

Violence, Bribery, and Fraud: The Political Economy of Elections in Sub-Saharan Africa

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Abstract:

Post-Soviet African democratization has introduced elections into contexts that often lack restraints upon the behavior of candidates, resulting in the emergence of voter intimidation, vote-buying, and ballot fraud. We propose a model of electoral competition where, although some voters oppose violence, it is effective in intimidating swing voters. We show that in equilibrium a weak challenger will use violence, which corresponds to a terrorism strategy. Similarly, a nationally weak incumbent will use repression. However, a stronger incumbent facing local competition will prefer to use bribery or ballot fraud. We discuss the applicability of the model to several African elections.

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“Perhaps we are heading for a masquerade or a parody of elections.”

- Presidential candidates releasing a joint statement in Congo (DRC).

1. Introduction

Elections are conventionally regarded as the institutional mechanism at the core of democracy. The discipline of acquiring power through an election is assumed to make government accountable to citizens, and thereby to confer legitimacy. The absence of contested elections in communist regimes was seen as their defining deficiency, and even though elections had been run under single-party regimes, the fall of the Soviet Union was followed by a clear expansion in the use of elections across a swathe of autocracies in Sub-Saharan Africa.

Elections can indeed be introduced into previously autocratic systems with relative ease: candidates and voters face strong incentives to participate and, being brief events, elections do not impose continuous costs. In contrast, restraints on the behavior of candidates are difficult to establish, being public goods and continuous processes. The idea that benign effects of elections are contingent upon these complementary institutions has become increasingly endorsed. If candidates face no restraints upon their behavior, illicit electoral strategies become feasible, political accountability fades away, and public choices may transgress voter preferences with impunity. Consistent with these concerns, Chauvet and Collier (2009) find that elections in developing countries improve economic policies only if they are properly conducted.

This paper is motivated by the idea that the African wave of democratization following the collapse of the Soviet Union may be associated with a new degenerate form of democracy, in which illicit electoral behavior can be pervasive. Voter intimidation, vote-buying, and ballot fraud have featured prominently in many recent elections in Sub-Saharan Africa, and are at the center of our modeling. We propose a general theory where these illicit strategies are available to politicians (an incumbent and a challenger) to help gain political power in elections. We look for an understanding of the

conditions behind the emergence of these strategies in equilibrium, with corresponding patterns of behavior by the candidates.

Our world is one where politicians care primarily about winning the election. In our model, we assume two different types of base voters, hardcore and soft base supporters. Soft base supporters, unlike their hardcore counterparts, disapprove of violence. Hence, a politician who relies on soft base voters cannot hope to have significant support at the polls by running a violent campaign.

Nevertheless, within our benchmark model violent intimidation can be useful for candidates. We assume that violence is effective for both the incumbent and challenger, in intimidating opposed soft base voters into not voting, thereby reducing the vote for their opponent. We find that in this context politicians will resort to intimidation when they are in a weak position: they will then have less to lose in terms of base support, meaning they may be able to secure a higher share of the electorate by turning violent. This situation corresponds to the resort to repression by a highly unpopular incumbent or the resort to terrorism by a fringe challenger.

We then introduce an incumbency advantage at the national level, which we represent as the ability of the incumbent to undertake vote-buying and ballot fraud. Such an advantage is plausible. Vote-buying is usually feasible because the incumbent has real resources to spend (or can credibly promise to spend them) on the electorate in general and on clienteles in particular. Ballot fraud is usually feasible because the incumbent controls the way the election is run, i.e., through the electoral commission. For simplicity, we assume the incumbent can always win through ballot fraud. We find that in these circumstances, when the challenger poses an electoral threat at the local level, the incumbent will be obliged to actively seek victory through the use of illicit strategies. He will use vote-buying or fraud depending on relative effectiveness, which in our model is determined by the size of base voters and of the relative budgets of the candidates. However, in these circumstances, the incumbent will prefer not to use violence since it is ineffective at yielding an electoral victory (the key assumption here is that voters cannot be intimidated to vote for the incumbent).

Finally, we analyze another modeling variation, keeping only the ability to undertake ballot fraud as the national incumbency advantage, and adding a local advantage for the challenger through vote-buying. In many decentralized settings, national challengers may hold local political power, which normally raises opportunities for vote-buying. We find that challengers will always use vote-buying, as they want to maximize their share of the national vote. We find that incumbents will use fraud, except when they hold a strong hardcore base or face the possibility of cheap intimidation.

We illustrate the equilibrium patterns of the model with a discussion of prominent specific elections that have taken place in Sub-Saharan countries in recent years. The recent elections in Zimbabwe constitute a good example of a setting where a weakened incumbent is ‘obliged’ to repress to maintain some political power. Nigeria in 2007, on the other end of the spectrum, is probably the best illustration of a ‘terrorism’ equilibrium, where marginal opposition forces, in the face of the overwhelming domination of oil-enriched People’s Democratic Party (PDP), have nothing to lose from violent strategies. At the same time, given its federal nature, Nigeria serves as a suitable example to test our model with a local-challenger advantage. Angola in 2008 and Kenya in 2007 are our chosen cases of nationally powerful incumbents being obliged to buy votes or resort to ballot fraud (respectively) to win elections. We also discuss the (infrequent) cases where challengers were able to win elections in Sub-Saharan Africa (something that happens in our model only when there is no incumbency advantage), and underline that a national incumbency advantage may be determined by the availability of natural resources and the lack of constitutional term limits.

We begin by reviewing the related theoretical literature. We then present our model, starting with the baseline, extending it to encompass the incumbency advantage, and modifying it to study powerful local challengers. Section 4 discusses the equilibrium outcomes, while recalling details of recent African elections. We then conclude.

2. Literature

When studying elections, mainstream political economy has devoted its attention to strategies aimed to please voters. Within this focus, optimistic results on the welfare implications of competitive lobbying (Becker 1983) have been widely disseminated. On a more cautionary tone, Grossman and Helpman (1996) underlined the welfare consequences of poor voter information,¹ which ultimately shed light on the effects of identity voting. Like these seminal contributions, our work is centered on political competition. However, contrary to the classical literature, which encompasses electoral strategies like clientelism and vote-buying, our focus is on widening the range of illicit electoral strategies available to the candidates: namely, we admit the possibility of negative campaigning through voter intimidation, and we challenge the actual meaning of an electoral contest by allowing the emergence of ballot fraud.

Our theory is closest to Chaturvedi (2005), who, like us, argues that the use of political violence by a party decreases with its electoral support. However his model assumes that investing in violence has constant returns while other forms of campaigning (what he characterizes as ‘ideological’) have diminishing returns on a candidate’s voting share. This very specific assumption drives his non-intuitive result that strong incumbents use more violence (contrary to the cases we study). Differently from Chaturvedi’s approach, our theory explicitly models voter electoral behavior, distinguishes between vote-buying and fraud, and, more realistically, assumes that winners care about holding a majority. In addition, existing models analyzing the patterns and consequences of negative campaigning closely match the main idea behind our representation of voter intimidation (Skaperdas and Grofman 1995; Konrad 2000). More tangentially, the theoretical literature on conflict relates to our model in that violence is found to be a strategy used by the weak (see, for instance, Grossman 1991).

Ellman and Wantchekon (2000) also analyze electoral violence. However they focus on post-election violence while our main argument relates to intimidation before and during elections. Ellman and

¹¹ This body of work builds on the influential contribution by Downs (1957), which recognizes that voters are rationally ignorant.

Wantchekon argue that the expected ability to cause post-election conflict may affect electoral behavior. We come back to this hypothesis in our empirical discussion. Robinson and Torvik (2009) focus on the identification of the primary targets of electoral intimidation, arguing that the primary targets are swing voters. They suggest that in weak institutional environments, politicians anticipate that if they had to compete for the support of swing voters they would need to spend considerable resources on policy favors. We build on their result, incorporating it into our own model as an assumption.

Our work also relates to more fundamental models of vote-buying and clientelism: we analyze an electoral game between political candidates facing voters whose behavior can be affected by positive/negative political transfers. This is a diverse literature including: the probabilistic voting models with ideologically driven voters, aimed at understanding redistribution policies (Lindbeck and Weibull 1987; Dixit and Londregan 1996); Colonel-Blotto-type (simultaneous-move) vote-buying games, intended to study the impact of different voting systems (Myerson 1993; Lizzeri and Persico 2001); sequential vote-buying games explaining the emergence of supermajorities (Groseclose and Snyder 1996); models with strategic voters analyzing the welfare implications of vote-buying (Weiss 1988; Philipson and Snyder 1996; Dal Bo 2007); and models intended to distinguish between clientelism (votes for favors conditional on electoral outcomes) and plain vote-buying (unconditional transactions), which implicitly consider the enforcement problems embedded in these exchanges (Robinson and Verdier 2001; Vicente 2007; Dekel et al 2008).

Since our aim is to illuminate the strategic choices made by politicians in African elections, it is important to acknowledge the empirical specificity of such applications. Namely, in most Sub-Saharan African societies citizens have strong sub-national identities. The link to political violence is evident in the literature. Horowitz (1985), while underlining that in those environments ‘an election can become an ethnic head-count’, points to the need to go beyond mere ethnic fragmentation in order to predict the emergence of violence. Namely, Horowitz suggests that ethnic groups tend to be involved in conflict if there are a few large groups rather than many small groups. Consistently,

Esteban and Ray (1994) and Basuchoudhary and Shughart (2010) explore measures of ethnic polarization. The latter concludes empirically that terrorism is more likely to appear in ethnically polarized societies, an assertion that is related to the way we understand the emergence of terrorism in this paper.

Identity voting has specifically become a prominent issue in Sub-Saharan Africa politics, as it has a range of adverse consequences. By reducing electoral competition, it reduces the incentives for politicians to forgo their personal interest (Besley 2006). More fundamentally, ethnic voting may shape the constitutional rules which determine how power is distributed. Kimenyi and Shughart (2010) show that this was the case in the Kenyan constitutional referendum of 2005. Potentially, ethnic voting affects all three of the illicit tactics considered in this paper. Violence aimed at discouraging the turnout of opposing voters may become easier because the allegiance of voters can be readily inferred from their ethnicity. Bribery may become more costly because allegiance based on identity may increase the 'price' of inducing a change of vote. Ballot fraud may depend upon inflating the size of those ethnic groups that support the government, turning voting registration and the population census into key political arenas. We will note such influences in our discussion of particular African elections.

3. A model of electoral violence, vote-buying, and vote-miscounting

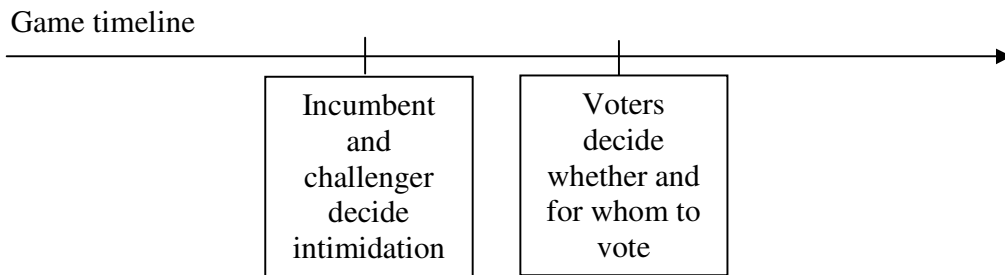
3.1. Elections with violence

In our model, the use of violence is aimed at discouraging known opponents from voting.² Note that the relevant voter behavior is highly observable (i.e., by means of observation at the polling stations) and that one hired gang can constitute a credible risk of violence to many voters. These conditions make voter intimidation readily feasible to both incumbent and challenger.

² The statement that intimidation decreases voter turnout has robust evidence in Wilkinson (2004), using case studies; Bratton (2008), using observational data; and Collier and Vicente (2009), using experimental data.

In the benchmark version of our model we now present, there is an incumbent I , a challenger C , and a continuum of voters of mass 1. They interact to allocate political power using an election. The timeline of the sequential complete-information game is illustrated in Figure 1. Close to the election, incumbent and challenger simultaneously choose their levels of intimidation. Subsequently, voters decide whether to vote and for whom.

Figure 1: The sequence of the benchmark game



Voters are defined on a continuum, with voter $i \in [0,1]$. For simplicity we assume that all voters side with one or other of the candidates in the initial status quo. The electorate is divided in four groups. Each candidate has a soft vote-base depicted by share b_j^S ($j = I, C$), with $0 \leq b_j^S \leq 1$, and a hardcore vote-base depicted by share b_j^H ($j = I, C$), with $0 \leq b_j^H \leq 1$. Naturally, we need to verify that $b_I^S + b_C^S + b_I^H + b_C^H = 1$.

We postulate that violent intimidation cannot affect opponent hardcore base voters' decisions on whether and for whom to vote. Soft base voters are 'swing' and can be kept away from the polls by private losses that are enforceable, coming from violent intimidation, as described next. Note that a possible way of interpreting the existence of hardcore supporters is to think of ethnic voting: those are the voters that by definition (by ethnic origin) side with a given candidate, and cannot be intimidated towards abstention.

Voter i belonging to the soft base of one of the candidates will abstain if

$$V_i^j > 0,$$

with $j = I, C$, where V_i^j denotes violent intimidation by candidate j towards voter i . Candidate j is the candidate that is not supported by voter i , i.e., we assume that a candidate can only intimidate the soft supporters of his opponent.

We make a further hypothesis regarding violent intimidation. Although intimidation may help the candidates by reducing the turnout of supporters of their respective contenders, we assume that it comes at a cost. As the intimidating candidate becomes identified with violence (when he uses violence), his own soft base supporters are lost to abstention, i.e., his base support is reduced to b_j^H , which we may interpret as extremist support. We therefore assume a mainstream distaste for violence, originating from soft base voters, which we will show may lead candidates with strong soft support not to behave violently.

We now turn to the payoffs of the candidates. We postulate two prizes to fight for: the executive prize, attributed to the candidate who wins the election (fixed), and a second-tier, political influence prize, which is allocated to the loser – this is measured by the share of the votes of the loser in the election (variable). The latter implies that the loser is able to extract rents that are proportionate to his electoral performance.³ The candidates face the payoff

$$P_j - K_j,$$

for $j = I, C$. Political benefits P_j are defined as

$$P_j \equiv \alpha W_j + \beta X_j.$$

There, $W_j = 1$ in case j is the winner of the election - $W_j = 0$ otherwise. Candidate j wins the election by garnering a majority of the ballots cast, i.e., a share of the votes of 50% or higher. In case of a tie, we assume without loss of generality that the incumbent is the winner. X_j is defined as the

³ This assumption could be interpreted in the context of a three-candidate game, where a third political player (a *bureaucracy*) would be inactive and entitled to obtain the second-tier residual power share, i.e., the incumbent's share of voting. Still, we would be implicitly assuming that the winning candidate accepts a modest degree of second-tier political influence.

actual (ballot) voting share of candidate j if j is the loser of the election - $X_j = 0$ otherwise. We assume that winning the election is more attractive than all losing outcomes ($\alpha > \beta$), and that both winning the election and earning votes as the loser confer large benefits relative to costs (we assume α, β to be large enough). Costs are defined as

$$K_j \equiv \int_0^1 V_i^j di, \text{ with } j = I, C.$$

In addition we assume that players are budget-restricted:⁴ $K_I \leq 1$ and $K_C \leq M_C$ (where 1 and $M_C > 0$ stand for total resources available to the incumbent and challenger respectively).

3.1.1. Equilibrium

We now solve this simple two-candidate game for its Nash equilibrium,⁵ by analyzing the different parameter sets (i.e., values of $b_I^S, b_C^S, b_I^H, b_C^H, M_C$).

Since the game is symmetric with respect to the two candidates, we focus on analyzing the case in which $b_I^S + b_I^H \geq b_C^S + b_C^H$. In this case the incumbent is set to win the election in the initial status quo, which, given the assumptions on α, β , corresponds to the best possible payoff in the game.

Now consider the case in which $\frac{b_C^H}{b_I^H + b_C^H} > b_C^S + b_C^H$, i.e., the share of votes for the challenger

when he uses violence towards all the soft supporters of the incumbent is higher than his status quo share of votes. Then the challenger has an advantage in using violent intimidation. By intimidating, the challenger can achieve a discrete jump in his vote share at low cost.⁶ This outcome emerges when

⁴ This restriction may be interpreted as a credit-limit determined by the intimidation technology or the legal environment.

⁵ Note that we reduce attention to the strategies by incumbent and challenger, as we do not model voters strategically in our equilibrium definition. They are just assumed to follow a decision rule at the individual level which does not depend on their beliefs about the other players' behavior.

⁶ To guarantee existence of equilibrium throughout our model, we assume that when targeting a voter (by trying to change his voting behavior, i.e., breaking indifference), a candidate has to spend a minimum amount of resources, which we set at an arbitrarily low level.

the challenger has sufficiently small soft support, or in other words, he has relatively little support to lose by going violent.

This strategy could be very beneficial if $\frac{b_C^H}{b_I^H + b_C^H} > 0.5 \Leftrightarrow b_C^H > b_I^H$ (i.e., the challenger's

hardcore support is relatively large), as the challenger could then win the election. Note that in that case there is no equilibrium as the challenger could always find a smaller majority to win the election (since the challenger has to guarantee more than 50% of the vote to win the election), and therefore could always spend fewer resources on violent intimidation. If $b_C^H \leq b_I^H$, the incumbent wins the election but the challenger maximizes his share of votes (the second prize) through intimidating all soft supporters of the incumbent at a minimal level. The best response from the incumbent to the above violent strategies by the challenger is always to stay still (a dominant strategy in fact), as he does not have the means to prevent any soft supporters from abstaining to vote (an assumption we will lift in the next section).

We represent in Figure 2 below the case in which the incumbent wins the election and the challenger implements a violent strategy because he has very low voter support, both in terms of soft and

hardcore support ($\frac{b_C^H}{b_I^H + b_C^H} > b_C^S + b_C^H$ and $b_C^H \leq b_I^H$). This outcome resembles the idea of

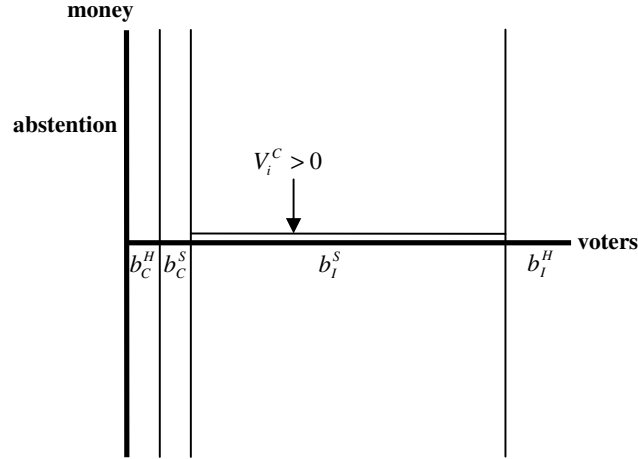
terrorism. If it were the symmetric case, with a status quo advantage for the challenger, we would refer to the symmetric idea of repression. Note that on the x-axis we represent the population of voters, distinguishing between the four different types of base voters (the vertical lines depict the limits of each group of supporters); on the y-axis we depict money spent in influencing voters, towards abstention (upwards).

If $\frac{b_C^H}{b_I^H + b_C^H} \leq b_C^S + b_C^H$, namely when the challenger's soft base support is large and there is more to

lose by going violent, the challenger prefers not to use violent intimidation. Otherwise he would see his support at the polls diminish. As consequence the status quo prevails, meaning that no illicit

strategies are used and the incumbent wins the elections. This parameter set corresponds to *conventional politics*.

Figure 2: Intimidation (terrorism case)



We have then proved the following statement:

Proposition 1: In a game where both incumbent and challenger can resort only to violent intimidation to change their electoral standing:

(i) **If the incumbent has larger support in the status quo ($b_I^S + b_I^H \geq b_C^S + b_C^H$):**

a. **If the challenger prefers intimidating all opposed soft voters to the status quo**

$$\left(\frac{b_C^H}{b_I^H + b_C^H} > b_C^S + b_C^H \right):$$

- i. **If the challenger is capable of winning by intimidation ($b_C^H > b_I^H$), then there is no equilibrium.⁷**
- ii. **If the challenger is not capable of winning by intimidation, the challenger (marginally) intimidates all soft voters supporting the**

⁷ We could easily change this outcome to allow for existence of equilibrium, with the challenger winning the election through infinitesimal intimidation. This would be achieved by assuming a certain $\varepsilon > 0$ in addition to 50% to be the necessary vote share for the challenger to win.

incumbent in order to maximize his share of the vote (the incumbent wins). We refer to this outcome as terrorism.

b. If the challenger does not consider intimidating all opposed soft voters, the status quo prevails without intimidation (the incumbent wins). We refer to this outcome as conventional politics.

(ii) If the challenger has larger support in the status quo, we basically have a symmetric set of possible equilibrium outcomes.⁸ We refer to the case in which the incumbent intimidates all soft support voters of the challenger as repression.

Note that we interpret this simple symmetric game as the setting that arises when political competition is symmetric and the incumbent has no advantage in terms of available strategies. We find two equilibrium outcomes depending on who the candidate with the status quo advantage is: violent intimidation coming from the weaker candidate (in case he is weak in terms of soft and hardcore support), or conventional politics (in case the weaker candidate relies on soft support). This is when the challenger may win the election in our theory, if indeed he departs from a status quo advantage at the polls and faces a conventional politics outcome. We now analyze a more complicated game in which we assume an incumbency advantage.

3.2. Incumbency advantage: bribery and fraud

We now extend our benchmark model to encompass an incumbency advantage in terms of available strategies. We take this advantage to represent the national strength of the incumbent, in contrast to the competitive strength given by the relative size of vote bases. From now on, we interpret the latter as a local advantage. Indeed, to make full use of the distinction between strategic advantage and competitive advantage, we now think of the polls in our model as depicting local polls for national

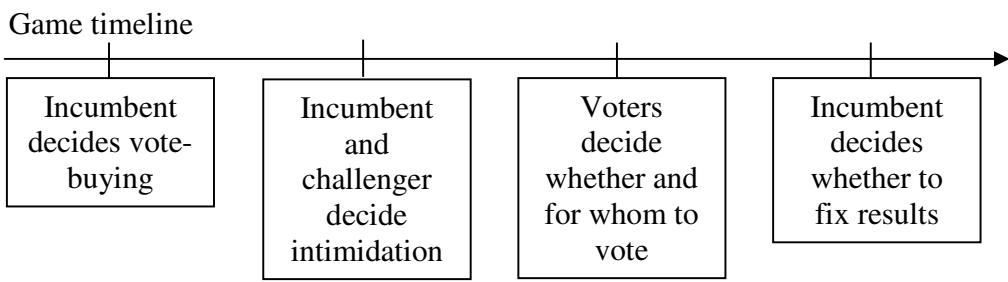
⁸ Note that the only asymmetry comes from our assumption on ties. The incumbent could win in equilibrium when he prefers intimidation to the status quo and he has larger hardcore support than his opponent. This outcome would be achieved by having the incumbent spend just enough resources on violence to achieve a bare 50% majority.

electoral contests. We assume the incumbency advantage is that the incumbent can afford to buy votes and induce vote-miscounting in his favor.

Vote-buying suffers from the obvious limitation that if the ballot is secret it is difficult for the politician to enforce transactions. It may nevertheless become effective either if the secrecy of the election is doubted, or if the voter attaches moral value to keeping her word. If we take vote-buying as encompassing clientelism, the enforcement problem may be solved since ‘payments’ (e.g., public-sector jobs) are conditional on being elected. These strategies are likely to advantage the incumbent, who normally has more money, is in a position to subvert the secrecy of the ballot (e.g., through controlling the electoral commission), and most importantly, is likely to be more credible in proposing to ‘clients’ by using resources controlled from office-holding (something that is not available to the challenger), namely before the elections. Vote-buying by the incumbent may be understood as occurring in the context of a particularly effective long-term path of exchange of favors for political support. Vote-miscounting is also expected to advantage the incumbent since the incumbent is more likely to control the vote-counting process.

In Figure 3, we depict the sequence of this extended game. The incumbent moves first by selecting his vote-buying strategy. More specifically, we focus on the idea of clientelism, enforceable and clearly identified as an incumbent strategy, which is decided upon well before the elections. Then intimidation may be used by both candidates. Voters decide whether and for whom to vote. Finally, the incumbent may decide to use fraud to win elections (overriding the popular vote).

Figure 3: The sequence of the extended game



We hypothesize that neither intimidation (as before) nor vote-buying can affect hardcore base voters' decisions. Soft base voters are 'swing' and therefore can be drawn to the polls for private benefits or losses that are enforceable. Like before, we may think of hardcore supporters as ethnically defined.

The benefits and losses are as follows.

Soft support voter i will vote for the incumbent if

$$B_i > V_i^j,$$

with abstention chosen if

$$B_i < V_i^j,$$

where B_i denotes vote-buying by the incumbent towards voter i .

For soft-support voter indifference,

$$\text{i.e., } B_i = V_i^j,$$

we break the tie in favor of one candidate, as given by the status quo soft support of each voter.

Payoffs are unchanged relative to the benchmark model. However, costs are now defined as

$$K_I \equiv \int_0^1 (B_i + V_i^I) di + F \text{ and } K_C \equiv \int_0^1 V_i^C di,$$

where F is the cost of fraud ($F = 1$ if the incumbent uses fraud or $F = 0$ otherwise). We keep our benchmark assumptions regarding the total resources available to each of the candidates: this implies assuming that the incumbent has sufficient resources for ballot fraud always to be feasible, i.e.,

$$K_I \leq 1.$$

3.2.1. Equilibrium

We now characterize the Subgame Perfect Nash equilibrium of this game.⁹ First, given the assumptions on the size of the budget of the incumbent versus the cost of ballot fraud, we know the

⁹ Note that we still assume voters do not behave strategically, and so the sequence implied in our equilibrium concept is meant to refer to the sequential timing of the different decisions by the candidates.

incumbent will always be able to resort to fraud to win the election.¹⁰ Hence, in equilibrium, given the assumptions on α, β , the incumbent always wins the election and the challenger always maximizes his share of votes as the loser.

Note that we are able to say that vote-buying will always be superior to violent intimidation for the incumbent. For the same money, the incumbent will be able to sway voters to his side through vote-buying instead of just leading them to abstain through violent intimidation. Furthermore, by opting to buy votes he does not lose his soft base voters to abstention. Thus, the decision for the incumbent is between staying still, some degree of vote-buying, and vote-miscounting.

We start by analyzing the cases where $b_I^S + b_I^H \geq b_C^S + b_C^H$, i.e., when the incumbent has larger base support in the status quo, i.e., an advantage at the local level (in addition to the assumed strategic advantage at the national level).

As before, if the challenger prefers to intimidate all opposed soft voters when given the alternative of

accepting the status quo, i.e., $\frac{b_C^H}{b_I^H + b_C^H} > b_C^S + b_C^H$, we may have two different types of outcomes:

when the challenger is capable of securing a majority through intimidation, and when that is not the case.

If the challenger is capable of winning by intimidation (in case the incumbent does nothing), i.e.,

$\frac{b_C^H}{b_I^H + b_C^H} > 0.5 \Leftrightarrow b_C^H > b_I^H$, namely the challenger has a relatively large hardcore base, then the

incumbent will want to secure a victory at minimal cost. (It is implied in the incumbent's status quo advantage that the challenger is guaranteed not to win at the polls whatever happens, i.e., $b_C^H \leq 0.5$.)

He may use vote-buying or vote-miscounting depending on which is cheaper, in order to guarantee a

¹⁰ These assumptions are made for simplicity and meant to represent societies with low institutional quality. A possible extension for our model would allow the cost of ballot fraud to be higher than the incumbent's budget.

victory, and the corresponding first prize in terms of payoff. That will depend on all the parameters of the model, i.e., the values of $b_I^S, b_C^S, b_I^H, b_C^H, M_C$.

Suppose that the incumbent uses vote-buying to secure a victory at the polls. Then, he will use just enough vote-buying to guarantee a bare majority after response by the challenger. If

$$\frac{b_I^H + b_C^S}{b_I^H + b_C^S + b_C^H} \geq 0.5, \text{ i.e., conjecturing that the challenger uses intimidation, the incumbent just}$$

needs to buy enough voters in the soft base of the challenger to guarantee winning at the polls. This

can be done at negligible cost for the incumbent. It is a possibility that the challenger will want to

respond using violence – we now verify the conjecture. The incumbent may anticipate that the

challenger will intimidate, in which case he buys $b_C^H - b_I^H$ soft-support voters siding with the

challenger, or may anticipate that the challenger does not intimidate, in which case he buys

$0.5 - b_I^S - b_I^H$ soft-support voters siding with the challenger. Note that in this parameter set the first

is higher than the second, i.e., $b_C^H - b_I^H > 0.5 - b_I^S - b_I^H \Leftrightarrow b_C^H + b_I^S > 0.5$ (this is provided

$b_C^H > b_I^H$, the fact that $b_C^H > b_I^H$ and $b_I^S + b_I^H \geq b_C^S + b_C^H$ imply $b_I^S > b_C^S$, and the constraint

$b_I^S + b_C^S + b_I^H + b_C^H = 1$). In the first case (broader vote-buying expecting intimidation), the

challenger will earn vote share 0.5 by intimidating, or vote share

$$\frac{b_C^H + (b_C^S - (b_C^H - b_I^H))}{b_I^H + b_I^S + (b_C^H - b_I^H) + b_C^H + (b_C^S - (b_C^H - b_I^H))} = b_C^S + b_I^H \text{ by deviating. The challenger will}$$

comply if $b_C^H > 0.5 - b_I^S$. In the second case (narrower vote-buying not expecting intimidation), the

challenger will earn vote share 0.5 by not intimidating and vote share

$$\frac{b_C^H}{b_I^H + (0.5 - b_I^S - b_I^H) + b_C^H} = \frac{b_C^H}{0.5 + b_C^H - b_I^S} \text{ by intimidating. The challenger will comply if}$$

$b_C^H \leq 0.5 - b_I^S$. The most preferred outcome for the incumbent (narrower vote-buying and no

intimidation) is not possible because $b_C^H \leq 0.5 - b_I^S$ does not happen in this parameter set. At the

same time, if the challenger goes for intimidation after narrower vote-buying, the incumbent does not win at the polls, which is not equilibrium play. The incumbent then prefers to prepare for intimidation by buying $b_C^H - b_I^H$ soft-support voters siding with the challenger with negligible resources. Trivial intimidation by the challenger then happens in equilibrium.

However, it may also happen that buying the soft base of the challenger does not suffice for the incumbent to reach a majority in this parameter set in case of intimidation by the challenger (i.e.,

$\frac{b_I^H + b_C^S}{b_I^H + b_C^S + b_C^H} < 0.5$). The incumbent will buy (marginally) the votes of soft base supporters of the

challenger and equally protect through vote-buying all his soft supporters.¹¹ He will spend an amount that guarantees a bare 50% majority after the challenger spends his full budget M_C on violent intimidation in order to turn some of the b_I^S voters towards abstention. This is a race to the bottom for those votes. We have then that the incumbent will spend just over

$\int_0^{b_I^S} \overline{B}_i di = M_C + \int_0^{0.5 - b_I^H - b_C^S} \overline{B}_i di$, with \overline{B}_i defined implicitly by the parameters of the model. Note

that this amount may be larger than 1, in which case fraud becomes the preferred strategy for the incumbent, since it is less costly. If the incumbent achieves an electoral victory through fraud rather than bribery, the challenger also ends up better off, since he now can switch the entire soft support of the incumbent to abstention at negligible cost and so achieve a larger vote share at the polls. If

$\int_0^{b_I^S} \overline{B}_i di \leq 1$, the incumbent will indeed buy the voters and the challenger will respond through

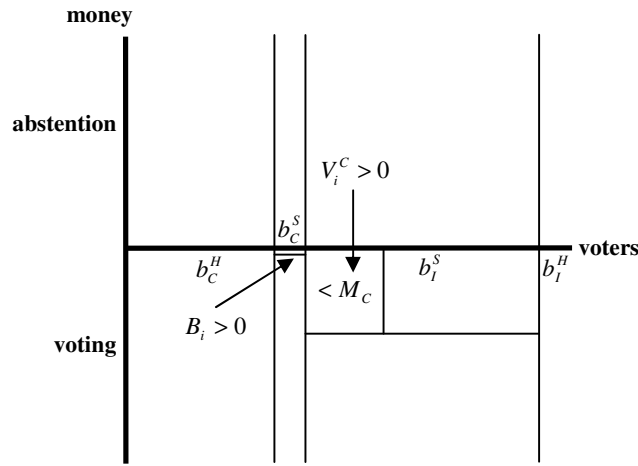
intimidation, as described. Note that the challenger responds through intimidation in this equilibrium outcome with non-trivial vote-buying because his benefit from a unit of vote share is higher than its cost, given that his whole soft base is lost to the incumbent. The latter is depicted in Figure 4 below.

¹¹ Note that if the incumbent buys different voters with different amounts, the challenger will begin spending money with the ‘easier’ (less protected) voters, meaning he will advance more rapidly in terms of recovering voters to abstention (i.e., in terms of vote share).

Note that we now indicate money spent influencing voters to vote for a candidate downwards along the y-axis.

If the challenger is not capable of winning by intimidation, i.e., $b_C^H \leq b_I^H$, then it is a dominant strategy for the incumbent to stay still. The challenger maximizes his share of votes (the second prize) by intimidating all soft supporters of the incumbent at a minimal level. We reach a terrorism outcome, as described in section 3.1.

Figure 4: Vote-buying with intimidation



Finally, the challenger may not prefer intimidating all opposed soft voters to facing the status quo.

This happens when $\frac{b_C^H}{b_I^H + b_C^H} \leq b_C^S + b_C^H$. Provided the discrete cost of intimidation with own soft

supporters, the challenger then opts for not using violent intimidation at all (as a dominant strategy).

As a consequence, the status quo prevails, meaning conventional politics emerge.

We summarize what we have learnt so far in the following result.

Proposition 2a: In a game where both incumbent and challenger can resort to intimidation but only the incumbent can use vote-buying and fraud (national incumbency bias), if the incumbent has larger support in the status quo ($b_I^S + b_I^H \geq b_C^S + b_C^H$), the incumbent always wins political office. This happens in the following ways:

(i) If the challenger prefers intimidating all opposed soft voters to facing the status quo

$$\left(\frac{b_C^H}{b_I^H + b_C^H} > b_C^S + b_C^H\right):$$

a. If the challenger is capable of winning by intimidation ($b_C^H > b_I^H$):

i. If $\frac{b_I^H + b_C^S}{b_I^H + b_C^S + b_C^H} \geq 0.5$, the incumbent just needs to buy enough voters

in the soft base of the challenger to guarantee winning at the polls.

There will be (negligible) vote-buying and intimidation.

ii. If it does not suffice to buy soft supporters of the challenger:

1. If vote-buying is cheaper than fraud ($\int_0^{b_I^S} \overline{B}_i di \leq 1$), there is

(non-trivial) vote-buying (by the incumbent) and (non-trivial) intimidation (by the challenger).

2. If fraud is cheaper than vote-buying, there is fraud by the incumbent and (negligible) intimidation by the challenger.

b. If the challenger is not capable of winning by intimidation, he intimidates all soft voters supporting the incumbent in order to maximize his share of the vote.

We name this outcome as terrorism.

(ii) If the challenger does not prefer to intimidate all opposed soft voters, the status quo prevails without intimidation. We name this outcome as conventional politics.

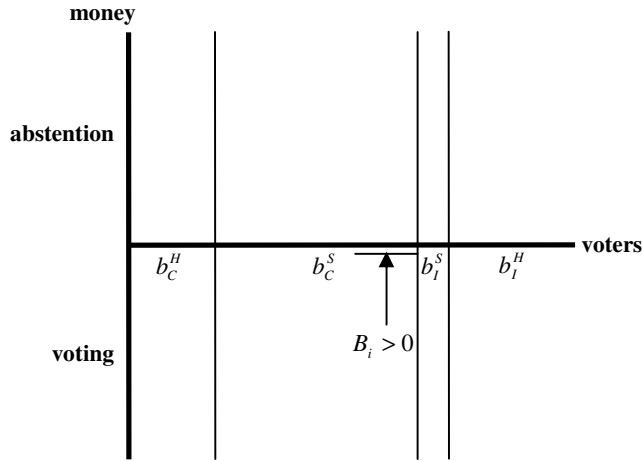
Our model with an incumbency bias thus predicts that in situations where the incumbent is locally strong, equilibrium behavior will be similar to the symmetric model with no vote-buying or ballot fraud. The exception is when the challenger is capable of winning through intimidation (namely, when he has a relatively large hardcore base): before there was no equilibrium; now an equilibrium outcome arises with vote-buying or fraud by the incumbent (intimidation is dominated by vote-buying for the incumbent), possibly responded to with intimidation by the challenger. Note that the

two main equilibrium outcomes in this parameter set remain: intimidation by the challenger when this candidate is weak in terms of both soft and hardcore support; and conventional politics (i.e., no illicit strategies) when there is much to lose from intimidating, namely the challenger's soft base is relatively large.

We now turn to cases where the challenger's base is sufficiently large to pose a threat to the incumbent's objective of winning the election ($b_I^S + b_I^H < b_C^S + b_C^H$), i.e., the challenger is now locally strong in the status quo. In this parameter set, we see that the national incumbency advantage substantially alters the equilibrium outcomes relative to the benchmark model. The incumbent will always be able to win, even if he has to turn to ballot fraud. We now turn to the details of equilibrium in this parameter set.

First, suppose that, by opting to intimidate, the challenger at best loses narrowly at the polls. This situation will happen when $\frac{b_C^H}{b_I^H + b_C^H} \leq 0.5 \Leftrightarrow b_C^H \leq b_I^H$ (note that under this condition we ensure that $b_C^H \leq 0.5$, i.e., the challenger is not guaranteed to win at the polls whatever happens). It is a dominant strategy for the challenger to stay still. In this occasion, the incumbent just needs to buy enough voters at negligible cost to achieve a marginal 50% win at the polls. In Figure 5 below, we depict this vote-buying equilibrium outcome.

Figure 5: Vote-buying



We now assume that $\frac{b_C^H}{b_I^H + b_C^H} > 0.5 \Leftrightarrow b_C^H > b_I^H$, i.e., if the challenger chooses to intimidate, he may achieve a victory at the polls. Still, we are assuming that the challenger is not guaranteed to win at the polls whatever happens, i.e., $b_C^H \leq 0.5$. There are five possibilities, depending on the full set of parameters of the model: two involving vote-buying at negligible cost (with or without intimidation), one involving non-trivial vote-buying (with intimidation), and the remaining two involving ballot fraud (with or without intimidation).

Suppose that the incumbent uses vote-buying. Then, he will use just enough vote-buying to win at the polls (we will note when the associated cost is larger than the cost required by ballot fraud). If

$$b_I^H + b_C^S \geq 0.5 \quad (\Rightarrow \frac{b_I^H + b_C^S}{b_I^H + b_C^S + b_C^H} \geq 0.5),$$

the incumbent just needs to buy enough voters in the soft base of the challenger to guarantee winning at the polls. This can be done at negligible cost for the incumbent. The incumbent may anticipate that the challenger will intimidate, in which case he buys $b_C^H - b_I^H$ soft-support voters siding with the challenger, or may anticipate that the challenger does not intimidate, in which case he buys $0.5 - b_I^S - b_I^H$ soft-support voters siding with the challenger. Differently from the similar case when the incumbent had the status quo advantage, either possibility may be best for the incumbent, i.e.,

$b_C^H - b_I^H \succ \prec 0.5 - b_I^S - b_I^H \Leftrightarrow b_C^H + b_I^S \succ \prec 0.5$. Anyway, the challenger will reply with intimidation if $b_C^H > 0.5 - b_I^S$, and with peace if $b_C^H \leq 0.5 - b_I^S$. Suppose that the incumbent prefers that the challenger stays still (like before), i.e., $b_C^H > 0.5 - b_I^S$, and prepares for that by buying $0.5 - b_I^S - b_I^H$ voters. Then, the challenger does not comply. That is not equilibrium behavior, as just like before that would yield a loss to the incumbent. In equilibrium the incumbent buys $b_C^H - b_I^H$ soft-support voters siding with the challenger, and the challenger intimidates. Now

suppose the reverse happens, $b_c^H \leq 0.5 - b_i^S$, i.e., the incumbent prefers the challenger to intimidate.

Then the challenger does not comply, meaning a loss at the polls for the incumbent (also not equilibrium). Equilibrium will then be to prepare for peace: the incumbent will buy $0.5 - b_i^S - b_i^H$ soft-support voters siding with the challenger, and the challenger will not intimidate. Note that if

$b_i^H + b_c^S < 0.5$ but $\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} \geq 0.5$, when the incumbent prefers peace ($b_c^H > 0.5 - b_i^S$), we

would see the same equilibrium pattern emerging as above, with negligible vote-buying and intimidation.

It may also happen that we face non-negligible vote-buying as an equilibrium outcome, similarly to

the case depicted in Figure 4. If $\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} < 0.5$, or $b_i^H + b_c^S < 0.5$ and

$\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} \geq 0.5$ and $b_c^H > 0.5 - b_i^S$,¹² then the incumbent has to guarantee that at least some

voters on his own soft base will vote for him, in addition to buying all soft base supporters of the challenger. But if that is the case, the best response for the challenger is to intimidate, provided that he is already losing his whole soft base, and provided that the marginal benefit in terms of vote share is larger than the corresponding marginal cost. We will then have a race to the bottom for the b_i^S

voters. The incumbent will employ $\int_0^{b_i^S} \overline{B}_i di = M_c + \int_0^{0.5 - b_i^H - b_c^S} \overline{B}_i di$ (with \overline{B}_i defined implicitly by

the parameters in the model) as vote-buying. But this will only happen if $\int_0^{b_i^S} \overline{B}_i di \leq 1$. Otherwise, he

will prefer to go for ballot fraud. Note that, while in the former case the challenger will invest all his resources in violent intimidation, in the latter, if any, he will use negligible resources. That depends

¹² Note that in this case, an equilibrium outcome without intimidation (like in the parameter set of the previous paragraph) could not be sustained, as the incumbent could not restrict himself to buying all soft support voters siding with the challenger in order to guarantee an electoral victory.

on parameters: if $\frac{b_C^H}{b_I^H + b_C^H} > b_C^H + b_C^S$, he will prefer to intimidate marginally all soft supporters of

the incumbent; otherwise, he will opt for peace. We then may have one of three outcomes: non-negligible vote-buying and intimidation, fraud with intimidation, or fraud without intimidation.

Finally, if the challenger is guaranteed to win at the polls whatever happens, i.e., $b_C^H > 0.5$, the incumbent will necessarily (as a dominant strategy) turn to vote-miscounting. The best response

from the challenger side will again depend on parameters: if $\frac{b_C^H}{b_I^H + b_C^H} > b_C^H + b_C^S$, he will choose to

intimidate (we have fraud with intimidation); otherwise, he will prefer to stay still (fraud without intimidation).

We have proved the following statement:

Proposition 2b: In a game where both incumbent and challenger can resort to intimidation but only the incumbent can use vote-buying and fraud (national incumbency bias), if the challenger has larger support in the status quo ($b_I^S + b_I^H < b_C^S + b_C^H$), the incumbent always wins political office. This happens in the following ways:

(i) If the challenger is not guaranteed to win at the polls whatever happens ($b_C^H \leq 0.5$):

- a. If by opting to intimidate the challenger gets at most a bare loss at the polls ($b_C^H \leq b_I^H$), he does not do it, and the incumbent uses just enough vote-buying to guarantee a bare majority (at negligible cost).**
- b. If by opting to intimidate the challenger may achieve a victory at the polls:**
 - i. If $b_I^H + b_C^S \geq 0.5$, the incumbent just needs to buy enough voters in the soft base of the challenger to guarantee winning at the polls. There will be (negligible) vote-buying.**

1. If $b_c^H > 0.5 - b_i^S$, the incumbent prefers the challenger to stay still but the challenger will intimidate.

2. If the incumbent prefers the challenger to intimidate, there will be peace.

ii. If $b_i^H + b_c^S < 0.5$ but $\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} \geq 0.5$, and the incumbent prefers

the challenger to stay still ($b_c^H > 0.5 - b_i^S$), the incumbent is still able to restrict himself to opposed soft-voters: equilibrium features (negligible) vote-buying (by the incumbent) and intimidation (by the challenger).

iii. If it does not suffice to buy soft supporters of the challenger (either

$(\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} < 0.5)$ or $(b_i^H + b_c^S < 0.5$ and $\frac{b_i^H + b_c^S}{b_i^H + b_c^S + b_c^H} \geq 0.5$

and $b_c^H \leq 0.5 - b_i^S$):

1. If vote-buying is cheaper than fraud ($\int_0^{b_i^S} B_i di \leq 1$), there is (non-trivial) vote-buying by the incumbent and (non-trivial) intimidation by the challenger.

2. If fraud is cheaper than vote-buying, there is fraud by the incumbent and:

a. If $\frac{b_c^H}{b_i^H + b_c^H} > b_c^H + b_c^S$, the challenger will prefer to intimidate (at a negligible cost).

b. Otherwise, the challenger will opt for peace.

(ii) If the challenger is guaranteed to win at the polls whatever happens, the incumbent will undertake fraud. In addition:

- a. If $\frac{b_C^H}{b_I^H + b_C^H} > b_C^H + b_C^S$, the challenger will prefer to intimidate (at a negligible cost).
- b. Otherwise, the challenger will opt for peace.

The important addition of the model with an incumbency advantage is the characterization of when the challenger has a local advantage in terms of initial status quo support. Then the incumbent will use his national advantage. Vote-buying will be used when fraud is more expensive in guaranteeing the electoral victory. If the challenger has strong hardcore support, and can win at the polls whatever happens, fraud will be the only option for the incumbent. It may be a best response by the challenger to use violent intimidation, in order to maximize his vote share. If the challenger has less strong hardcore support, there will be: negligible vote-buying possibly responded by intimidation, if the challenger's soft support is large enough for the incumbent to guarantee a majority through vote-buying; non-trivial vote-buying responded by intimidation, if the incumbent cannot rely uniquely on the challenger's soft base to guarantee a majority; or fraud (with or without intimidation), if in addition the challenger is well-endowed in terms of campaign funds.

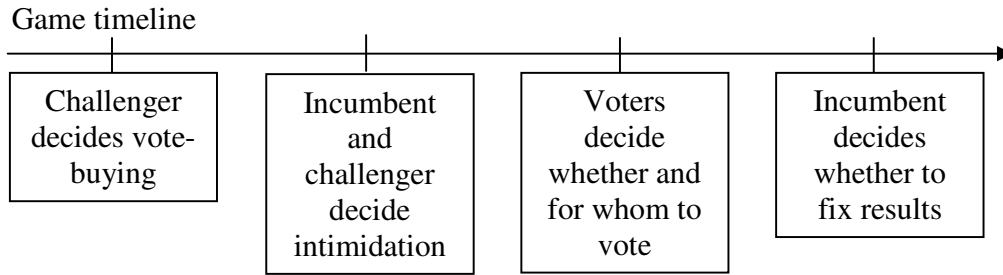
3.3. A powerful local challenger who can bribe

We present a variation of our model in which we deepen the possibility that the challenger may have a local advantage. Namely, we assume that the challenger may be powerful because of access to local public office, which normally translates into opportunities to buy votes. As before, our model aims to capture the local conditions of national electoral contests. We interpret this modeling variation as approximating the conditions in politically-decentralized countries (e.g., federal countries). Note that we were already encompassing the possibility of powerful challengers at the local level through large relative voter bases. We now assume that only the challenger may buy votes (provided he is in power locally), even though we keep the hypothesis that only the incumbent may undertake ballot fraud. This is provided the centralized nature of the electoral commissions

suggested before, which can be influential in determining the electoral outcomes of national contests at the local level.

We depict the sequence of this modified game in Figure 6. The difference to the game in the last section is that it is the challenger who moves first by setting a vote-buying strategy.

Figure 6: The sequence of the modified game



Our hypotheses regarding soft support voters change slightly as a result. Soft support voter i will vote for the challenger if

$$L_i > V_i^j,$$

with abstention chosen if

$$L_i < V_i^j,$$

where L_i denotes vote-buying (understood as local clientelism) by the challenger towards voter i .

Soft-support voter indifference is broken as before. Payoffs are unchanged relative to the benchmark model. However, costs are now defined as

$$K_I \equiv \int_0^1 V_i^I di + F \text{ and } K_C \equiv \int_0^1 (L_i + V_i^C) di .$$

We maintain our benchmark assumptions regarding the costs of fraud and total resources available to each of the candidates.

3.3.1. Equilibrium

We now characterize the Subgame Perfect Nash equilibrium of this game. The first result is that for the same reason intimidation was never used by the incumbent in equilibrium when vote-buying was available to him (intimidation was dominated by vote-buying), intimidation is never used by the challenger in the equilibrium of this model. Note also that, given our assumptions on α, β , and the availability of ballot fraud to the incumbent, this candidate always wins the elections. Hence, the challenger always maximizes his share of the vote. In this view, it is a dominant strategy for the challenger to use negligible resources to buy the incumbent's soft supporters, as in that way the challenger guarantees a discrete jump in his vote share.

We begin by analyzing equilibrium behavior when the incumbent has an advantage in the status quo ($b_i^S + b_i^H \geq b_C^S + b_C^H$). If the hardcore base of the incumbent allows for a majority at the polls, i.e., $b_i^H \geq 0.5$, it is a dominant strategy for the incumbent to stay still. The challenger will marginally buy all the soft supporters of the incumbent. A pure vote-buying outcome arises, where negligible resources are spent.

We now turn to cases where it may be either the incumbent or the challenger with the status quo advantage. Either way our parameter set is one where the incumbent is not strong enough to guarantee a majority whatever happens ($b_i^H < 0.5$). If $b_C^H + b_i^S > 0.5$, there is no doubt the incumbent will have to opt for ballot fraud, as the challenger may guarantee a majority (even if the incumbent intimidates) by spending negligible resources buying the soft base supporters of the incumbent. This outcome corresponds to fraud accompanied by (negligible) vote-buying.

If $b_C^H + b_i^S \leq 0.5$, the challenger cannot get a majority solely by buying the soft supporters of the incumbent. Suppose in addition that intimidating the whole soft base of the challenger does

guarantee a majority for the incumbent, i.e., $\frac{b_i^H}{b_i^H + b_C^H + b_i^S} \geq 0.5$. Then the incumbent may

consider intimidation as a cheaper option than ballot fraud in guaranteeing an electoral victory. He

may consider a race to the bottom. Assume for the moment that this case holds. The challenger will use his full budget to (i) buy the incumbent's soft supporters for a negligible amount, and (ii) equally buy all voters in his soft base for a non-trivial amount. The incumbent will respond by using his resources to intimidate enough soft supporters of the challenger in order to guarantee a majority,

$$0.5 = \frac{b_I^H}{b_I^H + ((b_C^H + b_I^S) + b_C^S - (1 - 2b_I^H))}. \text{ He will employ just below } \int_0^{1-2b_I^H} \bar{L}_i di \text{ with } \bar{L}_i \text{ defined}$$

implicitly by $\int_0^{b_C^S} \bar{L}_i di = M_C$. If $\int_0^{1-2b_I^H} \bar{L}_i di \geq 1$, the incumbent will prefer ballot fraud to racing to

the bottom using intimidation. But that means the challenger just needs to spend enough from his budget ($\leq M_C$) to make the last inequality bind. The incumbent would then respond with fraud,

meaning the challenger would maximize his vote share by reaching $b_C^H + b_C^S + b_I^S$. This is an

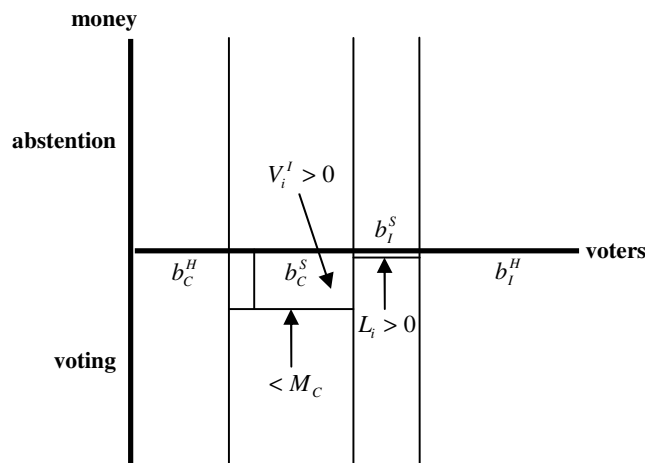
outcome with fraud and non-trivial vote-buying. However, if $\int_0^{1-2b_I^H} \bar{L}_i di < 1$, the race to the bottom

would happen, as the incumbent would prefer intimidation to fraud, and the challenger would prefer to spend his full budget (given the positive marginal benefit of one unit of vote share) This is an

outcome that blends non-trivial vote-buying with violent intimidation. We depict the latter case in

Figure 7.

Figure 7: Vote-buying with intimidation



Finally, if intimidating the whole soft base of the challenger does not guarantee a majority for the

incumbent, i.e., $\frac{b_I^H}{b_I^H + b_C^H + b_I^S} < 0.5$, ballot fraud is the only possibility. This is an outcome with

fraud and (negligible) vote-buying.

We have then proved the following result:

Proposition 3: In a game where both incumbent and challenger can resort to intimidation but only the challenger can use vote-buying (local bias), and only the incumbent can use fraud (national incumbency bias), the incumbent always wins (national) political office. This happens in the following ways:

(i) **If the incumbent has larger support in the status quo ($b_I^S + b_I^H \geq b_C^S + b_C^H$):**

a. **If the incumbent has large hardcore support enabling a majority whatever happens ($b_I^H \geq 0.5$), then the incumbent stays still and the challenger buys all soft support voters of the incumbent (for a negligible amount).**

(ii) **If either the incumbent or the challenger have larger support in the status quo:**

a. **If the incumbent does not have large hardcore support ($b_I^H < 0.5$):**

i. **If the challenger can secure a majority by buying the soft supporters of the incumbent ($b_C^H + b_I^S > 0.5$), then the incumbent will opt for fraud, and the challenger will buy all soft supporters of the incumbent (for a negligible amount).**

ii. **If the challenger cannot secure a majority by buying the soft supporters of the incumbent:**

1. **If the incumbent can secure a majority by intimidating all soft**

supporters of the challenger ($\frac{b_I^H}{b_I^H + b_C^H + b_I^S} \geq 0.5$):

- a. **If intimidation is cheaper than fraud ($\int_0^{1-2b_l^H} \overline{L}_i di < 1$), there is (non-trivial) intimidation (by the incumbent) and (non-trivial) vote-buying (by the challenger).**
 - b. **If fraud is cheaper than vote-buying, there is fraud by the incumbent and (non-trivial) vote-buying by the challenger.**
- 2. If the incumbent cannot secure a majority by intimidating all soft supporters of the challenger, fraud will arise together with (negligible) vote-buying (by the challenger).**

The model with a local advantage for the challenger in terms of vote-buying, gives a plain equilibrium story. Except when the incumbent has a clear advantage in the status quo vote shares, namely in terms of hardcore supporters, this candidate will have to use either fraud (his assumed national advantage) or intimidation to win the election. The challenger will always use vote-buying in order to maximize the share of votes. The only situation where intimidation is used by the incumbent is when the challenger cannot achieve a majority by swaying the soft base of the incumbent, and the use of intimidation by the incumbent secures a majority for this candidate while being cheaper than ballot fraud (given the challenger's resources).

4. Discussion: some recent examples of electoral conduct

The above analysis predicts that incumbents would use different illicit strategies according to the shortfall in their licit support and according to differences in the scope for each illicit strategy. The analysis suggests propositions that are in principle testable. For example, in societies with strong ethnic allegiances, where the proportion of a candidate's soft support is low, there is a greater incentive, *ceteris paribus*, to undertake violent intimidation, as there is a lower reputation cost. The

scope for voter bribery depends upon the relative availability of resources and so should tend to be more prominent in countries with large revenues from natural resources (primarily available to incumbents). Similarly, the scope for ballot fraud depends upon whether local officials accept the authority of politicians to overrule due process. Naturally, incumbents are in a better position to influence the results. However, since much political authority is personalized, the scope for fraud may be reduced if the candidate of the ruling party is not the previous holder of political power. While such propositions seem to be testable, in practice our theoretical analysis uses details of electoral conduct which to date have not been readily observable in a form suitable for econometric analysis. To the best of our knowledge, the only dataset that provides comparable proxies for electoral intimidation, vote-buying, and vote-miscounting is the Afrobarometer. However, even in this dataset the set of countries covered is small and biased in favor of less problematic African polities, there is no specific measure of vote-miscounting, and the time dimension cannot be explored (vote-buying measures are not repeated over time). We therefore illustrate the applicability of the model with discussions of particular elections in Sub-Saharan Africa.

Before we delve into specific election-country cases, Figure 8 presents the respondents' ratings of electoral conduct in terms of freeness and fairness in the full range of Afrobarometer country-years. We can observe that there is clear set of African countries where elections have been relatively free-and-fair during the 1999-2008 decade, and where the ratings have improved over the same period.¹³ Ghana is one such country, consistent with its regional reputation for good governance despite its relatively low income level (as compared to Botswana, Cape Verde or South Africa). A second group of countries has a persistently low rating, as exemplified by Zimbabwe. In a third group of countries electoral conduct has clearly deteriorated over time: this is exemplified by Kenya and Nigeria. We now deepen the analysis by taking examples of each of these three groups.

¹³ Benin, Botswana, Burkina Faso, Cape Verde, Ghana, Madagascar, Mali, Mozambique, Namibia, South Africa, and Tanzania, seem to compose this relatively large group of countries. Note, however, that the Afrobarometer coverage is naturally biased in favor of less problematic countries, with better survey conditions.

4.1 Repression: Zimbabwe 2008

The Zimbabwean presidential elections of March and June 2008 provide a clear illustration of our benchmark setting: an incumbent without the means to conduct vote-buying or fraud. Vote-buying was limited by the collapse of the economy, with hyperinflation (11,200,000% in July 2008¹⁴) and overwhelming supply shortages. The size of the incumbent's (Robert Mugabe's) patronage network had consequently shrunk. Ballot fraud was constrained by the heavy presence of international observers, which had been a condition for participation by the challenger. Further, the legacy of ethnic identity voting in favor of the ruling party had been fundamentally eroded by the pervasive collapse of the economy from which all ethnic groups had suffered. A reasonable interpretation is that in the first round Mugabe did not appreciate these new constraints and consequently lost the election.¹⁵ He is indeed reported to have described the first round result as 'disastrous' and to have said that his party, Zimbabwe African National Union – Patriotic Front (ZANU-PF), had gone into the election 'completely unprepared, un-organized'.

President Mugabe clearly faced looming electoral defeat in the second round: many argue that the main challenger, Morgan Tsvangirai, had already won the first round by an absolute majority, the recounting being deemed flawed by Southern African Development Community observers.¹⁶ He therefore resorted to a series of violent actions targeted en masse at opposition supporters, increasingly severe as the second round approached. We identify this pattern of behavior as repression, consistent with our equilibrium prediction in the absence of an incumbency bias. See Proposition 1.ii, when the soft support of the incumbent, b_I^S , is relatively low.¹⁷

¹⁴ As reported by the Zimbabwean Central Statistical Office.

¹⁵ Although the incumbent delayed the announcement of the results for over a month, the most that could be extracted from 'recounting' was to deny the main challenger an outright first-round victory.

¹⁶ The official results gave Tsvangirai 47.9% of the votes and Mugabe 43.2%.

¹⁷ Mugabe also accused the Movement for Democratic Change (MDC) of terrorizing ZANU-PF supporters in rural areas (despite obvious credibility limitations on this statement, Human Rights Watch seems to confirm indirectly these allegations by appealing to peaceful campaigning by MDC supporters). Both outcomes, repression by ZANU-PF and terrorism by MDC, are consistent with the equilibrium in our benchmark model –

In May, Amnesty International reported that ‘local youths’ were being recruited for attacks against opposition supporters and that the police seemed ‘unwilling to stop the violence’. Shortly after, an electoral observation contingent (from the Zimbabwe Election Support Network) was reported to have been attacked by ZANU-PF supporters. By the time of the election, Human Rights Watch released a report entitled ‘Bullets for Each of You’: State-Sponsored Violence since Zimbabwe’s March 29 Elections’, where a systematic violent strategy by the incumbent was denounced, which reportedly involved ‘thousands of victims as the government at national and local levels actively, systematically and methodically targeted Movement for Democratic Change (MDC) activists and perceived MDC supporters’. Namely, the violence was observed to be particularly concentrated in former rural strongholds of the ZANU-PF that to the party’s surprise had voted for the MDC in the parliamentary and first-round presidential elections.¹⁸

In Figure 9, using Afrobarometer data, we confirm the importance of intimidation by the government as we observe a very high perceived ‘need to be careful about what is said about politics’ in Zimbabwe. This perception exceeds the perception that ‘competition between political parties leads to conflict’, hinting about the importance of intimidation by the state. Note that while the evidence for severe intimidation is incontrovertible, relative to the other countries on the figure vote-buying and fraud in Zimbabwe are not regarded as a significant problem. This was a clear case of an incumbent bending the electoral outcome by using one particular illicit strategy in preference to others.

While the violence succeeded both in forcing the MDC to withdraw from the second round and in securing an incumbent-biased power-sharing deal, Mugabe paid a high price internationally due to the visibility of repression. We now turn to terrain more fertile for incumbents.

the crucial distinction being which party has marginal support (namely by soft voters). Also in line with this theoretical framework, Indian case studies with both terrorism and repression are documented by Wilkinson (2004).

¹⁸ Interestingly, a large shipment of arms sent from China to Zimbabwe (the ‘An Yue Jiang’ ship case) provoked controversy, as it was feared that the arms would be used by the government against the opposition. The shipment did not reach its destination for lack of a port allowing the cargo to be unloaded.

4.2 Terrorism with a strong incumbent: Nigeria 2007

The federal and state-level round of elections of April 2007 in Nigeria is an example of an election controlled nationally by the incumbent party (PDP). With the election held in the midst of an oil boom, the party had no difficulty overall in attracting electoral support. Our model predicts that in this situation the opposition might well resort to pre-election violence to reduce the turnout of government supporters. Violence was indeed widespread. In a Human Rights Watch report,¹⁹ released after the elections, a number of case studies contend that ‘political figures openly recruit and arm criminal gangs to unleash terror upon their opponents and ordinary members of the public’. Collier and Vicente (2009) report on the results of a field experiment that encompassed a randomized campaign against electoral violence sponsored by an international NGO: they find that violence originated from non-incumbent groups, normally marginal to mainstream politics. Thus, as predicted by our model for a setting with an overwhelming incumbency advantage, political violence was analogous to terrorism.²⁰ See Proposition 2a.i.b, where the incumbent has competitive $(b_i^S + b_i^H \geq b_c^S + b_c^H)$ and strategic advantages, and the challenger has small soft (b_c^S) and hardcore (b_c^H) support.

Despite the fact that PDP presented a new presidential candidate due to the term limit faced by President Obasanjo, and the informal PDP settlement that the presidency should rotate between northern and southern figures,²¹ its candidate, Umaru Yar’Adua, was clearly seen as a protégé of the departing president. As a result, the incumbency advantage may well have been maintained. Also due to the coincident election of state governors, which embedded some difficult local contests, the

¹⁹ Human Rights Watch, ‘Criminal Politics: Violence, ‘Godfathers’ and Corruption in Nigeria’, August 2007.

²⁰ For instance, in Rivers state, youth groups/gangs are the ones identified by Human Rights Watch as the main direct perpetrators of electoral intimidation in the run up to the 2007 elections. That organization maintains that most of these groups were, at least initially (before 2003), sponsored by known political figures interested in increasing their share of political power (by ‘demonstrating an ability to use political violence’).

²¹ While in Nigeria ethnic identity looms much larger in the political process than in Zimbabwe, it is played out predominantly in the meta-struggles over the choice of presidential candidates and federal resources. Indeed it is in this context that the population census has become a crucial factor in ethnic competition.

incumbent party resorted heavily to both vote-buying and fraud at the local level. EU electoral observers stated that the polls ‘have fallen far short of basic international and regional standards for democratic elections and cannot be considered to have been credible’ as ‘EU observers witnessed examples of ballot box stuffing, alteration of official result forms, stealing of sensitive polling materials, vote-buying and underage voting’.²² A survey conducted just after the 2007 elections (as reported in Collier and Vicente 2009), shows that, consistent with the strategic use of illicit strategies, resort to vote-buying and fraud by the PDP was most pronounced where opposition support was strongest. This is in line with our model with an incumbency national advantage, when the challenger has a status quo local competitive advantage ($b_I^S + b_I^H < b_C^S + b_C^H$) - refer to Proposition 2b and its specific outcomes. The model with a strong local challenger in terms of vote-buying (embedding more extreme confrontations between a nationally strong incumbent and a locally strong challenger) reinforces the prevalence of the fraud outcomes we report for the case of this Nigerian election. Refer to Proposition 3.ii, when the challenger has a competitive advantage ($b_I^S + b_I^H < b_C^S + b_C^H$).

We can then conclude that while at the national level the 2007 election was characterized by a dominant player and by terrorism, at the more local level (e.g., gubernatorial elections) equilibrium outcomes may have differed. While in many local contests the same conditions prevailed as in the national contest, producing a dominant player and terrorism, in others where politics was more competitive, the outcome was characterized by vote-buying and vote-miscounting. Consistent with the observed pattern, we find in Figure 9 that all three illicit strategies are rated at very similar levels. In contrast to the state-originated violence in Zimbabwe, where ‘fear of publicly expressing political opinions’ took the lead, ‘conflict arising from political competition’ is the more common description of political violence in Nigeria. This is, of course, consistent with the switch in the origin of violence from the state to fringe-group terrorism.

²² Cited by BBC News, 23rd April 2007.

4.3 Vote-buying: Angola 2008

In the Angolan election of September 2008 the incumbent party People's Movement for the Liberation of Angola (MPLA) had every advantage: the peak of an oil boom and two-digit real growth rates after 2003.²³ Both may have been conducive to appeasing the population in a more or less licit way. Indeed, in our interpretation, this election matches the intermediate equilibrium outcomes in the incumbency-advantage model of section 3.2. Namely, the challenger may have relied primarily on soft support (b_C^S) in face of dramatically weakened hardcore support (b_C^H), and the incumbent may have possibly secured a strong position in the local level status quo ($b_I^S + b_I^H \geq b_C^S + b_C^H$). Under these conditions conventional politics (i.e., no illegitimate strategies) arise in our model (see Proposition 2a.ii). If we instead assume that the challenger may have had a competitive advantage in some locations, we may then see a vote-buying outcome emerge (this is best depicted by Proposition 2b.i.a).

Potentially, the desperation of the opposition might have induced terrorist violence. However, two factors may have discouraged it, and propelled dependence on soft support. The government had recently and decisively won a 27-year long civil war, killing the rebel leader Jonas Savimbi. This setting was complemented by a systematic policy of buying-in opposition leaders of the main opposition/rebel movements (which contributed to softening the opposition's hardcore support). Senior figures in the National Union for the Total Independence of Angola (UNITA) and the Front for the Liberation of the Enclave of Cabinda (FLEC - a separatist movement in the oil-rich Cabinda) were given top positions in the public administration. As an example, in 2006, a ceasefire agreement was signed between the government and an umbrella group within FLEC allegedly offering 'an important political status to the region',²⁴ and reserving seats for representation in the central and regional government, the public oil company Sonangol, regional branches of telecommunications,

²³ CIA World Factbook.

²⁴ As referred by Antonio Bembe Bembe, the leader of CFD – Reuters, 10th July 2006.

television, and radio public companies, and several foreign representations.²⁵ This may be a good example of negligible but pivotal vote-buying (as in Figure 5).

In the run up to the elections in 2008, Roque (2009) reports on a systematic strategy of co-opting local influential figures and traditional rural leaders (sobas): ‘The MPLA even created an NGO (Our Soba) to approach the sobas in the provinces and attract them to the party’s patronage network. The ruling party successfully brought in these traditional authorities as well as local administrators and influential citizens, bribing them with money, cars, computers, motorbikes, bicycles, and promises of future benefits. On Election Day, sobas and unofficial elements of the MPLA stood near some polling stations, observing how people cast their votes.’

The outcome of the elections was a landslide victory for the ruling MPLA, with 82% against 10% for UNITA. The election was considered by the EU electoral observation mission (the main contingent deployed to oversee these elections) as ‘marking a crucial step towards democracy despite organizational weaknesses’ – the final report mentioned that ‘Angolans turned out in large numbers and voted freely’.

Even with the highly favorable conditions overall, the ruling party was concerned about FLEC in Cabinda. The observer mission gathered evidence of people being transported over the border to the enclave from neighboring Congo-Brazzaville to vote. An observer described²⁶ how ‘after a fairly tortuous journey [to Cabinda], we came across the most phenomenal scene, where tents, marquees, beds, lavish food was there, and up to 1,500 people, five of whom we interviewed, and gave us evidence that this was all funded by the government’, that ‘there had been massive hand-outs of money, televisions, radios, alcohol, and even cars’, and that he saw ‘soldiers [...] representatives of the ruling party standing not just in the polling station, but in front of the booths where people were voting’. Note that the final quote may match well with our model of section 3.3, with a competitive advantage for the challenger ($b_I^S + b_I^H < b_C^S + b_C^H$). Intimidation may indeed be used by the

²⁵ Lusa News Agency, 8th August 2006.

²⁶ Reported by BBC News, 8th September 2008.

incumbent when he cannot buy votes, and when the challenger also has limitations in the ability to undertake vote-buying (see Proposition 3.ii.a.ii.1.a).

We may conclude that vote-buying was more attractive than fraud in Angola, perhaps also due to the particularly pronounced access to state resources by MPLA as a result of the massive oil boom.

Apart from the impressive scale of unrestrained finance in Angola, its difference to the Nigerian case may have also resided in tighter political control in a post-war setting (not conducive to the emergence of intimidation by the challenger).

4.4 Fraud: Kenya 2007

We contend that the chosen strategy of the incumbent in the Kenyan elections of 2007 was fraud, although whether it was decisive in the declared result cannot be determined. President Mwai Kibaki was running for re-election under the Party of National Unity (PNU), with Raila Odinga being his main contender, from the Orange Democratic Movement (ODM). Polls showed that the election would be close. The payoff to vote-buying was likely to be very limited since as a result of ethnic identity-voting²⁷ there were relatively few swing voters (i.e., soft support voters). In any event the incumbent was not in a particularly strong financial position to embark upon mass vote-buying: unlike Nigeria and Angola, Kenya does not have access to natural resource revenues and the scale of misappropriation of public funds had been sharply reduced by domestic and international scrutiny. We then contend that, through the lens of our model of section 3.2, under a status quo advantage for the challenger, as described in Proposition 2b, the equilibrium outcomes characterized by the use of vote-buying by the incumbent were not feasible (our model of section 3.3 may also be an appropriate interpretation, as it rules out vote-buying by the incumbent). Ballot fraud may then have been left as the most feasible illicit strategy, although it was not clear in advance of the poll whether the ruling party would need to resort to it. Note that our model predicts that for relatively large hardcore

²⁷ See Kimenyi and Shughart (2010) and Bratton and Kimenyi (2008) for a full account of the relationship between ethnicity and voting in the 2005 Kenyan constitutional referendum and the 2007 Kenyan general elections (respectively).

support by the incumbent, b_i^H , the challenger does not intimidate when fraud is used by the incumbent (see Proposition 2b.i.b.iii.2.b and 2b.ii.b) – that may explain the fact that pre-election violence was not significant in these elections.

Indeed, the run-up to the elections was broadly considered to be peaceful and to embed a wide discussion of several policy issues like federalism, free social services, and constitutional reform. The EU electoral observation mission underlines in its report that ‘freedom of speech in the media was generally respected’.

However, a series of unfortunate events started just after the Election Day, 27th December. Exit polls gave a comfortable lead to the main challenger Odinga, by as much as 50% against 40% for Kibaki.²⁸ In fact, on the 28th, Odinga achieved a strong lead in official vote counting, so that ODM declared victory the following day.²⁹ It was then that Odinga’s lead started to shrink, so that on the 30th December, ODM accused the government of fraud and called for a recount. The Electoral Commission declared Kibaki the winner later that day, giving him a lead of about 232,000 votes over Odinga.³⁰ Within minutes of the Commission’s declaration, tribe-based rioting broke out across much of Kenya, partly directed by Odinga’s supporters against Kikuyus, with violence particularly concentrated in Rift Valley province (where Kalenjin supporters of Odinga dominated). By the end of February the ethnic violence death toll had claimed 1,000 victims, with up to 600,000 people estimated to have been displaced.³¹

The EU’s electoral observers released a report stating that ‘the Kenyan elections have fallen short of key international and regional standards for democratic elections’ and that ‘they were marred by a

²⁸ Institute for Education in Democracy, Presidential Exit Polls 2007.

²⁹ Note however that this sequence of events may be explained by the fact the constituencies in Odinga’s strongholds completed the vote-tallying sooner as there were relatively fewer candidates compared to those constituencies in Central and Eastern Provinces (Kikuyu strongholds) – as referred in the ‘Report of the Independent Review Commission on the General Elections held in Kenya on 27 December 2007’.

³⁰ Human Rights Watch, on its report ‘Ballots to Bullets: Organized Political Violence and Kenya’s Crisis of Governance’, March 2008, describes this sequence of events in the following way: ‘In the closing hours of the tabulation process a lead of over one million votes for opposition candidate Raila Odinga evaporated under opaque and highly irregular proceedings and was transformed into a razor-thin margin of victory for Mr. Kibaki’.

³¹ According to CNN, 28th February 2008.

lack of transparency in the processing and tallying of presidential results, which raises concerns about the accuracy of the final result'. Specifically they gave the following example: 'The result for the Molo constituency, for example, was announced in the presence of EU observers at the constituency tally center as 50,145 votes for President Kibaki, while the ECK [Electoral Commission] today declared the result for the President to be 75,261 votes'. Hence, and even though the 'Report of the Independent Review Commission on the General Elections held in Kenya on 27 December 2007' is prudent in affirming that 'the integrity of the process and the credibility of the results were so gravely impaired by manifold irregularities and defects'³² that it is irrelevant whether or not there was actual rigging at the national tally centre', a reasonable interpretation is that the incumbent (a powerful one, representing the largest ethnic group in Kenya) found himself in a situation where victory could not be relied upon without at least precautionary resort to fraud and deliberate electoral confusion.

The Afrobarometer data presented in Figure 9 are fully consistent with the above interpretation. Kenya stands out as the country with the highest proxy for electoral fraud (even though we use a general measure of quality of electoral conduct). Interestingly, it also has the highest vote-buying measure among the four countries studied. Although we contend that fraud was the main illicit strategy in the 2007 Kenyan elections, in our model vote-buying and fraud are associated in that they are substitutes when the incumbent is not powerful enough to win the election cleanly. This empirical pattern is therefore not entirely surprising.

4.5 Cleaner elections and how challengers can win

Our model is intended to describe elections in which illicit tactics are important. However, our model also has conventional politics, i.e., no use of illicit strategies, as a possible equilibrium outcome (see Propositions 1 – namely, points 1.i.b and 1.ii - and 2 – namely point 2a.ii), and that is indeed what

³² The referred-to report points out specifically that the 'ECK lacked the necessary independence', that there was 'widespread ballot-stuffing', and that there was 'grossly defective data collation, transmission and tallying'.

happened in several recent elections in Sub-Saharan Africa, as mentioned in the beginning of this empirical discussion. Moreover, in our model opposition victory can emerge only when ruling parties cannot resort to vote-buying or ballot fraud (see Proposition 1.ii, namely its conventional politics outcome). Empirically, in recent African electoral contests, an electoral victory by the opposition is a relatively rare event. Kenya in 2002, Sierra Leone in 2007, and Ghana in 2008 are among these prized cases, in which the conduct of the election had sufficient integrity that the opposition was able to win.

A common feature of all three of these elections was that the incumbent president was not standing for re-election. This may have substantially reduced the scope for the ruling party to resort to illicit tactics. Indeed, clienteles may have been weakened and the control of state institutions like electoral commissions may have been compromised, implying that vote-buying and fraud may have become more difficult to implement by new incumbent-party candidates. Moreover, the weakening of the ruling party, with a corresponding surge in swing voters, may have simultaneously reduced the incentive for the opposition to resort to the spoiling tactic of violence.

The Kenyan elections of 2002 had two unusual features. The first was that the incumbent president, Daniel arap-Moi, of Kalenjin origin, was constitutionally barred from running for re-election.

Indeed, since the president had been careful to avoid any of his entourage becoming a possible rival, there was no obvious successor within his own party. In the event, probably in an attempt to split the opposition vote, which was based around the Kikuyu, he chose inexperienced Uhuru Kenyatta, a Kikuyu, son of former president Jomo Kenyatta, to run for office. As a result, there was a serious mismatch between Moi's anti-Kikuyu political network and Kenyatta's background. The second distinctive feature of these elections was that both candidates were from the same tribe, as Kenyatta's main contender turned out to be Mwai Kibaki (the incumbent in our previous discussion). Kenyatta was roundly defeated by Kibaki, taking only 31% of the vote against 62% for Kibaki.

The Sierra Leonean elections of August and September 2007 also had distinctive features. First, as in Kenya, the incumbent president Ahmad Tejan Kabbah was not a candidate due to a constitutional

term limit. Indeed, following the election, some members of the incumbent-party Sierra Leone People's Party (SLPP) accused former president Kabbah of contributing to its defeat, alleging that he harbored 'jealousy' towards his party-successor.³³ This may have weakened the credibility and authority needed for clientelism and ballot fraud. Second, security in Sierra Leone had been established, and was being maintained, by an invited British military presence.³⁴ This may have indirectly given the international community atypical authority in limiting the scope for all three illicit strategies. Finally, public revenues were modest because of the prior collapse of the state, limiting the financing for vote-buying. There may also have been an element of complacency in the ruling party, which reputedly anticipated winning 60% of the vote.³⁵ In the end, the UN praised the election as proceeding in a 'generally orderly and peaceful atmosphere'.³⁶

The Ghanaian election of 2008 again featured an incumbent president (John Kufuor) barred from re-running for office. The candidate for the incumbent party, Nana Akufo-Addo, was from a rival faction to that of President Kufuor, and so, as in Sierra Leone, there were complaints that he was less than wholehearted in his support for his potential successor. In the event, the contest between John Atta-Mills and the candidate of the incumbent New Patriotic Party (NPP) was extremely close, resembling that of Kenya 2007: in the first round of the election neither party gained a majority, the opposition winning very narrowly in the second round. Akufo-Addo conceded defeat shortly after final results were made publicly available (even though a last-minute boycott was tried by NPP once it became apparent that the opposition was set to win³⁷). The scope for ballot fraud was severely curtailed by the unusual practice of having a genuinely independent electoral commission. Similarly, the scope for vote-buying was curtailed by two decades of national and international attempts to increase the integrity of the budget process. Instead of direct vote-buying, political parties could

³³ As mentioned by Panapress, October 12th 2007.

³⁴ The International Military Assistance Training Team (IMATT) in Sierra Leone – see <http://www.army.mod.uk>.

³⁵ Personal communication to the authors.

³⁶ UN News Centre, September 10th 2007.

³⁷ As reported by BBC, January 2nd 2008.

resort to it only indirectly by escalating promises of large public expenditures to particular localities.³⁸ In the event, the election was markedly less marred by illicit strategies than those discussed in the sub-sections above. The evidence from Figure 9 clearly supports this assessment, with Ghana having the lowest levels of all illicit strategies. Patently, Ghana was an instance of a 'conventional politics' equilibrium.

In all three of these elections in which the ruling party was defeated, the exogenous end of rule by an incumbent head of state appears to have been important. This suggests that in Sub-Saharan Africa term limits may be critical for regular transfer of political power. There are obviously limits to the speculation that comparisons of case studies will support, but the ease with which the Nigerian incumbent party survived a change of presidential candidate suggests that the massive resources available to ruling parties in oil economies may strengthen these parties' networks in a way that surpasses the specific identity of their leaders. Qualitatively, the 2007 electoral outcomes were not very different from the ones of the previous Nigerian 2003 elections, when President Obasanjo was re-elected as PDP's candidate with a comparable score and with similar patterns of electoral malfeasance. Various indications point to Angola, another major African oil producer, as a possible near-future case of successful transfer of power within an incumbent party. After the overwhelming military defeat of UNITA, the continuing strategy of buying-in top political figures from the opposition, has arguably made MPLA increasingly resemble PDP in terms of political primacy and cross-ethnic representation.

Both term limits impeding incumbent figures from running for top political offices and the presence of natural resources controlled by the incumbent, could be modeled as parameters in a generalization of our theory that would endogeneize the availability of vote-buying and vote-miscounting as incumbent strategies.

³⁸ We are indebted to Dr M. Bawumia, a vice-presidential candidate in the election, for this information.

4.6 A note on post-election violence

Our model does not incorporate violence that occurs after the election. Potentially, post-election violence can be used either by the incumbent or the challenger. The incumbent, while usually controlling more violence resources (e.g., army), can use the threat of violence to influence votes. This is the main idea proposed by Ellman and Wantchekon (2000). The opposition also can use post-election violence to protest the result as a response to flagrant fraud: violence then becomes legitimized in the eyes of opposition supporters.³⁹ Our model cannot readily accommodate the former type of behavior,⁴⁰ but it can easily be extended to include a final move in which violence may be used by the challenger. However, if we assume that the corresponding payoff consequences build on the announced electoral result (e.g., an outcome that is equidistant to the payoffs then achieved by the two candidates), equilibrium play would be unchanged. Politicians would still want to maximize their payoffs at the end of the formal electoral process, i.e., at the moment of the announcement of the electoral results.

In two recent examples of serious post-election violence, Democratic Republic of Congo (DRC) in 2006 and Kenya in 2007, the violence was opposition-led. As described, following the doubtful incumbent victory in the Kenyan elections of 2007, opposition supporters attacked government supporters, identified by their ethnicity. The violence ended with some members of the opposition being given positions in government. In DRC, balloting had been condemned by opposition leaders as ‘a masquerade of an election’. Following the incumbent victory the private army of the opposition engaged in a shoot-out with government forces. Initial vague promises of a role for opposition leaders in government ended with the exile of the opposition leader. At least from these examples, it

³⁹ Recall that the equilibrium of our model in section 3.2 featured ballot fraud accompanied by more than 50% of the vote to the challenger. This can be thought as a highly unstable situation.

⁴⁰ This is because we ruled out intimidation towards voting for the intimidating candidate. Enforcement of vote-transactions is generally a widely debated mystery (on vote-buying see, for instance, Vicente 2007). However, the fact that the incentives are negative under intimidation makes enforcement of ‘intimidating’ transactions even less likely. Indeed the only African example Ellman and Wantchekon propose for this mechanism is the Liberian presidential election of 1997 when Charles Taylor is argued to have led voters to vote for him for fear of post-election insecurity.

does not appear that post-election opposition violence would substantially alter our analysis of electoral malfeasance.

5. Conclusion

Democratization following the fall of the Soviet Union has introduced elections into contexts that lack significant restraints upon the behavior of candidates. As a result, incumbents are able to win using illicit strategies which are likely to dominate conventional attempts to please voters, and opponents may respond by resorting to such illicit strategies as are available to them. In this paper we have presented a formal model of the three predominant illicit strategies: voter intimidation, vote-buying, and ballot fraud, showing the circumstances in which each of them would be used by rational candidates. In spirit this is an extension of a core literature in analytic political economy on the limitations of elections as mechanisms for accountability of government to citizens. However, while an extension, for the societies concerned it is non-marginal. The introduction of illicit strategies in effect usurps the political process, nullifying elections as means of achieving accountability and legitimacy.

While in this paper we have not attempted to test the model, we have illustrated both its applicability and its limitations in important elections in Sub-Saharan African democracies. However, the model invites formal testing: the rapid improvement in political science datasets, which will eventually measure electoral violence, vote-buying, and vote-miscounting across a relevant set of African countries, will make an improvement on this paper's empirics more likely. Our tentative hypotheses that strong ethnic allegiances create a greater incentive to undertake violent intimidation, and that natural resources and term limits determine the degree of incumbency advantage will then be able to face precise empirical scrutiny.

The main policy implication of this paper is that, in the absence of effective constraints on candidates' electioneering tactics, legitimacy and accountability are unlikely to be achieved. The

international community already monitors the conduct of elections, but these assessments now need to be linked to credible and powerful incentives that make illicit tactics unattractive.

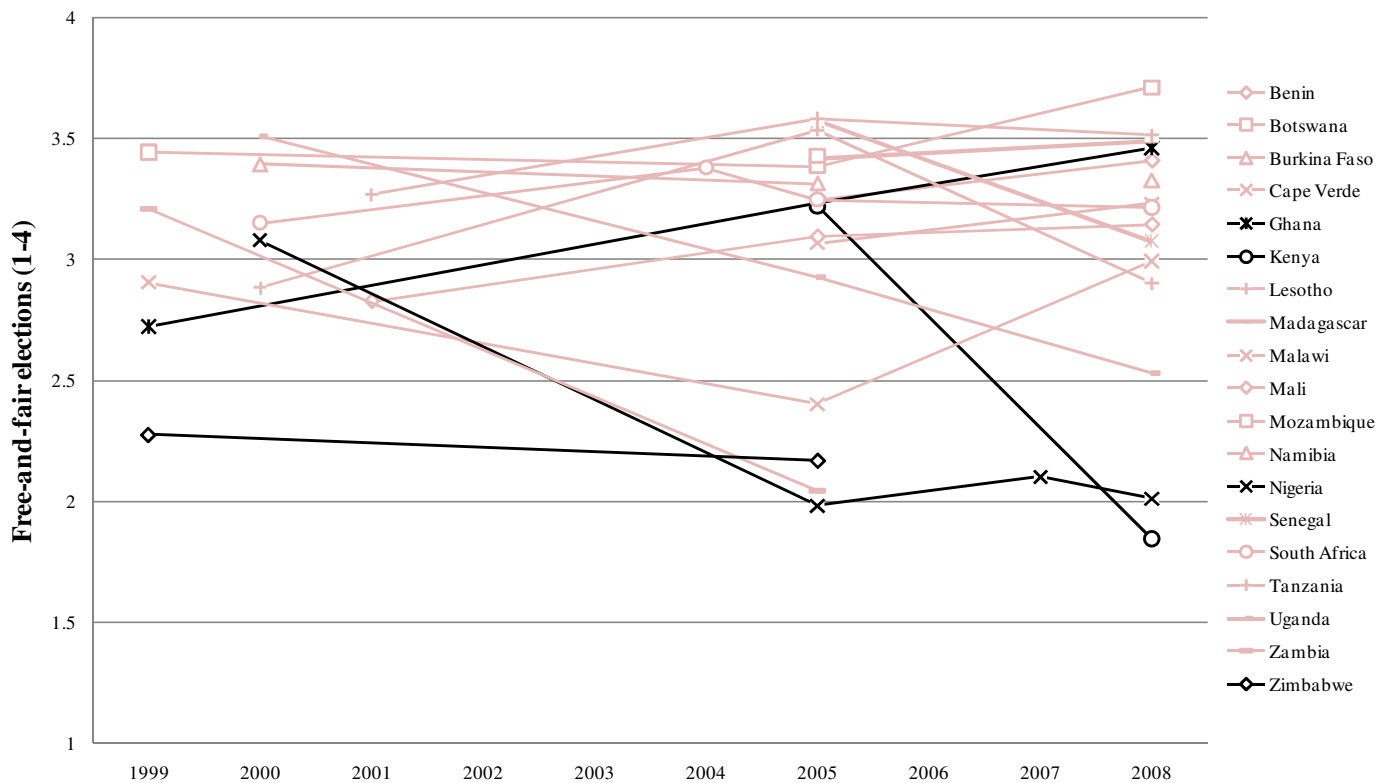
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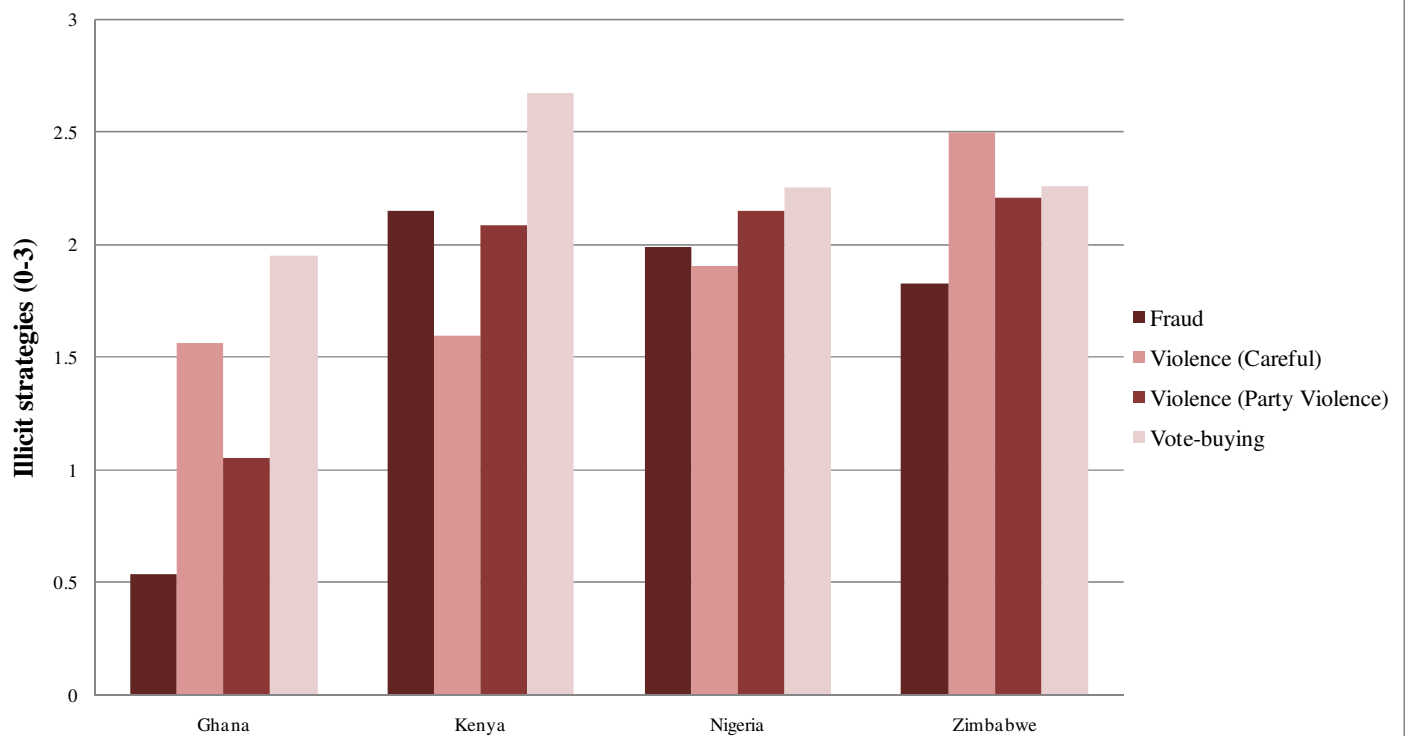
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Figure 8: Free-and-fair elections (Afrobarometer)



Source: Afrobarometer. The question used was: 'On the whole, how would you rate the freeness and fairness of the last national election, held in [XXXX]? 4=completely Free and Fair, 3=Free and Fair, but with minor problems, 2=Free and Fair, with major problems, 1=Not Free and Fair.'

Figure 9: Illicit strategies (Afrobarometer)



Source: Afrobarometer, latest years available. Fraud and violence are from 2008 for all countries except Zimbabwe (2005). Vote-buying is from 2005 for all countries except Kenya (2007). The fraud measure is given by a question on rating the last election in terms of 'freeness and fairness'. The measures of violence are given by questions on whether 'people should be careful of what they say about politics' and whether 'competition between political parties leads to conflict'. The measure of vote-buying is given by a general question on the frequency of 'gifts' offered by politicians.