) + \phi^B w^B - Z^*$. An analysis of comparative statics yields:

$$\begin{aligned}\frac{\partial X^A}{\partial \gamma^A} &= -2 \frac{\delta(1 + \zeta^B)[(1 + \zeta^B)(\phi^A w^A + R(Z^{BB})) + \zeta^B(\phi^B w^B + R(Z^{AA}))]}{(1 + \zeta^A + \zeta^B)^2} \\ \frac{\partial X^A}{\partial \gamma^B} &= -2 \frac{\delta \zeta^A [\zeta^A(\phi^A w^A + R(Z^{BB})) + (1 + \zeta^A)(\phi^B w^B + R(Z^{AA}))]}{(1 + \zeta^A + \zeta^B)^2} \\ \frac{\partial X^A}{\partial \phi^A} &= 2 \frac{\zeta^A(1 + \zeta^B)}{1 + \zeta^A + \zeta^B} w^A \\ \frac{\partial X^A}{\partial \phi^B} &= \left(2 \frac{\zeta^A \zeta^B}{1 + \zeta^A + \zeta^B} + 1\right) w^B\end{aligned}$$

Rent extraction from both groups, independently of the allegiance of the leader, is increasing in the share of non-transferable resources in the economy. This result implies that starting from a situation with low ϕ^A and ϕ^B , if there is an increase in any of them, maybe because of the discovery of oil in a specific part of the country the ruler will steal more, independently of the identity of the ruler or the group that possesses the oil. This results provides a rationale for the well documented "natural resource curse": an increase in the share of non-transferable wealth anywhere in the economy increases equilibrium misbehavior by the ruler. In some cases, tensions originating in these issues have given rise to full fledged ethnic civil wars, as in Katanga or Biafra³⁹ or resulting in the demise of the control of the state as in Sierra Leone.

3.4.2 On Institutional Development

From the previous comparative statics it is clear that the level of rent extraction is diminishing in both γ^A and γ^B . Hence the level of rent extraction diminishes with institutional certainty. Note that the leader can extract more the lighter is the grip on power of her followers, that is, the higher is the probability that replacing her will be accompanied by a loss of power. While γ^i depends on characteristics of the polity beyond the control of the ruler, such as the demographic ethnic balance, it certainly depends as well on institutional factors. In particular, it has been shown that uncertainty in the succession process is a characteristic of systems of personal rule. The logic of the model provides a number of lessons to understand several facts.

First, it is clearly not in the interest of the ruler to invest in strengthening the institutional framework if this means increasing her accountability. Arguably, this is consistent with the behavior of the leadership in most African countries: from the moment of independence, even the first, prophetic leaders such as Nkrumah, clamped down on opposition,

³⁹See Horowitz (1985) for an ethnic account of these wars.

banned political parties, used the police and the military in a partisan way, did not respect judicial independence or any kind of separation of powers and imposed censorship on the press.

Second, it is very important for the leaders not to allow the presence of a strong and obvious second-in-command. This would permit her followers to replace her and quickly coordinate on giving support to this alternative focal point and thus reduce the risk of being taken over⁴⁰. Jackson and Rosberg (1982) write "As long as a ruler retains command in African states, an overriding consideration in succession rivalries is that they be concealed from him". The reason given in their book is that presenting candidacy as successor may signal the politician as an ambitious man keen on substituting the ruler, and hence a potential target for oppression. The reason in the model proposed in this paper is more general. Even if the successor could guarantee not to plot against the ruler, his mere designation reduces institutional uncertainty and, as a consequence, reduces the margin of the leader to steal. A typical way of getting rid of close collaborators that have become too powerful or focal, and therefore a potential threat is the claim of their involvement in a coup plot against the current leader. Note that this is also a pervasive feature of regimes of personal rule⁴¹.

4 Extensions

4.1 On Public Investment

The evidence from Africa shows that governments overspend in wages and undertake very little of infrastructure construction⁴². The intuition from the model clarifies why this is the case.

Note that in the model wages are explicitly considered. The nature of patronage Z is such that it is a flow concept that has to be pledged at every stage and has no consequences for the future. Public wages fall into this category: bureaucrats can easily be fired and replaced as the experience in Kenya and Cameroon shows. The consequence of this is that by expanding public sector employment beyond optimality among her supporters, the leader creates a network of clients personally invested on the continuation of the status quo. This is a reason besides outright corruption and misappropriation why public sector

⁴⁰There are numerous accounts of the obsession of long term leaders in refusing to designate anybody as a successor, being Malawi's Banda probably the most notorious.

⁴¹Sekou Toure's Guinea was famous for the ridiculous amount of coup plots allegedly discovered against the leader. See Jackson and Rosberg (1982) or Cartwright (1983) for an account of these facts.

⁴²See Collier and Gunning (1999) for an account of these patterns. See, as well, Mbaku (2000) and Bates (1981) for some examples in Cameroon, Nigeria and Ghana of excess expenditure in wages.

wages swallow a much bigger share of public expenditures in Africa than in other less developed economies.

A simple extension of the model that includes the possibility to invest in durable infrastructures clarifies which kind of projects will suffer from underinvestment when the leader can use divisions and weak institutions to capture the support of her group.

Assume that the policy vector $P_t^S = \{\tau^{AA}, \tau^{AB}, Z^{AA}, Z^{AB}, I^A\}$ is now a 5-tuple that includes I , public investment. this investment contributes to a stock of public capital K . This stock evolves according to the following dynamics: $K_t = \pi K_{t-1} + I_{t-1}$. Hence, investment today increases the stock of public capital tomorrow and this capital depreciates at a rate $1 - \pi$. The stock of infrastructures provides a benefit $F(K)$ to the supporter group and $\beta F(K)$ to the excluded group, for $\beta \leq 1$. β thus captures the degree of excludability of public infrastructure. A pure public good would have $\beta = 1$. Assume that $F' > 0$ and $F'' < 0$. If there is replacement of a leader, the revolt vector is extended to $P_r = \{0, 0, 0, 0, 0\}$ and therefore the government cannot invest for that period. Assume, finally, that when there is revolt, the enjoyment of the public infrastructure is reduced to $\psi F(K)$, for $\psi \leq 1$. ψ captures the instantaneous cost of upheaval.

To simplify the analysis, and in particular the dynamics that a new state variable could introduce, assume that leaders have no financial constraints and their instantaneous utility is linear: $U_t^A = \tau_t^{AA} + \tau_t^{AB} - Z_t^{AA} - (K_{t+1}^A - \pi K_t^A)$. This implies that whatever is the level of capital optimal in steady state, it will be reached as soon as a leader has a chance to invest. Hence I can set the problem in terms of the desired level of capital for next period \tilde{K}^A , and investment will just be determined as a residual: $I_t = \tilde{K}^A - \pi K_t^A$. As a consequence, the transitional period that a replacement of leadership induces lasts only one period, precisely because of the absence of investment in the presence of revolt.

The model can be solved in exactly the same way as the previous case. In particular, the Markov Perfect Equilibrium has the same characteristics: the leader in power satisfies the constraint that makes her supporters indifferent between replacing her and supporting her rule. Hence, in equilibrium there is no replacement of the leadership. To examine explicitly the new support constraint, note that if the support group does not revolt, $s_t = 0$, they receive:

$$w^A - \tau_t^{AA} + R(Z_t^{AA}) + F(K_t^A) + \delta(w^A - \tau_{t+1}^{AA} + R(Z_{t+1}^{AA}) + F(K_{t+1}^A)) + \delta^2 V^A(A)$$

On the other hand, if they revolt, $s_t = 1$, they obtain:

$$w^A + \psi F(K_t^A) + \delta(\gamma^A[w^A - \tau_{t+1}^{AA} + R(Z_{t+1}^{AA}) + F(\pi K_t^A)] + (1 - \gamma^A)[w^A - \tau_{t+1}^{BA} + \beta F(\pi K_t^A)]) + \delta^2(\gamma^A V^A(A) + (1 - \gamma^A)V^A(B))$$

Note that in writing these expected values I am already making use of the fact that the transitional period will only last one stage before setting into a new equilibrium. Hence, the support constraint, using stationarity, can be written as:

$$\begin{aligned} & \tau_t^{AA} - R(Z_t^{AA}) + (\psi - 1)F(K_t^A) + \delta(1 - \gamma^A)[\tau_{t+1}^{AA} - R(Z_{t+1}^{AA}) - \tau_{t+1}^{BA}] - \\ & - \delta F(K_{t+1}^A) + \delta[\gamma^A + (1 - \gamma^A)\beta]F(\pi K_t^A) \end{aligned} \quad (22)$$

$$\leq \frac{\delta^2}{1 - \delta}(1 - \gamma^A)[\tilde{\tau}^{BA} - \beta F(\tilde{K}^B) - \tilde{\tau}^{AA} + R(\tilde{Z}^{AA}) + F(\tilde{K}^A)]$$

The ruling leader faces a problem identical to (9) with an additional choice variable, K_{t+1}^A and the support constraint replaced by (22). The first order conditions from this program imply that the chosen level of K_{t+1}^A will be determined implicitly by the following expression:

$$F'(K_{t+1}^A)(2 - \psi) - \delta[\gamma^A + (1 - \gamma^A)\beta]\pi F'(\pi K_{t+1}^A) = \frac{1}{2}\left(\frac{1}{\delta} - \pi\right) \quad (23)$$

The interpretation of this expression is a little involved. It can be separated in two parts: $F'(K^A)(1 - \psi)$ is the effect on τ^{AA} caused by the contemporaneous effects of upheaval: if there is no upheaval, supporters enjoy the whole return of the infrastructure, while upheaval reduces it to a fraction ψ . $F'(K^A) - \delta[\gamma^A + (1 - \gamma^A)\beta]\pi F'(\pi K^A)$ is the effect on τ^{AA} caused by the effect of subversion on next period's returns: if there is no subversion, citizens will receive the full return per period, $F'(K^A)$ while ousting the leader has two effects. First, it will reduce the stock of capital tomorrow to πK^A , because of the absence of investment today. Second, the citizens enter on the lottery for the replacement, which means that their expected enjoyment is scaled down by $[\gamma^A + (1 - \gamma^A)\beta]$. Note that the equivalent expression for a social planner that would take the welfare of both groups into account would be:

$$F'(K_{t+1}^A) = \frac{1}{1 + \beta}\left(\frac{1}{\delta} - \pi\right)$$

By comparing the two expressions we can obtain a sense of which parameter values will make them diverge more. In particular look at the right hand side of both conditions. Since $\beta \leq 1$, the leader will tend to provide more capital good than the planner, exactly

for the same reason that she overprovides Z for her supporters: she considers only half of the marginal cost, because increases in taxation come from both groups and she ignores the welfare of the excluded. In particular note that the two expressions would be the same if $\beta = 1$. In such case, ignoring differences in the left hand side of both conditions, they would provide the same level of capital; the planner because it doubles the benefits because she takes both groups into account, and the leader because it halves the costs.

Second, note that the divergence between left hand sides is decreasing in π and in ψ . This implies that the leader will invest more in capital the faster the good depreciates and the less useful it is during upheaval. These two forces are ignored by the social planner⁴³. Both these effects have political reasons and work to increase the costs to the supporters of subverting her authority. In particular, a stock of capital that depreciates very fast needs a sizable investment every period. One of the costs of subversion is the absence of investment for one period, because the state stops working. Obviously, this is not a big cost if depreciation is very slow and, as a consequence, investment is very small each period. In the limit, with $\pi = 0$, K behaves very similarly to Z , and it has been shown above that there is overspending in patronage. The reason for investment to decrease with ψ is exactly the same.

Assuming that $F(K) = K^\alpha$, for $\alpha < 1$, allows an explicit look at the gap between the capital level of the leader and the optimal level. Denote by \tilde{K}^A the level chosen by the ruler and by K^* the level chosen by the social planner. The ratio of both expressions satisfies:

$$\left(\frac{\tilde{K}^A}{K^*}\right)^{1-\alpha} = \frac{2}{1+\beta} \{2 - \psi - \delta[\gamma^A + (1 - \gamma^A)\beta]\pi^\alpha\}$$

Note that this ratio is decreasing in β , ψ and π . The intuitions have been explained above. Note that when $\beta = \psi = \pi = 1$, the level of relative capital provided by the leader is very low, because δ is close to 1. Hence there is underprovision of capital when it is very permanent, it is not excludable and/or does not lose usefulness during periods of upheaval. On the other extreme of the parameter space, there is overprovision of capital.

Hence, the absence of investment in infrastructure can be interpreted under the light of the model. The political survival of the leader hinges on creating a network of supporters personally dependent on her presence in power. Hence only projects from which citizens are easily excludable and/or are not permanent will be undertaken. Again, building a road gives no advantage to the leader, because the day a coup ousts her from power the road will still be there for everybody to enjoy. The same is true for a hospital or a school.

⁴³Obviously, if the good depreciates faster any investor would invest less in it, but this is the effect present in the right hand side of both expressions.

Hence the leader favors expenditures in wages and reduces infrastructure construction. Actually, in Kenya the government found a clever way of disguising these practices as well intentioned policy: Miguel (2000) describes how the government committed to appoint and pay for a teacher for every village that was able to gather the funds for the construction of a school. This policy is profitable for the leader in two ways. First, the government does not pay for the school building, which makes sense because the building will stay in place independently of the survival of the leader. Second, the government sends a teacher, which is a contingent measure dependent on the status quo. If the leader is replaced, the village is not sure that the next government will send a teacher and their investment would be then wasted. This is a very cheap way of enlisting supporters⁴⁴.

The logic of replacement and exclusion thus goes a long way in explaining the patterns of public expenditure by post-colonial personal rulers in Africa.

4.2 On Patterns of Ethnic Violence

The logic of the model can be extended to show that one can enlist the support of the ethnic group in two ways which are not excludable. On the one hand, the ruler can treat her group better than she treats the excluded, so that they fear the prospect of losing power. The other one is by making sure that ethnic supporters disproportionately fear the prospect of being under the rule of another ethnic group. The ruler can contribute to this fear by acting heavy-handedly against the oppressed groups, and making sure that her rule is seen by everyone as ethnic rule. Ayittey (1999) describes how ordinary Krahn people feared the demise of Samuel K. Doe, a fellow Krahn, in Liberia. Even though they did not receive any of the spoils from government, the fact that the regime was clearly almost exclusively Krahn, and that it was engaged in acts of pillaging, rape and atrocities against the other groups made clear to them that retribution would be against all Krahn the day the regime was defeated. Obviously, this made even more Krahn people collaborate in defending the regime. Hence, ethnic violence can be used to enlist otherwise reluctant members of the group in the defense the regime.

To see how the prospect of violence is equivalent to patronage links to the ruler the model can be extended in a very simple way. Assume that by oppressing the excluded group, the leader can contribute to the level of enmity that the excluded group holds against the supporter group. Call E_i^{AB} the level of enmity that group B has against

⁴⁴This argument for the existence of inefficient clientelist networks based on "flow" goods such as expanded public employment versus "stock" goods such as infrastructure is examined explicitly in Robinson and Verdier (2002). They develop other comparative statics, but the framework presented here explicitly links the appearance of these networks with the weak institutions and ethnic divisions present in Africa.

A. Assume that this variable evolves in the following way $E_t^{AB} = \theta E_{t-1}^{AB} + o_{t-1}^{AB}$, where o_t^{AB} denotes the amount of costly oppression that L^A inflicts over B citizens. Assume further that living under the leadership of a group that stocks enmity against you causes disutility because of revenge, which is captured by $\Pi(E^{AB})$, with $\Pi' > 0$, $\Pi'' < 0$, and $\Pi(0) = 0$.

Now, if supporters don't subvert, $s_t = 0$, they will receive:

$$w^A - \tau_t^{AA} + R(Z_t^{AA}) + \delta V^A(A)$$

If they replace the leader, $s_t = 1$, they will receive:

$$w^A + \sum_{t=1}^{\infty} \delta^t \{ \gamma^A (w^A - \tilde{\tau}^{AA}) + (1 - \gamma^A) (w^A - \tilde{\tau}^{BA} - \Pi(E_t^{AB})) \}$$

Hence, the support constraint can be written as:

$$\tau_t^{AA} - R(Z_t^{AA}) \leq (1 - \gamma^A) \sum_{s=t+1}^{\infty} \delta^s (-\tilde{\tau}^{AA} + \tilde{\tau}^{BA} + \Pi(E_s^{AB})) \quad (24)$$

Hence, the program of the leader is to maximize $\sum_{t=1}^{\infty} \delta^t \{ \tau_t^{AA} + \tau_t^{AB} - Z_t^{AA} - Z_t^{AB} - (E_{t+1}^{AB} - \theta E_t^{AB}) \}$ under the usual no-switching constraints and (24). The optimal level of enmity that L^A seeks (remember that, as in the previous subsection she will jump right away to this level because of linear utility) is determined by:

$$\sum_{s=t+1}^{\infty} (\delta \theta)^s \Pi'(\theta^s E_*^{AB}) = \frac{1 - \theta \delta}{2(1 - \gamma^A)}$$

This expression shows that the leader will cause a higher level of enmity the slower enmity disappears (the higher θ), the smaller the time discounting (the higher δ) and the bigger the chance that the supporters will lose control of power should they replace the leader (the lower γ^A). The intuition is perfectly in line with the rest of the argument developed in the paper: $V^A(B)$ is smaller the higher is the level of enmity. Hence the ruler invests in that to make her supporters wary of entering into the replacement lottery. She can extract more resources the worse is the prospect of her supporters under an opposition leader: the slower is the rate of forgiveness of enmity, the longer they will suffer under discrimination and hence the higher the level of enmity that is optimal for the ruler.

To see that enmity behaves similarly to the capacity to discriminate in patronage, rename $\Psi^{AB} = (1 - \gamma^A) \sum_{s=1}^{\infty} \delta^s \Pi(\theta^s E_*^{AB})$. With this change of notation the model can be solved for the unique MPE which has the following expression for taxes extracted from the supporter group:

$$\tau^{AA} = \frac{(1 + \zeta^B)\zeta^A \phi^A W^A + \zeta^B \zeta^A \phi^B W^B + (1 + \zeta^B)\zeta^A \Psi^{BA} + (1 + \zeta^B)\Psi^{AB} + (1 + 2\zeta^A)(1 + \zeta^B)R(Z^*)}{1 + \zeta^A + \zeta^B}$$

where, as usual, $\zeta^A = (1 - \gamma^A)\frac{\delta}{1 - \delta}$ and $\zeta^B = (1 - \gamma^B)\frac{\delta}{1 - \delta}$. Note that in this expression, the capacity to induce enmity enhances the capacity to steal in a similar way as the ability to discriminate in patronage. Kleptocracy can thus be supported as well by indiscriminate use of violence in the name of the group, as Idi Amin's Uganda and Samuel K. Doe's Liberia show.

There are more channels through which the ruler benefits from ethnic violence.

First, note that the discussion up to now has taken the ethnic structure of society as given, but this has been contested by a whole strand of scholarship on ethnicity. From a constructivist point of view, note that being in power endows the ruler with the capacity to strengthen the definition of her ethnic group vis à vis the excluded. Whoever receives favorable treatment by the state will be considered from one group, and whoever receives oppression and exclusion belongs to the other group, or can be dubbed an "ethnic traitor", a term that has been used multiple times to refer to moderates. Since violence is a force that contributes to the crystallization of ethnic groups⁴⁵, the leader is an agent in the creation of categories, and participates actively in generating enmity between them. The use of ethnic violence is thus clearly complementary with the equilibrium exclusion strategy described in the model, and they actually tend to appear together in reality. The leader benefits from creating ethnic division, and from fostering ethnic enmities because this liberates her from accountability by her own ethnic base of support.

Post-colonial rulers have, by no means, been the first ones in using these strategies in Africa. Multiple academic accounts, among them Cooper (2002) and Horowitz (1985) describe the process by which ethnic separation became a basic strategy of domination by the colonial powers. Ethnic groups were classified in static categories and then directed to the kinds of jobs for which they were supposedly better endowed. In reality, political reasons were paramount in deciding whether nilotes were good for the army in Uganda and baganda were good for civil service. Some groups were allowed to reach higher levels of schooling, most notably tutsis in Rwanda, but they were demonised among the other groups when they became spearheads in the demands for independence. Whatever the motivations of the colonial rulers, the truth is that this process contributed dramatically to the creation of ethnic self-consciousness and resentment. These societies were, as a consequence, ripe for the exploitation of such divisions by their post-colonial leaders.

⁴⁵See Kauffmann (1996)

Second, ethnic violence is used against potential elites from the same group that contests the power of the ruling elite. This logic can be used to understand the scale of atrocities and ethnic cleansing in Rwanda in 1994. Prunier (1995) describes how the "hutu" regime of Habyarimana and the inner circle captained by his wife was besieged both by the Tutsi guerrillas of the RPF and the southern moderate hutu elites that were complaining at the level of corruption and kleptocracy concentrated in northern hands. By making the majority of the hutu population participate in the atrocities, the regime almost succeeded in doing two things. First they completely erased the northern-southern divide inside the hutu elites by either eliminating those hutus deemed too moderate or making them participate in the genocide. Second, the scale of the atrocity against the tutsi minority was so horrific, that no hutu could accept the prospect of living under a tutsi leader for fear of equally horrible retribution. The massive scale of hutu refugee tides to Zaire is a testament to this strategy. This pattern of government sponsored ethnic violence, albeit in a somewhat smaller scale has been present in Uganda, Burundi⁴⁶ and other countries in the region. In the model, by creating a huge divide with the excluded group by the use of violence, the ruler makes her supporters even more wary of replacing her, since that positive probability of losing power becomes more threatening because of the fear of retribution. Stressing the divide between the ruling group and the challengers via violence thus becomes an efficient way of thwarting competition internal to the group.

Finally, note that the mere fact of keeping the excluded group in a discriminated position engenders violence by both sides, normally undertaken by ethnic militia and not government agents such as the army.

The logic of exclusion and kleptocracy thus provides as a corollary a framework to understand some of the patterns of high and low level ethnic violence that plague deeply divided societies, especially when their governments define themselves in ethnic terms.

5 Conclusion

Post-colonial African leaders have provided very bad outcomes to their populations. This has been the result not so much of economic incompetence but of flagrant abuse of power to impose distortionary and rent-creating policies on their economies. Moreover, these rents have been dissipated at the very top of the leadership, and some countries have been governed by outright kleptocracies. Nonetheless, accounts coincide in considering these regimes as weak, so it is not credible that they have survived in power thanks to the use

⁴⁶See Lemarchand (1996) for an account of the seeds of violence and patterns of ethnic domination in Burundi.

of force to oppress the whole population.

This paper advances a different explanation for such blatant absence of political accountability: weak institutions have allowed leaders to exploit ethnic divisions. In particular, the use of patronage networks to treat the ethnic group of the leader better than the opposition makes ethnic supporters keen in maintaining this relative superiority. If weak institutions have allowed the leader to establish a system of personal rule, replacing the ruler will be accompanied by upheaval and consequentially the current opposition could take control of the state. This combination makes supporters reluctant to replace the leader and hence rents are not dissipated: the ruler is able to extract resources from all groups in society. From the analysis I derive a number of corollaries that relate the amount of funds diverted by the leader to the structure of the economy and the quality of institutions.

Obviously, there are a lot of factors contributing to the absence of accountability that have been left out of the stylized model. Here I name a number of them, for further research. First, a particularly interesting factor is the collective action problem. Ousting a leader that governs in a personal rule regime probably entails activities that imply personal risk. Since the benefit of replacing the leader is collective, it is obvious that there is scope for free-riding. I did not include this element in the model because I wanted to show that even in the absence of collective action problems these leaders are able to establish kleptocracies in deeply divided societies, but there is no doubt that there is a lot to be learnt from an explicit analysis. In particular, oppression of the press has been a typical feature of these regimes. If there is a collective action problem, not allowing the press to report freely can contribute to make coordination matters even worse.

Second, it would be interesting as well to model explicitly the role of violence in keeping a sizable share of the population in the excluded status, as well as oppressing the emergence of any potential leader among the supporter group. These two patterns of violence seem, for theoretical as well as empirical reasons quite different and an explicit model may show, for example, why these regimes have kept the military weak while at the same time used ethnic militias as a close, albeit difficult to control, substitute.

Third, the model assumes a society divided in the most trivial way: two groups. Adding more groups, as well as allowing sizes to vary may offer some insights in the type of ethnic dictatorship that will emerge. It would be interesting to see if the existence of "pivotal" groups makes kleptocracy a less viable alternative, even though the empirical evidence does not seem to support this hypothesis. Is there an ethnic configuration of society that is differentially conducive to abusive rule?

Fourth and common with the majority of models that treat ethnic groups as given, the

insight offered begs the constructivist critique: would this conclusion hold if we allowed groups to be generated endogenously by the action of ethnic elites? In the last section I have argued that not only the conclusion would be robust, but that we would actually observe these leaders trying to create or activate cleavages in society, following the lines of the colonizers. However, this process is not modeled explicitly and from such an engagement other lessons may be learnt.

The main lesson of the growing field of analysis of policy determinants in weakly institutionalized regimes is that their inefficiency results precisely from the weakness of constraints on leaders, and not so much from their personal characteristics. The same is true for the political outcomes of such countries. Attempts at helping these economies have to take into account where the incentives of their leaders are (mis)placed. In particular, given the absence of accountability highlighted here, it is not surprising that enormous amounts of foreign aid have passed unnoticed through African economies to end up stashed in Swiss bank accounts. This paper is an attempt to offer a theoretical foundation for those who insist that serious institutional reform has to be attempted to solve the plight of African citizens.

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