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# Turnover and Accountability in Africa's Parliaments

Jeremy Bowles\* & Benjamin Marx†

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## Abstract

Legislators in developing democracies turn over at very high rates: across recent parliamentary elections in 12 African countries, only a third of incumbents are reelected on average. We show that this high turnover is consistent with an electoral equilibrium wherein voters' self-fulfilling beliefs limit accountability. First, we establish that voters' pessimistic beliefs, grounded in their inability to link distributive benefits to their representatives, induce the sanctioning of incumbents and reduce incentives to seek reelection. Second, we explore the role of attribution challenges in causing this equilibrium. Leveraging new data and plausibly exogenous variation in the allocation of constituency development funds (CDFs), over which legislators hold significant discretion, we find that CDFs (1) *increase* the rate at which incumbents are reelected; (2) *decrease* voters' perceptions of parliamentary corruption. These results shed new light on how attributable policy instruments, by shifting voters' beliefs about parliamentary efficacy, can contribute to enhancing democratic accountability.

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In its ideal form, democratic accountability functions as a virtuous circle: free and fair elections ensure that high-quality candidates are selected to represent their constituents, and electoral competition incentivizes incumbents to perform well in office. Turnover among incumbents can therefore signal the effective functioning of democratic accountability (Fearon, 1999; Besley, 2007). Yet, as recent work shows, persistently high turnover can also signal perverse political equilibria wherein accountability breaks down (Golden, Nazrullaeva and Wolton, 2020; Klasnja and Titiunik, 2017; Weaver, 2020). In settings where politicians' effort is hard to ascertain, voters' pessimistic beliefs can instead lead to the sanctioning of incumbents, worsen their performance, and reduce the attractiveness of political careers (Kartik and Van Weelden, 2019; Svulik, 2013).

In such equilibria, voters' beliefs about politicians are self-fulfilling: *because* turnover is high, lower-quality candidates are more likely to seek reelection, and incumbents extract more rents in expectation of a short term (Klasnja, Little and Tucker, 2018). This paper explores the empirical implications of, and potential policy solutions to, such a negative equilibrium. Drawing on a key implication of the theoretical literature, we examine how variation in citizens' ability to observe and attribute the effort of their representatives affects who seeks reelection and how they perform when doing so (Ashworth, Bueno de Mesquita and Friedenber, 2017). We study this in the context of parliamentary elections in sub-Saharan Africa, a region characterized by executive-dominated regimes where parliaments and individual MPs often possess limited attributable influence over policy outcomes (Van de Walle, 2003).

Using new data from over 6,000 parliamentary races across 12 African countries with identical electoral systems, we document that MPs face exceptionally high turnover rates. On average, only 57% of incumbents run for reelection, 55% are reelected conditional on running, and 32% are reelected overall. Reelection rates are low across the entire sample, ranging from 25% in Sierra Leone

to 43% in Uganda.<sup>1</sup> Using novel evidence from a regression discontinuity design, we establish that incumbents enjoy only a small unconditional electoral advantage which is entirely driven by narrow-winners in the prior election being more likely to subsequently run for office. Conditional on the same two candidates running consecutively, a simulation-based bounding exercise suggests that the incumbent's reelection chances are as good as random. Overall, parliamentary careers in our data appear short and precarious, with just 5% of MPs serving three consecutive terms or more.

These high rates of turnover and the poor electoral performance of incumbents do not, by themselves, establish the existence of a negative electoral equilibrium. To establish that voters' pessimistic beliefs increase turnover rates and limit accountability, our analysis proceeds in two parts. In the first part, we examine a set of empirical consequences consistent with accountability traps when voters struggle to attribute distributive benefits to their representatives. We show that constituents' prior pessimistic beliefs, but not their positive views about performance, predict subsequent reelection outcomes. Consistent with these beliefs being self-fulfilling, incumbents' entry decisions and performance indicate both negative selection (less qualified legislators seek reelection) and moral hazard (reelected legislators exert less effort).

In the second part, we demonstrate how shocks to voters' ability to attribute the effort of their representatives, by shifting voters' beliefs, can dynamically reduce turnover and enhance accountability. We do this focusing on a specific policy instrument, constituency development funds (CDFs), which have been—often controversially—introduced in various countries since the 1990s to facilitate the implementation of local development projects. CDFs typically involve financial transfers from the central government to constituencies which are (1) usually allocated following a rigid allocation

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<sup>1</sup>These figures are in line with the turnover rates reported in [Golden, Nazrullaeva and Wolton \(2020\)](#), which draws on different data sources. By comparison, [Matland and Studlar \(2004\)](#) document that parliamentary reelection rates average 68%, and range between 53% and 84%, in a sample of 25 industrialized countries.

rule, and (2) spent at the discretion of the local MP, often with little monitoring (Keefer and Khemani, 2009; Mattes and Mozaffar, 2016). To estimate the causal effect of CDFs on incumbents' electoral fortunes, we leverage variation in effective CDF intensity arising due to electoral malapportionment. Intuitively, because CDF allocations tend to be identical across constituencies while the number of voters in a constituency widely varies due to the historical infrequency of redistricting (Boone and Wahman, 2015), we consider how changes in the amount of CDF *per voter* across constituencies, and over time, affects electoral outcomes. Looking at five countries where CDFs have been introduced, we find that a doubling of the CDF allocation per voter increases reelection rates by approximately 30%. This effect is driven by increases in both the probability that incumbents seek reelection and their success conditional on doing so.

We hypothesize that these effects derive from voters' increased ability to observe and attribute the welfare-relevant efforts of their MPs. To provide evidence for this, we assess two empirical implications. First, our argument implies that voters update their pessimistic beliefs *on average* positively. Consistent with this idea, drawing on citizen survey data, we find that increases in CDF intensity improve voters' beliefs pertaining to parliamentary politics—their perceptions of MP corruption, their trust in parliament, and the extent to which they believe MPs are accountable to voters—without changing beliefs towards their president. Second, our argument implies a degree of type separation as voters become better able to assess the competence of their incumbent. Supporting this, drawing on incumbent-level data, we show that the electoral benefits of CDF intensity are greatest among incumbents with characteristics predictive of strong performance.

Theoretically, however, the introduction of these policy instruments could reduce turnover through other channels, including legislators' ability to buy votes, or the direct effect of CDFs on voters' economic conditions. Consistent with the generally small magnitude of CDFs, we do not find that

increased CDFs affect voters' economic perceptions. Last, we find limited evidence that CDFs facilitate vote buying. We systematically demonstrate the robustness of these results through sample restrictions, placebo tests, and permutations of our estimating equations.

Overall, our empirical evidence aligns with the implications of the theoretical literature. The results show how parliamentary turnover can reveal breakdowns in accountability underpinned by the self-fulfilling beliefs of voters. Voters who struggle to attribute effort to their legislators sanction participation in a political system considered ineffective and corrupt. In turn, because political careers are short and uncertain, lower-quality representatives differentially seek to stay in office. Policy instruments which fortify the informational linkages between legislator and voter, and thereby facilitate the attribution of effort and performance, hold significant promise for breaking out of such equilibria.

Our paper makes two contributions to the literature. First, we contribute to the literature on breakdowns in electoral accountability in developing democracies (Klasnja and Titiunik, 2017; Weaver, 2020). Although the informational mechanism we focus on features prominently in the theoretical literature (Ashworth, Bueno de Mesquita and Friedenber, 2017) it has remained largely empirically untested. Inspired by classic models of accountability, a significant body of recent experimental work varies voters' access to information about (generally incumbent-focused) performance metrics (Dunning et al., 2019). This body of work implicitly focuses on how information, by shrinking the variance of voters' signals, facilitates type revelation and endogenously affects politicians' incentives to exert effort (Bidwell, Casey and Glennerster, 2020; Grossman and Michelitch, 2018). In contrast, we consider how the availability of policy instruments which directly enable politicians to signal effort, and voters to attribute this effort, affects electoral outcomes. By doing so, we show how the attributability of policy instruments not only affects the behavior of politicians, but may

also enhance democratic accountability (Harding, 2015; Mani and Mukand, 2007; Tavits, 2007).

Second, we contribute to the literature on legislatures particularly in sub-Saharan Africa. Prior work has documented high parliamentary turnover across much of the developing world, which has typically been explained with reference to structural economic and demographic forces (Golden, Nazrullaeva and Wolton, 2020; Molina, 2001; Weghorst and Bernhard, 2014). By considering the interaction between agency problems and voters' self-fulfilling beliefs, we add to a growing literature taking seriously the roles of individual *legislators* in settings where their behavior is constrained by the centralization of institutional power (Lee, 2020; Opalo, 2019). Empirically, we substantially expand the breadth of cross-country evidence on the dynamics of incumbency and reelection beyond prior single-country studies in the region. Finally, while CDF expenditures are commonly used to measure MP effort (Bidwell, Casey and Glennerster, 2020; Harris and Posner, 2019; Ofosu, 2019), to our knowledge there exists no prior analysis of how these highly salient, and often controversial, policy instruments have affected electoral outcomes (Mattes and Mozaffar, 2016).

## **Theoretical literature and empirical implications**

Since the resurgence of multiparty competition in the 1990s, parliamentary elections have become increasingly salient across sub-Saharan Africa (Barkan, 2009; Opalo, 2019). MPs are often prominent local figures providing an important link between the rural periphery and urban centers of political power (Boone and Wahman, 2015; Mattes and Mozaffar, 2016). While the parliaments themselves, and this linkage role of parliamentarians, well predate democratization (Barkan, Okumu and Frederick, 1984; Hopkins, 1970), multiparty democratic competition has strengthened the pressures faced by leaders to deliver distributive benefits to their constituents (Harding, 2020).

Prior work has found very high levels of turnover across parliaments in many developing country settings (Dix, 1984; Kuenzi and Lambright, 2005; Molina, 2001). This work has tended to study turnover in the form of “volatility” (Pedersen, 1979) at the party-level, often through the lens of party system institutionalization, by considering structural political and economic forces (Mainwaring, Scully et al., 1995; Riedl, 2014).<sup>2</sup> Ferree (2010), for example, argues that the configuration of ethnic groups explains between-election variation in parties’ share of parliamentary seats, while Weghorst and Bernhard (2014) show how historical and economic variables condition party-level volatility.

### **Accountability traps in developing democracies**

We depart from this prior work on turnover by shifting the unit of analysis from the *party* to the *individual* politician. While structural explanations are well-suited to explain aggregate patterns of turnover between parties and across elections, studying incentives at the legislator-level enables us to more precisely relate turnover levels to breakdowns in accountability. The theoretical literature on accountability traps contends that in low-information environments, simple voter heuristics can lead to equilibria wherein incumbents are systematically sanctioned (Kartik and Van Weelden, 2019) or reelected essentially at random (Svolik, 2013), turnover is high, the perceived and actual performance of representatives is weak, and political careers are short (Caselli and Morelli, 2004; Klasnja, 2013).

Such equilibria are undergirded by the self-fulfilling beliefs of citizens about the quality of their representatives and the political system more broadly. Citizens’ pessimistic beliefs lead them to hold incumbents to stringent standards (Ashworth, Bueno de Mesquita and Friedenber, 2017) or

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<sup>2</sup>A different perspective is adopted by Golden, Nazrullaeva and Wolton (2020), who suggest that high electoral turnover in developing countries is a result of the ineffectiveness of clientelistic campaigning practices.



to sanction incumbents' participation in a political system perceived as corrupt (Svolik, 2013). By thereby increasing turnover, these beliefs *also* shorten the expected duration of political careers. Unstable careers exacerbate moral hazard among incumbents, who extract more rents in expectation of a short term, while also worsening selection, since parliamentary careers become less appealing to those with superior outside options (Dal Bó and Rossi, 2011). Together, these self-fulfilling beliefs might help rationalize the “endemic discontent” observed among voters across many developing democracies (Molina, 2001). Survey evidence from sub-Saharan Africa suggests that citizens, on average, exhibit pessimistic beliefs about their representatives: three quarters believe that at least some MPs engage in corruption, with a third believing that a majority are corrupt (Afrobarometer, 2018).

Consistent with such equilibria, Klasnja and Titiunik (2017), Uppal (2009), Macdonald (2014), and Weaver (2020) find evidence of incumbency disadvantages in Brazil, India, Zambia, and Peru, respectively. These effects stand in contrast to the generally positive incumbency advantage observed across many developed democracies (De Magalhaes, 2015). While this advantage might, in principle, stem from asymmetric access to resources between incumbents and challengers (Ashworth, Bueno de Mesquita and Friedenber, 2019), recent work emphasizes the quality-based channels through which positive incumbency advantages can signal effective electoral selection and accountability (Ashworth and Bueno de Mesquita, 2008; Eggers, 2017; Fowler, 2016).

### **Attribution challenges exacerbate turnover**

One key implication of the theoretical literature is that citizens' pessimistic beliefs are intertwined with the challenge of observing and attributing the welfare-relevant efforts of their representatives (Ashworth, 2012; Ashworth, Bueno de Mesquita and Friedenber, 2017). If citizens were able to

attribute such efforts then their negative beliefs about the broader political system, which undergird the sanctioning of incumbents, might in turn be weakened. Consistent with this idea, [Harding and Stasavage \(2014\)](#), [Harding \(2015\)](#), and [Mani and Mukand \(2007\)](#) show how politicians are incentivized to exert effort along dimensions which are more easily attributed to them by voters. In turn, [Tavits \(2007\)](#) argues that clearer separation of responsibility across politicians ought to reduce corruption.

Public opinion data suggests that citizens are well aware of who represents them: 72% of citizens can correctly name their MP ([Afrobarometer, 2009](#)), and 13% report personally contacting them in the year prior to enumeration ([Afrobarometer, 2018](#)). In spite of this familiarity, prior work has found citizens to overestimate the ability of their representatives to influence resource allocation ([Keefer and Khemani, 2009](#)). Part of the reason for this lies in the executive-dominated structure of many governments—90% of African regimes are classified as presidential or semipresidential ([Weghorst and Bernhard, 2014](#)). With control and discretion heavily centralized, MPs often lack significant discretion over resources or influence over policy even when citizens *expect* distributive benefits from their representatives ([Lee, 2020](#); [Mattes and Mozaffar, 2016](#); [Van de Walle, 2003](#)).

By shifting citizens' beliefs, policy instruments which enhance the observability of representatives' actions might therefore affect which representatives seek reelection and their fortunes when they do. Theoretically, this could occur through two complementary mechanisms. First, *holding the policy space fixed*, increasing voters' ability to observe and attribute the effects of policy decisions might increase the precision with which voters observe incumbents' types relative to their challengers ([Ashworth, Bueno de Mesquita and Friedenber, 2019](#)). This effect underlies much of the recent experimental work on supplying voters with performance information about their representatives ([Dunning et al., 2019](#); [Grossman and Michelitch, 2018](#)).

Second, more subtly, these classic models of electoral accountability tend to assume that politicians *could* signal their type, but only conditionally face incentives to do so. By contrast, in highly centralized regimes, legislators often do not have much influence over policy instruments with the potential to directly affect voter welfare (Lee, 2020). As a result, *the introduction of new policy instruments* might enable good politicians to exert more effort and, in doing so, to separate from bad politicians. The presence of attributable policy instruments therefore represents a composite of these two effects: incumbents gain an improved technology to signal their type, while voters gain a more precise signal of politicians' effort. Given voters' prior pessimistic beliefs, such policy instruments are then likely to improve voters' beliefs *on average*, and especially so for legislators revealed to be strong performers.

## **Policy instruments and distribution**

There are several types of policy instruments which can provide a new technology for politicians to signal, and simultaneously allow voters to observe effort more precisely. Such policies relate to arguments in the decentralization literature which suggest that delegating authority over distributive decisions might, in principle, improve welfare outcomes (by pushing service delivery closer to citizens) while facilitating electoral accountability (by enabling voters to observe and punish poor performance) (Faguet, 2014; Khemani, 2001), though the empirical record along both margins remains contested (Ahmad et al., 2005; Bardhan and Mookherjee, 2006; Gélinau and Remmer, 2006). Typical decentralization policies tend to involve shifts in the *geographical locus* of distribution (from the central government to local governments). More pertinent for our theoretical framework are policies which involve the delegation of authority *to* individual legislators *from* other organs of the central government, such as the ruling party or the dominant executive.

Accordingly, confronting this disconnect between citizens' expectations and the frequently limited ability of MPs to influence distribution (Lee, 2020), many countries have experimented with policy instruments intended to reduce bureaucratic inefficiencies and simultaneously enhance electoral accountability. As perhaps the most salient example, more than twenty countries across Africa and Asia have, since the 1990s, introduced Constituency Development Funds (CDFs) with the aim of "bringing legislators closer to the people" (Keefer and Khemani, 2009; Malik, 2021). CDFs consist of rule-based financial transfers from the central government to electoral constituencies. Allocative decisions thereafter tend to be directly controlled by, and attributable to, local MPs—"a key feature of CDF schemes is that Members of Parliament typically exert a tremendous degree of control over how funds are spent" (International Budget Partnership, 2010).<sup>3</sup> These funds are typically used by incumbents to support small-scale local development projects and infrastructure rehabilitation (Tshangana, 2010).

Because these funds create opportunities for rent-seeking in the presence of limited oversight, allegations of fraud and corruption have led to major reforms in some countries. For example, the CDF was abolished in Uganda in 2011, overhauled in Kenya in 2013, and discontinued in Zambia in 2017. In spite of this, recent empirical evidence suggests that CDF expenditures are not simply targeted towards political supporters and that expenditures provide a valid measure of MPs' effort (Harris and Posner, 2019; Ofosu, 2019). While the overall welfare effects of CDFs are therefore contestable, their design—with incumbents having significant discretion over allocation—nonetheless ought to enhance the ability of citizens to observe and attribute the efforts of their representatives. Such increases, in turn, might shift voters' otherwise pessimistic beliefs about the political system.

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<sup>3</sup>Asunka (2017) points to important variation in the extent to which MPs have full discretion over CDF spending, while Malik (2021) demonstrates that the allotted entitlement of financial transfers might not be consistently supplied to legislators.

# Data

Our empirical objectives are both descriptive and analytical. Descriptively, we document rates of turnover and estimate whether incumbents electorally benefit from their status. Analytically, we establish the empirical relevance of voters' pessimistic beliefs in explaining variation in turnover and sustaining limited electoral accountability. We do this, first, by considering whether variation in turnover is consistent with the notion of an accountability trap wherein voters struggle to observe and attribute the efforts of their representatives. Second, we examine how shocks to voters' ability to observe and attribute such efforts, by shifting their beliefs about their representatives, then affect turnover and electoral accountability. In this section we outline the sources of data we employ in our empirical analysis. We summarize the countries covered by each data source in [Table A1](#).

## Parliamentary election data

We collected parliamentary election results from 12 African countries with identical electoral systems at the parliamentary level, namely single-member constituencies with first-past-the-post voting.<sup>4</sup> Matching constituencies over time, we constructed a panel dataset of 6,255 observations (electoral races) at the constituency-year level across 12 countries and 2,310 constituencies, spanning from 1996 to 2017.<sup>5</sup> [Appendix A.1](#) describes the sample construction and [Table A4](#) lists all the elections included in our sample.

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<sup>4</sup>The countries in the sample are Botswana, Côte d'Ivoire, the Gambia, Kenya, Liberia, Malawi, Nigeria, Sierra Leone, Tanzania, Uganda, Zambia, and Zimbabwe. Côte d'Ivoire also uses multi-member districts, but 83% of constituencies are single-member. We only use single-member constituencies in our analysis.

<sup>5</sup>Eight out of the twelve countries have a stable number of constituencies across the elections in the sample, while four (Kenya, Malawi, Tanzania, and Uganda) experienced some redistricting in 2013, 1999, 2015, and 2011-2016, respectively. While redistricting may adversely affect the electoral performance of incumbents at the margin, we discuss in [Appendix A.1](#) why it cannot explain our results.

## **Citizen survey data**

To assess the relationship between voters' beliefs and electoral turnover, we use geocoded Afrobarometer data from survey rounds 3 to 5 (2005-2012). The overlap between the electoral data described above and the citizen survey sample yields a dataset of respondents across 627 constituencies across five countries for which we were able to obtain constituency shapefiles: Botswana, Kenya, Uganda, Zambia, and Zimbabwe.<sup>6</sup> The key variables of interest from the citizen survey data relate to citizens' perceptions of MPs' corruption, performance, and voters' trust in them.

## **Constituency Development Funds**

Constituency Development Funds are currently, or have been, in use in seven countries in our sample.<sup>7</sup> Out of these, we were able to collect disaggregated data on the yearly allocation of CDFs to constituencies in five countries: Kenya, Malawi, Uganda, Zambia, and Zimbabwe. In our analysis, motivated by the identification strategy discussed below, we use USD nominal amounts for comparability across countries and compute the allocation of CDFs per registered voter using the electoral data described above.<sup>8</sup> Table A6 summarizes CDF allocation rules in force in every country in the sample, and Table A7 documents the wide variation in CDF allocations per voter across and within countries.

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<sup>6</sup>Due to the fact that Afrobarometer is administered as a nationally representative cross-section, constituencies vary in whether they appear in more than one survey round.

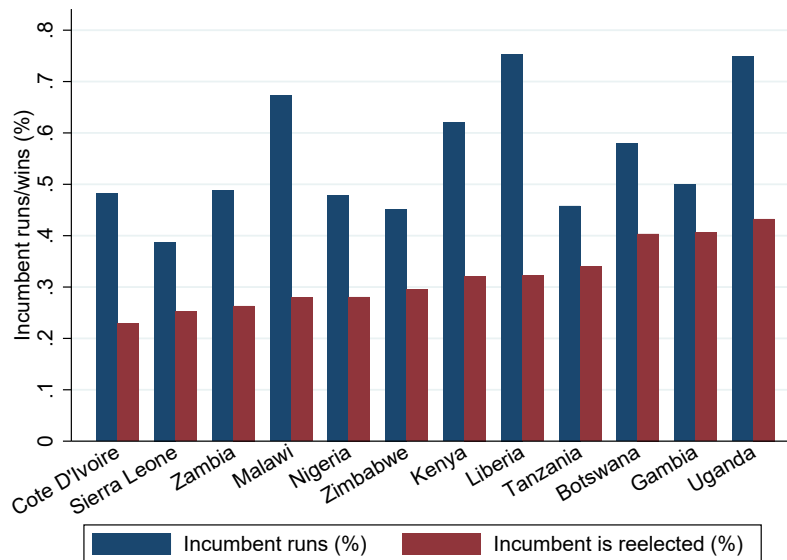
<sup>7</sup>These are Kenya, Malawi, Sierra Leone, Tanzania, Uganda, Zambia, and Zimbabwe. Ghana and Liberia have CDFs administered at the district level.

<sup>8</sup>Since census data is typically unavailable at sufficient temporal frequency or geographical granularity to map onto our election-constituency units, we are unable to instead use CDFs per person in our analysis. At the same time, CDFs per voter are plausibly the more relevant measure to use given our approach, in which we emphasize the role of voters' beliefs in sustaining high rates of MP turnover.

## Turnover and the (Lack of) Incumbency Advantage

Figure 1 summarizes the electoral performance of incumbent MPs across the sample.<sup>9</sup> The overall electoral performance of incumbents is poor: reelection rates are 32% on average, in line with estimates relying on different data sources (Golden, Nazrullaeva and Wolton, 2020). This is partly driven by the low rate (57%) at which incumbents seek reelection at all—importantly, no country in the sample has parliamentary term limits. There is no clear relationship between incumbent performance and regime type in the sample. By comparison with these high rates of turnover, U.S. House Representatives and Senators experienced reelection rates in the post-WWII era of 93% and 80%, respectively (Kondik and Skelley, 2016), and parliamentary reelection rates average 68% in a sample of 25 industrialized countries (Matland and Studlar, 2004).

**Figure 1:** Reelection rates by country



Next, we consider whether these high rates of turnover are driven by incumbents being sanctioned when they seek reelection. To do this, we implement a regression discontinuity design. The

<sup>9</sup>We provide a table of relevant summary statistics in Table A5.

data is at the candidate-level, and we include candidates from all constituencies in the electoral sample described in the previous section. Using outcomes relating to whether the top two candidates from elections in  $t$  seek election in  $t + 1$  and their electoral fortunes when they do, we estimate the following equation:

$$Y_{ij,t+1} = \tau \text{Incumbency}_{ijt} + \beta_1 X_{ijt} + \beta_2 X_{ijt} \text{Incumbency}_{ijt} + \varepsilon_{ijt}, \quad (1)$$

where  $i$  denotes a candidate running in constituency  $j$  at time  $t$ ;  $X_{ijkt}$  is the forcing variable denoting the difference between the vote share of candidate  $i$  and the other top-two finisher in constituency  $j$  at time  $t$ ;  $Y_{ij,t+1}$  is a measure of  $i$ 's electoral performance in the subsequent election; and  $\text{Incumbency}_{ijt}$  defines the treatment (winning constituency  $j$  at time  $t$  and hence being assigned to incumbency status). Under the identifying assumptions discussed below,  $\tau$  estimates the causal effect of incumbency on subsequent electoral outcomes at the cutoff. Standard errors are clustered at the constituency level.

Following prior work, we distinguish between *unconditional* and *conditional* effect estimates (De Magalhaes, 2015; De Magalhaes and Hirvonen, 2019). We initially consider the unconditional estimate:<sup>10</sup> the reelection status, or vote share, in period  $t + 1$  of the two candidates who narrowly won or lost election in  $t$ , regardless of whether they actually run in  $t + 1$ . To interpret our results, we then assess differences in the probability of running in  $t + 1$  before estimating the *conditional* estimate which restricts the sample to those who do run in  $t + 1$ . We implement a bounding approach to account for the potential contamination of these estimates due to selection among which candidates run again in  $t + 1$ .

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<sup>10</sup>More formally, we estimate the *individual-level* unconditional incumbency advantage rather than the party-level effect (De Magalhaes and Hirvonen, 2019). This individual-level effect is a composite of *personal* and *partisan* components (Fowler and Hall, 2014)—in our setting, where party systems tend to be very weak, we should expect that the partisan component is substantively far smaller than the personal component.



For Equation (1), we use the robust regression discontinuity (RD) estimator provided by [Calonico, Cattaneo and Titiunik \(2014\)](#), or CCT. We use their MSE-optimal bandwidth throughout, which varies depending on the outcome variable considered. The key identifying assumption is that, within this bandwidth, electoral outcomes in  $t$  are as-if randomly assigned. The structure of our estimation, with two observations per constituency, means that the density of the forcing variable is mechanically symmetric around the threshold ([Figure A1](#)), and that constituency-level variables are held fixed. We provide additional evidence that candidate-level characteristics are smoothly varying at the threshold in [Table A8](#), which suggests that narrow-winners at time  $t$  are no more or less likely to have previously been incumbents at  $t - 1$ , or to be ruling party candidates, than narrow-losers.

## **The limited benefits of incumbency**

[Table 1](#) presents the regression discontinuity estimates from Equation (1) for four dependent variables: whether candidate  $i$  wins the election at time  $t + 1$  ([panel A](#)), her vote share at  $t + 1$  unconditional on whether she runs ([panel B](#)), the probability she runs again at  $t + 1$  ([panel C](#)), and the (potentially negative) margin of victory at  $t + 1$  ([panel D](#)).<sup>11</sup> We report the robust, bias-corrected estimates of  $\tau$ , with additional specifications where we add country dummies in even-numbered columns. [Figure A2](#) provides a visual representation of these treatment effects.

Two main takeaways emerge from [Table 1](#). First, candidates who narrowly win the election (thus becoming incumbents) at  $t$  are unconditionally more likely to win reelection at time  $t + 1$  than candidates who narrowly lose, by 8.5 percentage points ([panel A](#)). This unconditional estimate, while positive, is substantially smaller than equivalent estimates from a number of developed democra-

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<sup>11</sup>If the candidate does not run again in  $t + 1$ , she is coded with a 0 for the ‘Elected’ and ‘Vote share’ outcomes to avoid post-treatment selection into the sample, following [Eggers \(2017\)](#). If candidate  $i$  does not win the  $t + 1$  election, the victory margin is defined as candidate  $i$ ’s own vote share minus the vote share of the election winner.

**Table 1:** Estimates of the incumbency advantage

	A. Elected		B. Vote share		C. Runs		D. Margin	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Incumbency <sub><i>t</i></sub>	0.085** [0.036]	0.085** [0.035]	0.067*** [0.019]	0.067*** [0.019]	0.172*** [0.041]	0.171*** [0.041]	0.004 [0.029]	0.007 [0.031]
Outcome mean	0.199	0.199	0.168	0.168	0.438	0.438	-0.013	-0.013
Bandwidth	0.201	0.204	0.207	0.206	0.232	0.227	0.239	0.195
Country FE		✓		✓		✓		✓
Observations	8355	8355	8353	8353	8358	8358	3648	3648

DVs: A. Candidate is elected in  $t + 1$ ; B. Unconditional candidate vote share in  $t + 1$ ; C. Candidate runs for reelection in  $t + 1$ ; D. winning margin of candidate in  $t + 1$  conditional on running.

All specifications estimated at the candidate-level using Equation (1). CCT MSE-optimal bandwidth used throughout. Running variable is the vote share of the candidate in the election at  $t$  minus the vote share of the other top-two candidate at  $t$ . \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

cies with first-past-the-post electoral systems. [Song \(2018\)](#), for example, reports an unconditional incumbency advantage above 20pp among Canadian legislators, while [De Magalhaes and Hirvonen \(2019\)](#) cite estimates of 30pp among British and 45pp among American legislators.

Second, this unconditional effect is driven by large differences in the entry of winners and runners-up. Narrowly-elected incumbents are 17 percentage points (pp) more likely to run in the election in  $t + 1$  relative to close runners-up in the time  $t$  election (panel C). However, when the runner-up does run again at  $t + 1$ , the winner of the first election holds no advantage over the runner-up and the observed conditional incumbency advantage is a precise zero (panel D). We assess the robustness of these results by: (1) using higher-order polynomials of the forcing variable in [Table A9](#); (2) varying the bandwidth used for estimation in [Figure A3](#); (3) splitting the sample between the most and least democratic regimes in [Table A10](#);<sup>12</sup> (4) splitting the sample based on whether

<sup>12</sup>In [Table A10](#), we split the sample between the six most democratic and six least democratic countries based on the average Polity IV score over the period of the data. The six most democratic countries are Botswana, Kenya, Liberia, Malawi, Sierra Leone, and Zambia; the six least democratic countries are Côte d’Ivoire, the Gambia, Nigeria, Tanzania, Uganda, and Zimbabwe.

candidates represent well-established ruling or opposition political parties in Table A11.<sup>13</sup> We find similar results across specifications, bandwidths, and subsamples.

This evidence initially suggests that the unconditional advantage conferred by incumbency is due to incumbents' increased rate of entry into seeking reelection rather than by their performance in the  $t + 1$  election conditional on running. To substantiate this interpretation, we bound the conditional treatment effect estimates from panel D in Table 1. In the spirit of Anagol and Fujiwara (2016) and Lee (2009),<sup>14</sup> we assess the extent of selection into seeking office in  $t + 1$  necessary to generate a positive conditional incumbency advantage, as observed elsewhere (De Magalhaes, 2015). Let  $P_W$  represent the probability that an election winner from  $t$  who did not run in  $t + 1$  *would* have won their election in  $t + 1$  *had* they run, and let  $P_L$  represent the same probability for the runner-up from  $t$ . Intuitively, the estimate is maximized when  $P_W = 1$  and  $P_L = 0$  and minimized when  $P_W = 0$  and  $P_L = 1$ .

With this in mind, using Equation (1) we estimate the conditional incumbency advantage while smoothly varying both  $P_W$  and  $P_L$  to simulate hypothetical election outcomes, for all candidates who do not run in  $t + 1$ , between 0 and 1.<sup>15</sup> Figure 2 plots the resulting absolute value of the coefficient estimates of  $\tau$  using the size of each circle, and indicates a statistically significant estimated

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<sup>13</sup>This final test is motivated by prior work, such as Wahman (2014), which examines *party*-level turnover in African parliaments. In this analysis, ruling parties we include are BDP in Botswana, PDP in Nigeria, CCM in Tanzania, NRM in Uganda, ZANU in Zimbabwe, and KANU in Kenya. Opposition parties include the BNF in Botswana, FDC in Uganda, MDC in Zimbabwe, CUF in Tanzania, and ODM in Kenya.

<sup>14</sup>We do not exactly follow the selection framework used in Anagol and Fujiwara (2016) because it relies on a “no defiers” assumption which is likely violated in our setting. This assumption requires that there are no candidates who would run again after a second-place finish but would not run after a first-place finish. Here, the fact that many politicians may want to serve only a single term makes it unlikely that the no-defiers assumption holds. Regardless, implementing their preferred approach provides a lower bound estimate of the conditional incumbency effect of  $\tau = 0.027$ , which is statistically insignificantly different from zero. Using the more conservative lower bound, akin to Lee (2009), implies a strongly negative conditional incumbency advantage of  $\tau = -0.14$ .

<sup>15</sup>More formally, we randomly assign the victory status of all non-entrant candidates in  $t + 1$  using Bernoulli trials weighted by the relevant  $P_W$  or  $P_L$  depending on the candidate's type. If the non-entrant is assigned to win, any entrant candidate who actually wins reelection in  $t + 1$  is instead assigned to lose in  $t + 1$ . We repeat this process 100 times to smooth out noise in the resulting estimates.

**Figure 2:** Selection and the conditional incumbency advantage

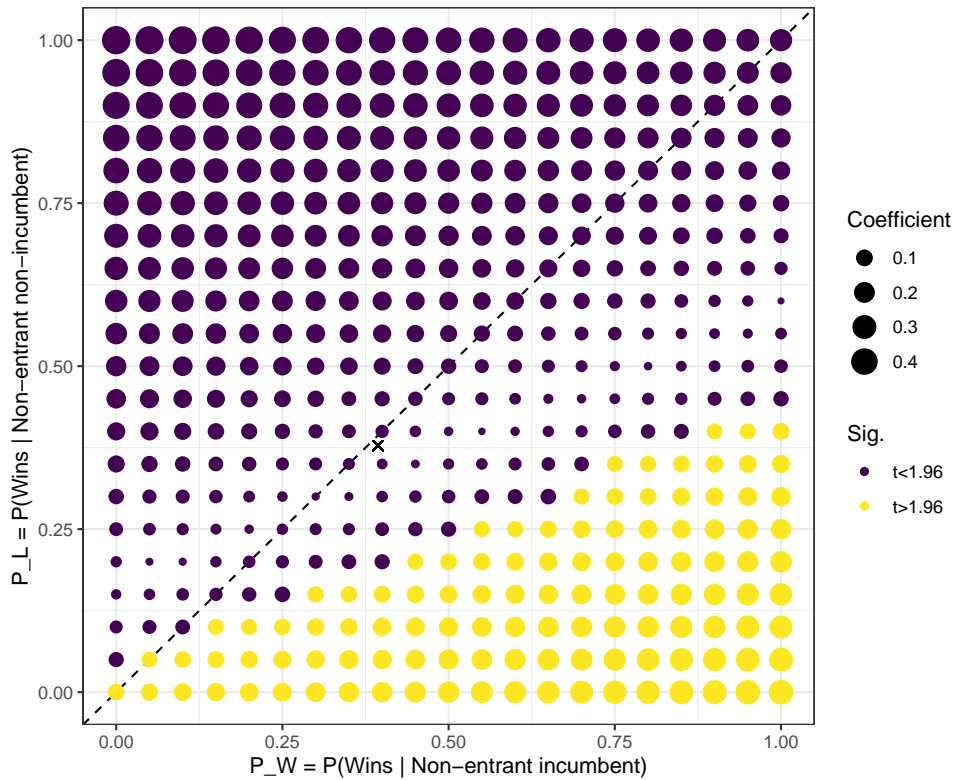


Figure plots simulated estimates of  $\tau$  from Equation (1) while imputing election outcomes using  $P_W$  and  $P_L$ , the probability that candidates who *did not* seek election in  $t + 1$  would have won had they sought election. Size of circle represents the absolute value of the resulting estimate of  $\tau$ ; color indicates whether the estimate is statistically significantly positive at the 95% level. Estimation is run 100 times and average values taken. Cross marks the observed values  $(\bar{P}_W, \bar{P}_L) = (0.39, 0.38)$ .

treatment effect using the color. The *actual* probability of incumbents and non-incumbents winning in  $t + 1$  given they run is marked by a cross at  $(\bar{P}_W, \bar{P}_L) = (0.39, 0.38)$ .

This simulation exercise delivers the following insights. First, if we set  $P_W = P_L = P$ , a positive effect of incumbency is only observed at extremely low values of  $P$  as the estimate of  $\tau$  approximates the unconditional effect estimate from Panel A in Table 1. Intuitively, since the differences in the probability of running in  $t + 1$  are large, as  $P$  grows this differentially induces the simulated victory of more non-incumbent candidates and reduces  $\tau$ . Second, it is almost impossible to generate a significantly positive estimate without assuming the *positive* selection of non-incumbents into seeking election in  $t + 1$  (i.e. that  $P_L < \bar{P}_L$ ), while most of the parameter space consistent with a significantly positive effect estimate implies the *negative* selection of incumbents into seeking election in  $t + 1$  (i.e. that  $P_W > \bar{P}_W$ ). Third, to sustain a positive conditional effect it must be the case that, overall, selection effects are substantively large. In particular,  $P_W$  must be much larger than  $P_L$  such that non-running incumbents have far superior electoral prospects relative to non-running runners-up. For example, if we assume no selection among runners-up (i.e.  $P_W = \bar{P}_W$ ), we require that non-running incumbents would have won at roughly *twice* the rate of incumbents who did actually run in  $t + 1$ .

Taken together, this exercise suggests that a positive conditional incumbency advantage—which arguably signals well-functioning electoral processes—is only consistent with the presence of large selection effects, such that incumbents are strongly negatively self-selecting into seeking reelection. Absent these selection effects, incumbents receive no electoral benefit owing to their status. At the same time, this evidence overall does not support the existence of strong incumbency *disadvantages*, in contrast to prior work in other developing country settings. The estimates are consistent with elections being decided essentially at random conditional on the decision to seek office again.

## Pessimistic Beliefs, Selection, and Moral Hazard

High levels of turnover combined with incumbents' poor electoral performance does not, by itself, establish the existence of a negative electoral equilibrium. In this section, we therefore examine whether variation in turnover is consistent with the empirical implications of accountability traps wherein voters struggle to observe and attribute the effort of their representatives. First, we examine the correlates of turnover using our citizen survey data. We estimate how voters' perceptions of MP corruption and performance correlate with the subsequent electoral performance of incumbents. This test is motivated by the hypothesis that citizens' pessimistic beliefs about their representatives underpin high levels of electoral sanctioning. We use the same set of electoral outcomes as in the RD design, each measured in the election immediately following the relevant round of citizen survey data collection, to estimate the following equation via OLS:

$$Y_{ijkt} = \mathbf{Beliefs}'_{ijkt}\beta_1 + \mathbf{X}'_{ijkt}\beta_2 + \delta_{kt} + \varepsilon_{ijkt}, \quad (2)$$

where  $i$ ,  $j$ ,  $k$ , and  $t$  denote the respondent, constituency, country, and survey round, respectively.  $\mathbf{Beliefs}$  is a vector of beliefs about MPs, including their perceived corruption, performance, and respondents' trust in them. All regressions include country-year fixed effects and a vector of controls,  $\mathbf{X}_{ijkt}$ , which includes individual-level variables (age, gender, education, and unemployment) as well as enumeration area-level variables (rurality, standardized indices of access to public goods in the constituency, including electricity, piped water, sewage, schools, and clinics). Standard errors are clustered at the constituency-year level.

Second, to establish a breakdown in electoral accountability, we ask whether voters' pessimistic beliefs are *self-fulfilling*. High turnover implies that parliaments may fail to attract and retain high-

quality politicians (a selection channel), and to incentivize MPs to perform well in office (a moral hazard channel). We collect granular MP-level biographic data and CDF spending data from one country, Kenya, to examine these effects. To explore the selection channel, using biographic data from [Mzalendo \(2018\)](#), we examine how MPs' decisions to run for reelection covary with observable measures of politician quality, including education and professional experience. We then explore the moral hazard channel using CDF expenditure data. Using Equation (1), we estimate how incumbency affects a commonly-used measure of incumbent performance, the fraction of CDF resources actually spent during their term.

## **Turnover and pessimistic beliefs**

Table 2 reports estimates from Equation (2). Of the several types of beliefs included on the right-hand side, beliefs about MP corruption (panel A) are the most robust correlate of the subsequent electoral performance of incumbents. A one standard deviation (sd) increase in how pervasive a respondent believes corruption is among MPs is associated with a reduction in the likelihood of an incumbent's reelection in the following election by 1.5 percentage points ( $p < 0.05$ ) This estimate is robust to the inclusion of individual and enumeration area-level controls (column 2) as well as to controlling for respondents' analogous beliefs about their president (columns 3 and 4). In panel B, pessimistic beliefs about the corruption of MPs are weakly associated with their reduced unconditional vote shares in the subsequent election ( $p < 0.1$ ). We find limited evidence that other respondent beliefs about MPs, whether their trust in them or MP's perceived performance, correlate with subsequent electoral outcomes. These patterns remain unchanged whether we consider respondents in urban or rural localities in [Table A12](#).

While the estimated effect sizes are reasonably small, this is not necessarily surprising: a rich

**Table 2: Correlates of incumbent turnover**

	<b>A. Reelected</b>				<b>B. Vote share</b>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Beliefs about MPs</b>								
Corruption	-0.013** [0.006]	-0.015*** [0.006]	-0.014** [0.007]	-0.016*** [0.006]	-0.007* [0.004]	-0.007* [0.004]	-0.005 [0.004]	-0.005 [0.004]
Trust	-0.005 [0.007]	0.001 [0.006]	-0.005 [0.007]	0.000 [0.007]	-0.002 [0.004]	-0.000 [0.004]	-0.002 [0.004]	-0.001 [0.004]
Performance	0.004 [0.008]	0.003 [0.008]	0.003 [0.008]	0.002 [0.008]	0.003 [0.004]	0.003 [0.004]	0.003 [0.004]	0.002 [0.004]
<b>Beliefs about president</b>								
Corruption			0.001 [0.008]	0.003 [0.008]			-0.005 [0.004]	-0.005 [0.004]
Trust			-0.000 [0.009]	0.001 [0.008]			-0.002 [0.005]	-0.001 [0.005]
Performance			0.002 [0.009]	0.002 [0.009]			0.001 [0.005]	0.002 [0.005]
Outcome mean	0.304	0.304	0.304	0.304	0.244	0.244	0.244	0.244
Outcome SD	0.460	0.460	0.460	0.460	0.270	0.270	0.270	0.270
Controls		✓		✓		✓		✓
Clusters	667	667	667	667	667	667	667	667
Observations	9437	9437	9437	9437	9437	9437	9437	9437

DVs: A. Incumbent is reelected in election following survey; B. Unconditional incumbent vote share in election following survey. All independent variables are standardized. ‘Corruption’: perceived corruption of MPs/president; ‘Trust’: trust in MPs/president; ‘Performance’: performance of MP/president.

All specifications estimated at the respondent-level using Equation (2). Controls comprise a vector of individual-level and enumeration area-level variables. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-year level.



literature suggests that only a thin relationship should exist between citizen attitudes and electoral outcomes once individual-level economic and demographic variables are accounted for (Bratton and Kimenyi, 2008; Carlson, 2015; Ichino and Nathan, 2013; Weghorst and Lindberg, 2013). Regardless, the relative magnitude of the coefficients suggests that citizens' negative beliefs about corruption matter more for incumbent's reelection prospects than positive beliefs about performance or trust. In Table A13, we use outcomes relating to whether incumbents seek reelection and their conditional winning margins, and find evidence that respondents' pessimistic beliefs about MP corruption correlate with incumbents selecting out of seeking reelection as well as their margins conditional on running, though the effects are imprecisely estimated. In Table A14, we add an independent variable relating to whether respondents consider MPs to be primarily responsible to their voters as a proxy for respondents' beliefs about MP accountability.<sup>16</sup> Doing so suggests that incumbents are significantly more likely to seek reelection in constituencies where voters feel MPs are accountable to them.

## **Selection and moral hazard**

In principle, high levels of electoral turnover correlating with voters' negative beliefs about MP corruption could be consistent with effective electoral sanctioning. If this were the case, we should observe that elections attract high-quality candidates, competent MPs are more likely to seek reelection, and electoral competition incentivizes incumbents to perform well.

To provide evidence that the high turnover we observe is inconsistent with such mechanisms, and that it instead limits effective electoral accountability, we draw on data from Kenya, where granular biographic data on individual MPs is available from Mzalendo (2018). The sample for this analysis

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<sup>16</sup>The sample size drops significantly because this question was only asked in Afrobarometer round 3 and 4.

is composed of all Kenyan legislators elected in 2002 and 2007 and whose reelection performance is observed in 2007 and 2013, respectively. Here, we describe the main takeaways from this analysis, while Appendix A.2 provides additional details on the data and estimation strategy.

Consistent with the presence of negative selection, as implied by the bounding exercise above, we find that more competent legislators are *less* likely to seek reelection (Table A2, column 3), despite the fact that their electoral performance is superior when they do run for reelection (column 4).<sup>17</sup> Our proxies for competence include the number of parliamentary speeches during the previous term of office, having completed a graduate education, and having professional experience in the private sector—we find, for example, that MPs with a graduate degree and private sector experience are 10 and 11 percentage points less likely to run for reelection, respectively. Overall, the estimates in Table A2 suggest that the Kenyan parliament fails to retain its most able members as legislators with better outside options are more likely step down at the end of their term. The low quality of incumbents who run for reelection likely contributes to high turnover which, in turn, diminishes the expected duration and the attractiveness of parliamentary careers.

Consistent with the presence of moral hazard, we also find that quasi-randomly reelected incumbents exert significantly less effort in their second term (Table A3). We measure effort, following Bidwell, Casey and Glennerster (2020) and Ofosu (2019), using the share of CDF allocations actually spent by incumbents. Even in the absence of formal term limits, second-term MPs spent a smaller fraction of their CDF, perhaps because they anticipate a limited chance of obtaining a third term. Overall, these results are consistent with the self-fulfilling nature of citizens' pessimistic beliefs, as posited by the theoretical literature on accountability traps. Because of high turnover,

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<sup>17</sup>We note that the negative selection effects in Table A2 are likely too small in magnitude to imply a positive conditional incumbency advantage in Figure 2 unless we assume strongly positive selection effects among runners-up (which we are unfortunately unable to test due to a lack of individual-level data about runners-up).

higher quality representatives with superior outside options select out of seeking reelection, while those that *do* win reelection perform worse in their second term.

The evidence thus far suggests that voters sanction incumbents who are either perceived as corrupt, or perceived as engaging in a corrupt parliamentary system. Voters' pessimism undermines the electoral performance of sitting MPs—even conditional on the MP running, beliefs about MP corruption offset positive assessments of the incumbent's own performance as a correlate of the decision to reelect an incumbent. Combined with our estimation of the incumbency advantage which implies strongly negative self-selection among incumbents seeking reelection, this suggests that voters' negative beliefs play an important role in explaining the limited electoral benefits conferred by incumbency.

## **Electoral effects of Constituency Development Funds**

These results suggest that the variation in levels of turnover observed across African parliamentary elections is consistent with the existence of accountability traps, underpinned by the self-fulfilling beliefs of citizens about their representatives. Informational breakdowns are partially responsible for this equilibrium. When voters struggle to attribute changes in their welfare to the effort of their representatives, they may rely on simple heuristics based on their generally pessimistic beliefs about the corruption of politicians.

We now provide evidence consistent with this underlying equilibrium. We consider how shocks to voters' ability to observe and attribute the effort of their representatives, by reshaping their beliefs about the political system, affect turnover. We do this focusing on how the allocation of CDFs—highly observable, discretionary funds assigned to representatives—affects electoral outcomes.

## Estimation

To estimate the effect of CDFs on the electoral performance of incumbents, we propose a novel identification strategy inspired by [Kaboski and Townsend \(2011\)](#) which leverages within-country variation in the intensity of CDF allocations resulting from electoral malapportionment.<sup>18</sup> In theory, parliamentary constituencies in our electoral sample are designed to contain an equal number of citizens. For example, the Kenyan constitution (art. 89) states that “The boundaries of each constituency shall be such that the number of inhabitants in the constituency is, as nearly as possible, equal to the population quota,” with the population quota defined on the basis of population censuses. In practice, however, such quotas are rarely attained or enforced. Electoral malapportionment arises when the rules used to translate votes into parliamentary seats create unequal representation across constituencies. As [Boone and Wahman \(2015\)](#) show, such malapportionment is very common in sub-Saharan Africa because redistricting on the basis of new censuses has been historically infrequent.

The allocation rules for CDFs vary across countries in our sample, but usually involve a fixed allocation across constituencies.<sup>19</sup> Intuitively, therefore, the effective intensity of CDFs *per voter* will vary across constituencies within a country as a result of malapportionment. [Table A7](#) documents the wide resulting variation in the allocation of CDFs per voter across constituencies in our sample. To isolate the effect of CDF allocations on relevant outcomes, we estimate:

$$y_{ijt} = \beta_1 \overbrace{CDF_{jt} \times (1/Voters)_{ijt}}^{\text{CDF per voter}} + \beta_2(1/Voters)_{ijt} + \delta_{jt} + \varepsilon_{ijt}, \quad (3)$$

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<sup>18</sup>We consider country-level effects using a simple difference-in-differences specification in [Table A19](#), but note this estimation is severely underpowered given the number of clusters (countries) used in the analysis.

<sup>19</sup>See [Table A6](#). The CDFs in Malawi, Sierra Leone, Uganda, Zambia, and Zimbabwe allocate an equal amount to each MP. The Kenyan and the Tanzanian CDFs involve some indexing on poverty and population, respectively. For Kenya, we use the fixed component of the allocation in our estimation (see [Appendix A.1](#)).

where outcomes in constituency  $i$  in country  $j$  in year  $t$  are regressed onto our measure of CDF intensity, which we compute by dividing the total CDF allocation to  $i$  in  $t$  by its number of registered voters in  $t$ .<sup>20</sup> We control for the inverse of the number of registered voters to isolate the effects of CDF intensity rather than electoral malapportionment more generally. In our baseline specification we add country-year fixed effects,  $\delta_{jt}$ , which absorb temporal and spatial differences between countries across elections. In additional, more demanding, specifications using the electoral data we also linearly add constituency-level fixed effects,  $\delta_i$ .<sup>21</sup> With the citizen survey data, where we estimate Equation (3) at the respondent-level, we additionally provide estimates controlling for the same vector of individual-level and enumeration-area covariates, such as age, education, and rurality, as used in Table 2. Standard errors are clustered by constituency throughout.

The combination of these fixed effects, while also controlling for  $1/Voters$ , means that we identify  $\beta_1$ , the key parameter of interest, leveraging only variation in CDF per voter assigned to a constituency within a country over time. We provide two placebo tests to validate our empirical strategy. First, in Table A15 we estimate  $\beta_2$  in Equation (3) using only our sample of countries which *do not* ever introduce a CDF. These null results suggest that any effects we observe are not just driven by variation in electoral malapportionment absent the presence of CDFs. Second, using the sample of countries which *do* introduce a CDF, in Table A16 we estimate effects on electoral outcomes in the last pre-CDF election as a function of CDF per voter in the first *post*-CDF election. This test suggests that our measures of CDF intensity are uncorrelated with pre-CDF electoral outcomes.

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<sup>20</sup>We provide estimates using both the levels of CDF per voter as well as  $\log(\text{CDF per voter}+1)$ .

<sup>21</sup>Such fixed effects additionally absorb all time-invariant constituency characteristics but, combined with the country-year fixed effects  $\delta_{jt}$  and the fact that both CDF allocations and voter registration numbers rarely change dramatically across-constituency between elections, imply that these specifications identify effects using a very small source of residual variation. Since our citizen survey data only samples a share of all constituencies in each survey wave, we are unable to use constituency-level fixed effects in these specifications.

## Electoral results

Table 3 estimates the effect of CDF intensity on the electoral performance of incumbents. We look at two indicators of electoral performance: whether the incumbent is reelected (panel A) and their vote shares unconditional on whether they run (panel B). Odd-numbered columns present the baseline specification of Equation (3) while even-numbered columns additionally add constituency-level fixed effects. We report  $\beta_1$ , the primary coefficient of interest.

**Table 3:** Effects of CDF intensity on incumbent electoral performance

	A. Reelected				B. Vote share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	0.002** [0.001]	0.002* [0.001]			0.001* [0.000]	0.001 [0.001]		
Log CDF per voter			0.091*** [0.034]	0.096** [0.046]			0.057*** [0.019]	0.049* [0.026]
Outcome mean	0.308	0.308	0.308	0.308	0.254	0.254	0.254	0.254
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituency FE		✓		✓		✓		✓
Constituencies	997	997	997	997	997	997	997	997
Observations	3523	3523	3523	3523	3523	3523	3523	3523

DVs: A. Incumbent is reelected; B. Incumbent vote share. Both outcomes are coded as 0 if incumbents do not seek reelection.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

The estimates in Table 3 show that variation in CDF allocation per voter improves the electoral prospects of incumbents and hence reduces turnover. In the baseline specification, an increase in this allocation by \$1 per voter increases the probability of incumbent reelection by 0.2 percentage points (pp) ( $p < 0.05$ ) and the unconditional vote share received by incumbents of 0.1 pp ( $p < 0.1$ ). Standardizing the treatment variable to facilitate interpretation suggests that a one standard deviation increase in CDF allocation per voter increases the incumbent's probability of reelection by 3.1pp

(10% effect size relative to outcome mean) and the incumbent's unconditional vote share by 1.4pp (6% effect size).

If we instead use the log-transformed treatment variable, this suggests that a doubling of the CDF allocation per voter increases the probability of their reelection by 8pp ( $p < 0.05$ ), reflecting a 30% effect size, and increases their unconditional vote share by 5pp ( $p < 0.01$ ), reflecting a 21% effect size. The addition of constituency-level fixed effects produces a similar set of point estimates albeit with slightly less precision due to the small residual amount of variation available to identify effects. Table A17 provides a battery of auxiliary specifications, including using a purchasing power parity-defined treatment measure, which consistently support the electoral benefits of increased CDF intensity.

In Table A18 we consider whether these improved electoral fortunes are driven by changes in the probability that incumbents seek reelection, or by their improved performance conditional on running, and find evidence for both channels being present. Last, in Table A19 we estimate the extensive margin effects of overall CDF introduction at the country-level using a difference-in-differences specification which compares electoral outcomes in constituencies in countries which do, versus do not, introduce CDFs before, versus after, their introduction. Since treatment at the country-level implies very few clusters for inference, these estimates are imprecise. Nonetheless, they are strongly consistent with those in Table 3 and suggest that the introduction of CDFs improves the electoral performance of incumbents.

## **Mechanisms**

These results leave open the question of how CDFs improve the electoral fortunes of incumbents. Consistent with our conceptual framework, discretionary funds assigned to incumbents might in-

crease the extent to which voters can observe, and attribute, the effort of their representatives and thereby change beliefs about their MP’s honesty and performance. Since this facilitates type revelation, the existence of positive average effects in Table 3 implies that incumbents are *on average* better than citizens’ pessimistic prior beliefs about them.

We provide additional evidence supporting this channel in two ways. First, we assess how variation in CDF intensity induces citizens to update their beliefs. Using the citizen survey data, Table 4 estimates  $\beta_1$  from Equation (3) focusing on the same set of variables as those in Table 2: how corrupt citizens consider MPs to be (panel A); how much they trust MPs (panel B); their approval of their MP (panel C); and whether they believe that voters are primarily responsible for ensuring that MPs do their jobs, as opposed to other political offices or parties (panel D).<sup>22</sup> Odd-numbered columns present the baseline specification while even-numbered columns add a vector of individual and enumeration area-level controls.

**Table 4:** Effects of CDF intensity on citizen beliefs

	<b>A. Corruption</b>		<b>B. Trust</b>		<b>C. Performance</b>		<b>D. Accountability</b>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	-0.021*** [0.005]	-0.016*** [0.005]	0.025*** [0.006]	0.012* [0.006]	0.007 [0.006]	0.005 [0.007]	0.006 [0.004]	0.006 [0.004]
Outcome mean	1.374	1.374	1.668	1.668	1.439	1.439	0.514	0.514
Outcome SD	0.738	0.738	0.986	0.986	0.894	0.894	0.500	0.500
Outcome range	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-1]	[0-1]
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓		✓
Constituencies	578	578	578	578	577	577	578	578
Observations	16800	16800	16447	16447	16077	16077	16357	16357

DVs: A. Perceived corruption of MPs; B. Trust in MPs; C. Performance of MPs; D. Voters are primarily responsible for MPs doing their job.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

<sup>22</sup>We provide auxiliary estimates using the log of CDF allocation per voter in Table A20, which are consistent with the baseline estimates in Table 4 but less precise.



The results provide support for our posited mechanism. In panel A, increasing CDF allocations by \$1 per voter reduces citizens' perceptions of corruption among MPs by 0.02 points ( $p < 0.01$ ) on a four-point scale. Standardizing both outcome and treatment variables to facilitate interpretation, a one standard deviation (sd) increase in CDF allocation leads to a 0.10 sd reduction in perceived corruption. Next, in panel B, a \$1 increase in CDF allocation per voter leads to a 0.025 point ( $p < 0.01$ ) increase in citizens' reported trust in MPs—equivalently, a one standard deviation increase in CDF allocations leads to a 0.09 sd increase in trust. In panel C, the estimated treatment effects on citizens' perceptions of MP performance are positive but statistically insignificant. Last, in panel D, CDF intensity increases the probability that voters consider themselves to be primarily responsible for ensuring that MPs do their jobs ( $p < 0.05$ ). Table A21, which splits the analysis according to whether a given enumeration area is classified as urban or rural, finds a similar pattern across both. The results suggest that increased CDF allocations strongly reduce the pessimistic beliefs of citizens regarding their MPs and parliaments more broadly.

Second, we assess whether the positive electoral benefits of CDFs also induce type revelation among incumbents—while incumbents are revealed to be better than citizens' perceptions *on average*, citizens are also better able to distinguish good incumbents from bad. We assess this implied heterogeneity by drawing on the same MP-level data from Kenya employed above, and fully interacting covariates with the regressors in Equation (3). Since politicians' overall quality is difficult to measure, we aggregate three measures drawn from the literature, each focusing on a different dimension of quality, into one index: (1) incumbents' participation in parliament, measured by the log of the number of speeches made (e.g. Adida et al. (2020)); (2) the share of their CDF they actually spent, often used as a proxy for politicians' effort (e.g. Ofosu (2019));<sup>23</sup> (3) the margin by which

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<sup>23</sup>Importantly, the share of CDF spent (between elections) both precedes, and is uncorrelated with, CDF intensity

they won their election in  $t$ , on the heuristic assumption that superior candidates might win office by larger margins (e.g. Stone et al. (2010)).

**Table 5:** Type revelation among Kenyan incumbents

	A. Reelected				B. Vote share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	0.002* [0.001]	0.002* [0.001]	0.000 [0.003]	0.008** [0.003]	0.001 [0.001]	0.001 [0.001]	-0.000 [0.001]	0.003 [0.002]
CDF per voter $\times$ Quality			0.003 [0.003]	0.012*** [0.004]			0.002 [0.002]	0.004* [0.002]
Outcome mean	0.326	0.326	0.278	0.271	0.272	0.272	0.229	0.222
Outcome SD	0.469	0.469	0.449	0.445	0.265	0.266	0.240	0.230
Constituency FE		✓		✓		✓		✓
Clusters	210	207	208	166	210	207	208	166
Observations	592	589	374	332	592	589	374	332

DVs: A. Incumbent is reelected; B. Incumbent vote share. Both outcomes are coded as 0 if incumbents do not seek reelection. Quality measured as an index of participation in parliament; usage of CDF; and initial election winning margin.

All specifications estimated using Equation (3) while interacting CDF per voter, the inverse of registered voters, and year fixed effects, with a measure of incumbent quality. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

Table 5 presents results where we interact CDF intensity with a standardized z-score index aggregating the individual indicators, while Table A22 presents results for the indicators individually. While the analysis is limited by statistical power—due to focusing on one country, and with incumbent-level data from only two elections—the results suggest that the electoral benefits of CDF intensity accrue particularly to higher-quality incumbents. The treatment effects, especially in the specification with constituency-level fixed effects, suggest that higher quality incumbents are more likely to be reelected when CDF intensity is greater. Disaggregating the indicators suggests that representatives’ prior engagement in parliamentary debates is the strongest predictor of the positive effects of CDF intensity for their reelection prospects.

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(defined immediately prior to the following election) in our sample.

## Alternative explanations

We consider three alternative explanations. First, CDFs could have direct economic effects on voters which induce them to support their incumbents. Second, it could be that voters observe the effects of CDFs but, because they struggle to attribute them specifically to their MPs, update more broadly about the political system—as a result, the electoral consequences among legislators are epiphenomenal. Third, because CDFs are often poorly monitored by central governments, increased CDFs might be used by incumbents to buy votes to stay in power. To assess these alternative explanations, some of which have divergent welfare implications, we again draw on geocoded citizen survey data from Afrobarometer.

To assess the first alternative explanation, focusing on the direct economic effects of CDFs, in Table A23 we estimate effects on respondents' evaluations of both their own, and the country's, economic condition. Across the different specifications, consistent with the fact that the absolute magnitude of CDFs per voter is often relatively small, we find no evidence that increased intensity affects these economic evaluations. To assess the second alternative, whereby voters observe the effects of CDFs but struggle to attribute them specifically to MPs, in Table A24 we estimate effects on the same set of outcomes as Table 4 but pertaining to *presidents* instead of MPs. These results suggest that CDF allocations per voter have no clear effects on citizens' beliefs about their president.

Last, in Table A25 we find limited evidence that citizens report increased exposure to vote-buying practices during election periods, though these questions do not ask about MPs specifically. These effects are inconsistent depending on the outcome variable we use, and small in magnitude. While this indicates that some of the maligned aspects of CDFs are also likely borne out in our sample, we note that if the main effect of CDFs is to increase exposure to vote-buying then the

attitudinal effects in Table 4 would be especially difficult to rationalize. Overall, we consider the consistent attitudinal effects in Table 4 to indicate that CDF intensity reduces turnover by improving the ability of voters to observe and attribute the efforts of their representatives.

## Conclusion

A growing theoretical literature considers how dysfunctions in democratic accountability can emerge and persist in weakly-institutionalized settings. In this paper, we have drawn out a set of empirical implications which underpin such accountability traps, which are defined by high rates of electoral turnover and the pessimistic, self-fulfilling beliefs of voters. Crucially, because these beliefs are partially constituted by voters' challenge of observing and discerning the effort of politicians, the existence of attributable policy instruments can play a significant role in fortifying accountability relationships. By bridging theoretical and empirical literatures, we provide a microfounded rationale for the "endemic discontent" facilitating high levels of turnover observed across many developing country settings (Molina, 2001).

Our evidence suggests that, in a set of parliamentary elections across 12 African countries, high rates of electoral turnover correlate with voters' pessimistic beliefs about corruption, while incumbency confers little electoral benefit aside from increasing the probability of subsequently seeking office. High turnover potentially has far-reaching welfare consequences, since it shortens time horizons for the passage of legislation, limits the consistency of policy implementation, and risks weakening parliamentary checks and balances vis-à-vis the executive branch. Consistent with the informational challenges of attribution underpinning voters' beliefs and such high rates of electoral sanctioning, we find that constituency development funds (CDFs)—a highly salient policy

innovation—significantly reduce turnover, especially among higher-performing incumbents, and improve voters’ beliefs.

Such policy instruments might help to address attributability problems, allow politicians to signal their type, make parliamentary careers more attractive, and improve the electoral performance of incumbents. Further, while we only study electoral consequences for incumbents, over a longer time period such instruments are likely to dynamically affect the pool of candidates seeking office which might further improve representation. Important limitations, however, are imposed by the challenge of monitoring misappropriation which have sometimes rendered these policies controversial. These concerns are rendered especially acute given the recent decisions of several countries to vastly expand the value of their CDFs—for example in Zambia, from \$90,000 to \$1.4 million per constituency per year; in Zimbabwe, from \$2 million to \$11 million per constituency per year (Lusaka Times, 2021; The Herald, 2021). While our results cannot speak to overall welfare and developmental effects, they suggest that such expansions are likely to have important benefits for democratic accountability subject to sufficient oversight.

In addition, our results pose broader institutional questions relating to the political economy of policy implementation. For one, we find overall positive effects on reelection rates (because incumbents are *on average* better than voters’ pessimistic beliefs), but that these effects are heterogeneous (because voters can also more easily discern the type of their representative). The existence of a set of incumbents who lose out from the introduction of such instruments implies that similar type-revealing policies might face challenges in uptake and compliance among representatives who fear negative returns to doing so. For another, our results raise questions relating to understanding whether, and when, executive-dominated regimes are incentivized to delegate authority over distribution. Further research on the political economy of policy attribution and voters’ beliefs about

their representation, therefore, is needed to inform optimal policy responses to such breakdowns in democratic accountability.

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# Online Appendix

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# A Supplementary Information

## A.1 Data construction

We summarize the countries used in the different analysis samples in Table A1 and explain their inclusion below.

**Table A1:** Sample of countries across different analyses

Country	Incumbency effects (Table 1)	Correlates of turnover (Table 2)	Selection and moral hazard (Tables A2, A3)	CDF effects: electoral (Table 3)	CDF effects: beliefs (Table 4)
Botswana	✓	✓	×	×	×
Côte d’Ivoire	✓	×	×	×	×
Ethiopia	×	×	×	×	×
Gambia	✓	×	×	×	×
Ghana	×	×	×	×	×
Kenya	✓	✓	✓	✓	✓
Liberia	✓	×	×	×	×
Malawi	✓	×	×	✓	×
Nigeria	✓	×	×	×	×
Sierra Leone	✓	×	×	×	×
Tanzania	✓	×	×	×	×
Uganda	✓	✓	×	✓	✓
Zambia	✓	✓	×	✓	✓
Zimbabwe	✓	✓	×	✓	✓

*Note:* Column (1) comprises the set of countries primarily using first-past-the-postvoting (FPTP) in parliamentary elections. ‘Incumbency effects’ corresponds to data employed in Table 1 and Table 2.

**Electoral Data.** Our electoral sample include race-level data from 12 countries: Botswana, Côte d’Ivoire, the Gambia, Kenya, Liberia, Malawi, Nigeria, Sierra Leone, Tanzania, Uganda, Zambia, and Zimbabwe. All these countries hold parliamentary elections with single-member constituencies and first-past-the-post (FPTP) voting, except Côte d’Ivoire which formally has a multi-member district (MMD) system, but where 170 (83%) of the country’s 205 constituencies have a single representative. We exclude the remaining 35 constituencies from the analysis. Other countries with similar electoral systems include Ghana, which we do not consider because significant redistricting across elections makes the construction of a consistent panel very difficult, and Ethiopia, for which constituency-level results are, to the best of our knowledge, not publicly available. Countries such as Guinea, Lesotho, Madagascar, and the Seychelles use a combination of single-member constituencies and proportional representation (PR),<sup>24</sup> while other African countries have not consistently used

<sup>24</sup>The National Assembly in Lesotho has 80 members elected in single-member constituencies and 40 members elected



FPTP.<sup>25</sup>

Matching constituencies over time, we construct a panel dataset of 6,255 observations (electoral races) at the constituency-year level across 12 countries and 2,310 constituencies. In this panel dataset, we identify incumbents through a systematic process of matching candidate names across consecutive elections and within constituencies. This process involves a semi-automatic step (using Stata's fuzzy match algorithm `reclink`) and a manual verification step for all completed matches and electoral races with no completed match.

In some elections, the performance of incumbents could be adversely affected by redistricting. These include the 1999 Malawian election (22 constituencies created relative to 1994), the 2007 Sierra Leonean election (switch from a multi-member district system to FPTP), the 2011 Liberian election (9 constituencies added relative to 2005), the 2013 Kenyan election (80 new constituencies created), the 2015 Tanzanian election (15 new constituencies created), the 2011 and 2016 Ugandan elections, and the 2016 Zambian election (6 new constituencies created). If redistricting undermines the attachment of a politician to a given territory and voting population, it could mechanically reduce electoral support received by incumbents. We do not find evidence in support of this. The average reelection rate falls to 31% after dropping the aforementioned elections from the sample, and the margin of victory of incumbents also decreases to 7.1%.<sup>26</sup>

**Afrobarometer.** Perceptions of MP corruption are measured on a 0-3 scale, based on answers to the following question: “How many of the following people do you think are involved in corruption, or haven’t you heard enough about them to say: Members of Parliament?”. Perceptions of MP performance are measured on a 0-3 scale, based on the question: “Do you approve or disapprove of the way the following people have performed their jobs over the past twelve months, or haven’t you heard enough about them to say: Your MP?”. Perceptions of MP trust are measured on a 0-3 scale, based on the question: “How much do you trust each of the following, or haven’t you heard enough about them to say: Parliament?”. Perceptions of MP accountability are measured using an indicator for whether respondents answer “Voters” in response to the question “Who should be responsible for: Making sure that, once elected, Members of Parliament do their jobs?”. This last question is

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via PR. Guinea had 38 constituency seats and 76 MPs elected via PR in 1995, 2002, and 2013. Madagascar uses a mix of single-member and two-member constituencies. The Seychelles’ National Assembly has 26 members elected via FPTP and 9 members elected via PR.

<sup>25</sup>For example, most countries in Southern Africa (e.g. Angola, Mozambique, Namibia, and South Africa) use closed-list PR. French-speaking countries use either PR (Burkina Faso, Niger), a two-round voting system (the Central African Republic, the Comoros, Congo-Brazzaville, and Mali), or a mix of PR and FPTP (Chad, DRC). Relatively small countries such as Benin, Burundi, Cape Verde, Djibouti, Guinea-Bissau, Mauritius, and Rwanda all use closed-list PR in multi-member districts.

<sup>26</sup>Throughout this analysis, the denominator used to calculate reelection rates is the number of seats in the outgoing parliament. As a result, the figures reported in Table A5 are interpretable as the fraction of incumbents who run (win), not the fraction of constituencies in which the incumbent run (win) reelection. In elections without redistricting, these two fractions are equal to each other.

only asked in round 3 and 4 of the Afrobarometer sample.

**Constituency Development Funds.** The Kenya data comes from the National Government Constituencies Development Fund (NG-CDF). Data for Malawi and Zambia come from National Budget Statements and Speeches. Data for Uganda and Zimbabwe come from a comparative study of CDFs ([International Budget Partnership, 2010](#)). We do not observe CDF amounts for Tanzania and Sierra Leone. Tanzania CDF amounts have not been publicly disclosed. The Sierra Leonean CDF was introduced after the last election included in our electoral sample (the 2012 election). Table A6 provides a summary of CDF rules in force in each country during the sample period.

**MP Demographics (Kenya).** In Appendix A.2, we use biographic data among Kenyan legislators from the non-profit and non-partisan *Mzalendo* project ([Mzalendo, 2018](#)). *Mzalendo* provides the following demographic information about all National Assembly Members elected since 2002: date of birth, date of first election in Parliament, education (degrees) received, and professional positions outside of Parliament. We use this data to create the following measures of politician characteristics: gender, age, experience in Parliament, and having past experience (prior to the first election in Parliament) in the public sector, private sector, NGO sector, research/academia, education, and military. In addition, [Mzalendo \(2018\)](#) provides indicators of parliamentary activity: namely the number of speeches made in Parliament on a monthly basis, and committee membership (since 2007).

**CDF spending (Kenya).** In Appendix A.2, we also use constituency-level data on CDF allocations and spending during the 9th and 10th Kenyan Parliaments (2003-2007 and 2008-2013) available from the Kenya Open Data Portal.<sup>27</sup> The sources of the data on CDF expenditure on projects are public expenditure accounts for 2002/3-2009/2010 and the Budget 2010/11 from the Kenyan Office of the Auditor General ([Kenya Open Data, 2018](#)). From this dataset, we use measures of aggregate CDF expenditure (in total and as a fraction of the yearly allocation) at the constituency-year level. The average fraction of the CDF allocation spent by MPs is 56% (st. dev. 22%).

## A.2 Selection and moral hazard among Kenyan MPs

In this section, we provide additional evidence on the self-fulfilling nature of voters' beliefs about their representatives. Specifically, using rich data on Kenyan MPs elected since 2002, we link turnover to the composition and the performance of the elected parliamentarians. High turnover

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<sup>27</sup>Available at <http://www.opendata.go.ke/>.

means that parliaments may fail to attract and retain high-quality politicians (a selection channel), and to incentivize MPs to perform well once in office (a moral hazard channel). We look for evidence of each channel, in turn, in this sample of Kenyan MPs.

**Table A2:** Selection into Reelection

	<b>A. Reelected</b>	<b>B. Vote share</b>	<b>C. Runs</b>	<b>D. Margin</b>
	(1)	(2)	(3)	(4)
Graduate education	0.018 [0.049]	-0.014 [0.025]	-0.112** [0.046]	0.089** [0.043]
Private sector experience	0.056 [0.050]	-0.005 [0.025]	-0.113** [0.044]	0.150*** [0.042]
Public sector experience	0.065 [0.049]	-0.006 [0.024]	-0.028 [0.046]	0.029 [0.039]
NGO sector	-0.046 [0.079]	-0.027 [0.040]	-0.105 [0.067]	0.072 [0.103]
Experience in Parliament	-0.003 [0.004]	-0.002 [0.002]	-0.010*** [0.003]	0.001 [0.004]
Parliament speeches (log)	0.039*** [0.014]	0.025*** [0.008]	0.024 [0.016]	0.028* [0.015]
Woman	0.157* [0.094]	0.034 [0.048]	0.084 [0.106]	0.021 [0.045]
Age	-0.008*** [0.003]	-0.003** [0.001]	-0.002 [0.003]	-0.005** [0.002]
CDF expenditure	0.020 [0.106]	0.062 [0.054]	0.045 [0.104]	0.090 [0.090]
Margin of victory (%)	0.079 [0.107]	0.108* [0.061]	-0.068 [0.092]	0.157 [0.099]
$R^2$	0.09	0.13	0.27	0.22
Outcome mean	0.301	0.241	0.658	-0.023
Observations	386	386	386	250

DVs: A. Incumbent is reelected in  $t + 1$ ; B. Unconditional incumbent vote share in  $t + 1$ ; C. Incumbent runs for reelection in  $t + 1$ ; D. winning margin of incumbent in  $t + 1$  conditional on running.

All specifications estimated from Equation (A1) including province and year fixed effects. The sample is composed of all Kenyan legislators elected in 2002 and 2007 and whose reelection performance is observed in 2007 and 2013, respectively. The data is constructed using Mzalendo (2018); see Appendix A.1 for details. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered by constituency.

First, using data from Mzalendo (2018), we estimate the nature of selection into incumbents' decisions to seek reelection. To examine this, we regress the decision to run for reelection on in-

cumbent characteristics, using the following equation:

$$y_{ijt} = \mathbf{X}'_{ijt}\boldsymbol{\beta} + \delta_j + \delta_t + \varepsilon_{ijt} \quad (\text{A1})$$

where  $i$  denotes constituency (incumbent),  $j$  denotes province, and  $t$  denotes an election year.  $\delta_j$  and  $\delta_t$  are province and election year fixed effects, respectively.  $\mathbf{X}_{ijt}$  is a vector of incumbent characteristics, including an indicator for MPs with a graduate education, professional experience in the public, private, or NGO sector, parliamentary activity (the log number of speeches made), and demographic characteristics (gender and age). The sample is composed of all Kenyan legislators elected in 2002 and 2007 and whose reelection performance is observed in 2007 and 2013, respectively. For characteristics that are either time-invariant or determined at baseline such as a politician's education level or previous professional experience, a positive (negative) correlation between these characteristics and entry decisions provides evidence of positive (negative) selection.

Table A2 presents the resulting OLS coefficients. The outcomes in this table mirror those in Table 1, i.e. we look at the probability of incumbent reelection (column 1), the unconditional incumbent vote share (column 2), an indicator for incumbents running for reelection (column 3), and the incumbent's (potentially negative) margin of victory, conditional on running (column 4). In columns 1 and 2, the most robust correlate of incumbent performance is the measure of parliamentary activity, namely the (log) number of speeches given during the outgoing parliament. In column 3, having a graduate education and experience in the private sector correlate *negatively* with the decision to stand for reelection. This is despite the fact that both these measures predict a better electoral performance conditional on running (column 4). The negative correlation between these measures of politician quality and the likelihood to seek reelection is particularly informative. Further measures of quality, such as the incumbent's initial victory margin to win office and the share of their CDF spent during their term, only weakly predict strong electoral performance in the subsequent election. Overall, these estimates suggest that there is negative selection into incumbent MPs' decisions to run for reelection, perhaps because high turnover makes parliamentary activity less attractive for politicians with superior outside options.

Next, providing evidence of moral hazard requires comparing politicians quasi-randomly exposed to different degrees of reelection incentives (Ferraz and Finan, 2011). Accordingly, we estimate the following regression discontinuity specification:

$$Y_{j,t+1} = \alpha + \tau T_{jt} + \beta_1 X_{jt} + \beta_2 X_{jt} T_{jt} + \varepsilon_{jt} \quad (\text{A2})$$

where  $T_{jt}$  defines the treatment ( $T_{jt} = 1$  means the incumbent was re-elected at time  $t$ );  $X_{jt}$ , the running variable, is the difference between the vote share of the incumbent and the vote share of her nearest challenger at time  $t$ , and  $\tau$  is the causal estimate of interest. We estimate equation (A2) using

the sample of Kenyan constituencies where an incumbent ran for reelection in either the 2002 or the 2007 parliamentary election. 150 out of the 324 incumbents who ran for reelection (46%) were successful. The dependent variable,  $Y_{j,t+1}$  is now the fraction of CDF money spent (yearly CDF expenditure divided yearly CDF allocation allocated to the constituency). The average fraction of CDF money spent across the sample is 56%. We present results pooling both election years (2002 and 2007). Standard errors are clustered at the constituency level. Finally, since this estimation relies on a relatively small sample we include year and province dummies in two specifications to increase the precision of the estimates.

**Table A3:** Test of moral hazard

	CDF expenditure (% spent)			
	(1)	(2)	(3)	(4)
Incumbency <sub><i>t</i></sub>	-0.145*	-0.260**	-0.197**	-0.297***
	(0.084)	(0.102)	(0.079)	(0.094)
DV mean	0.564	0.564	0.564	0.564
Bandwidth	0.213	0.229	0.183	0.223
Polynomial	1	2	1	2
Province fixed effects	No	No	Yes	Yes
Observations	324	324	324	324

DV: fraction of CDF spent.

All specifications estimated at the constituency level using Equation (A2). CCT MSE-optimal bandwidth used throughout. Running variable is the vote share of the incumbent minus the vote share of the closest challenger in the election at  $t$ . \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

Table A3 reports the results from this test. Across all specifications, the reelection of an incumbent MP decreases CDF spending by a substantively large magnitude. The fraction of CDF funds spent decreases by 15-20 percentage points in the local linear specification (columns 1 and 3) and by 26-30 percentage points in the quadratic specification (columns 2 and 4). Since there is growing consensus that CDF spending adequately captures effort (or performance) by sitting MPs (Keefer and Khemani, 2009; Bidwell, Casey and Glennerster, 2020), the estimates presented in Table A3 provide suggestive evidence of shirking on behalf of reelected incumbents.

# B Additional Figures

Figure A1: McCrary Test

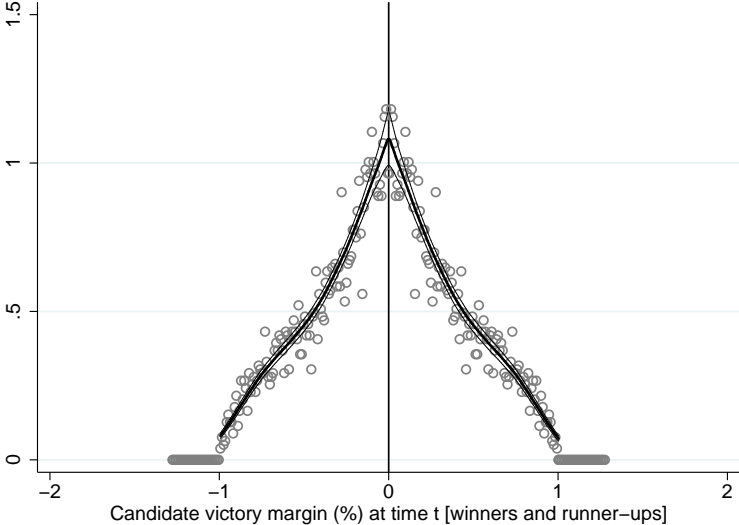
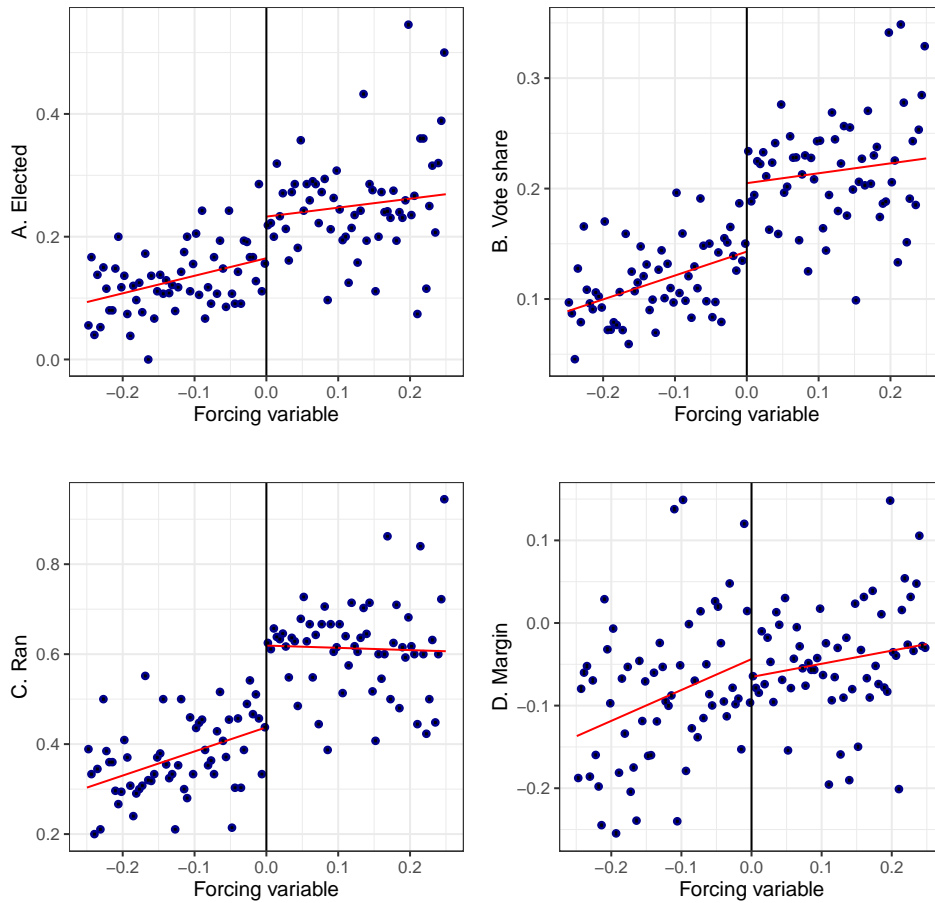


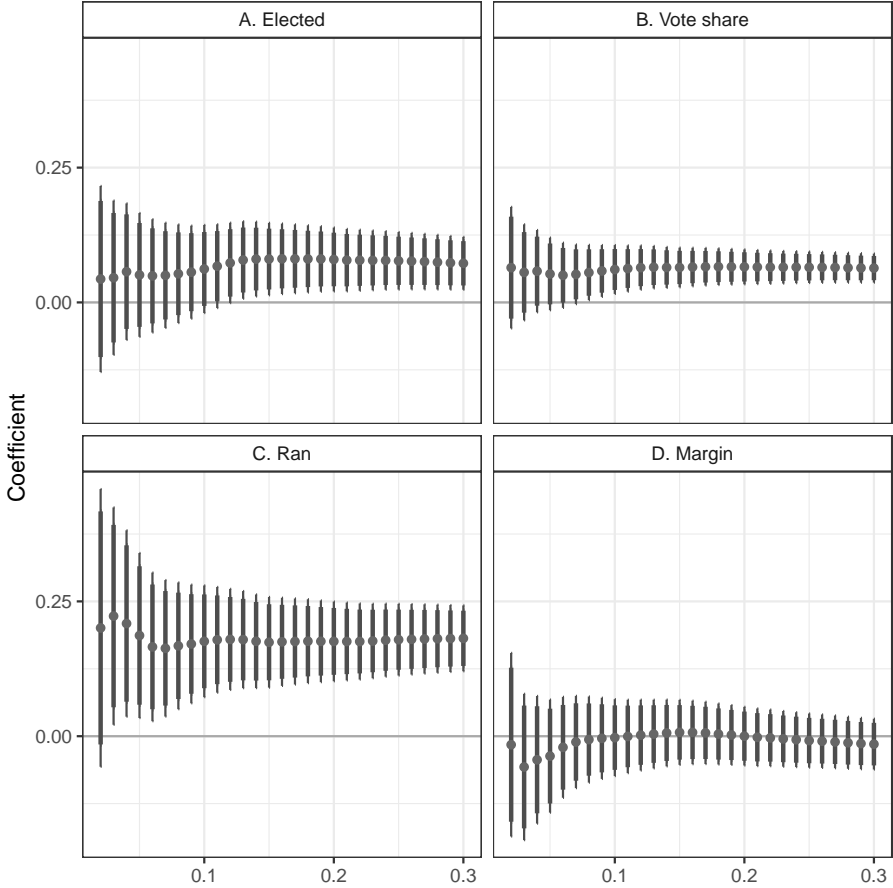
Figure plots the density of the running variable for the incumbency advantage estimation, which is the difference between the vote share of the winning candidate and the vote share of the runner-up. By construction this density is symmetric around 0 (the value of the running variable for the runner-up is minus 1 times the corresponding value for the winning candidate).

**Figure A2: Incumbency advantage plots**



Unit of observation is the candidate. X-axis in each plot is the forcing variable at time  $t$ . The top-left panel plots the likelihood of winning the  $t + 1$  election. The top-right panel plots the unconditional vote share received by the candidate in  $t + 1$ . The bottom-left panel plots the probability that the candidate runs again at  $t + 1$ . The bottom-right panel plots the victory margin of the candidate in  $t + 1$  conditional on running.

**Figure A3:** Estimates of the incumbency advantage (Bandwidth)



Estimates of treatment effect and 90% and 95% confidence intervals from Table 1 while varying bandwidth used for estimation.



## C Additional Tables

**Table A4:** List of parliamentary elections

<i>Country</i>	<i>Elections</i>	<i>Constituencies</i>	<i>Sources</i>
Botswana	2004, 2009, 2014	57	Independent Electoral Commission (IEC) [2014] Adam Carr's Election Archive [2004, 2009]
Côte d'Ivoire	2011, 2016	205	Commission Electorale Indépendante (CEI)
Gambia	2007, 2012	48	David Lublin's Election Passport [2012] Constituency-Level Elections Archive [2007]
Kenya	1997, 2002, 2007, 2013	210, 290	Independent Electoral and Boundaries Commission (IEBC) [2013] Adam Carr's Election Archive [2007] Electoral Commission of Kenya (ECK) [1997, 2002]
Liberia	2011, 2017	193	National Electoral Commission (NEC) [2017] Constituency-Level Elections Archive [2011]
Malawi	1999, 2004, 2009, 2014	193	Malawi Electoral Commission
Nigeria	2007, 2011, 2015	360	Independent National Electoral Commission [2015, candidates] Nigeria House of Representatives [2015, winners] Constituency-Level Elections Archive [2011] Adam Carr's Election Archive [2007]
Sierra Leone	2007, 2012	112	Constituency-Level Elections Archive
Tanzania	2010, 2015	238, 257	Constituency-Level Elections Archive [2015] Adam Carr's Election Archive [2010]
Uganda	2006, 2011, 2016	215, 238, 289	Electoral Commission of Uganda
Zambia	1996, 2001, 2006 2011, 2016	150	Electoral Commission of Zambia
Zimbabwe	2008, 2013	210	Adam Carr's Election Archive

**Notes:** Côte d'Ivoire has 205 parliamentary constituencies, out of which 35 are multi-member and 170 have a single representative.

**Table A5: Incumbent performance by country**

<b>Country</b> (1)	<b>Reelected (%)</b> (2)	<b>Vote share (%)</b> (3)	<b>Runs (%)</b> (4)	<b>Margin (pp)</b> (5)
Botswana	40.4	51.2	57.9	13.9
Côte d'Ivoire	22.9	36.3	48.2	-5.0
Gambia	40.6	65.0	50.0	8.4
Kenya	32.1	42.6	62.1	3.1
Liberia	32.2	24.0	75.3	-0.2
Malawi	28.0	36.2	67.3	-1.0
Nigeria	28.1	50.5	47.9	13.5
Sierra Leone	25.2	53.7	38.7	17.2
Tanzania	34.0	60.1	45.8	22.2
Uganda	43.3	46.7	74.9	6.3
Zambia	26.3	43.0	48.8	6.8
Zimbabwe	29.5	53.3	45.2	17.6
<b>Total</b>	<b>32.0</b>	<b>45.5</b>	<b>57.0</b>	<b>7.3</b>

*Note:* Column (2) shows overall incumbent reelection rates; (3) shows average vote shares received by incumbents; (4) shows average fraction of incumbents running for reelection; (5) shows average margin of victory of incumbents over their closest challenger in percentage points.

**Table A6: CDF rules by country**

<b>Country</b>	<b>Year Introduced</b>	<b>Allocation</b>	<b>Yearly Amount per constituency</b>	<b>Status</b>
Kenya	2003	75% Equal; 25% Indexed	≈ \$50k (2004) - \$720k (2012)	Active (2013 reform)
Malawi	2006	Equal	≈ \$14k (2007) - \$19k (2013)	Active
Sierra Leone	2013	Equal	≈ \$9k	Active
Tanzania	2009	25% Equal; 75% Indexed	≈ \$13k	Active
Uganda	2005	Equal	≈ \$6k	Abolished 2011
Zambia	1995	Equal	≈ \$11k (1995) - \$230k (2014)	Suspended 2016
Zimbabwe	2010	Equal	\$50k	Not renewed

**Table A7:** Variation in CDF allocation per voter across elections

Country	Year	Min	Max	Mean	N
Kenya	2007	4.72	91.58	22.57	207
Kenya	2013	22.57	266.08	71.07	290
Malawi	2009	0.49	8.36	1.68	192
Malawi	2014	0.72	13.10	2.83	192
Uganda	2006	0.04	0.99	0.14	215
Uganda	2011	0.12	3.63	0.57	238
Zambia	1996	0.46	4.51	1.61	150
Zambia	2001	0.38	4.60	1.67	150
Zambia	2006	0.01	3.40	1.39	148
Zambia	2011	5.16	55.14	20.45	148
Zambia	2016	4.91	80.46	22.14	156
Zimbabwe	2013	1.15	3.86	1.83	209

Summary statistics for CDF allocations (nominal USD) per voter in a given constituency in each of the post-CDF introduction elections in our sample.

**Table A8:** Balance tests

	$\tau$ (1)	SE (2)
Incumbent $_{t-1}$	-0.02	(0.03)
Ruling party $_t$	-0.02	(0.04)
Ruling party $_{t-1}$	-0.01	(0.04)

Table presents regressions of different pre-treatment outcomes defined at the candidate-level onto Equation (1).

**Table A9:** Estimates of the incumbency advantage (Polynomial)

	A. Elected			B. Vote share			C. Runs			D. Margin		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Incumbency $_t$	0.079*** [0.030]	0.084** [0.035]	0.078* [0.042]	0.066*** [0.016]	0.067*** [0.017]	0.067*** [0.021]	0.177*** [0.035]	0.173*** [0.039]	0.171*** [0.048]	-0.006 [0.026]	0.007 [0.031]	0.011 [0.036]
Outcome mean	0.199	0.199	0.199	0.168	0.168	0.168	0.438	0.438	0.438	-0.013	-0.013	-0.013
Bandwidth	0.201	0.329	0.375	0.207	0.372	0.452	0.232	0.402	0.450	0.239	0.352	0.443
Polynomial	1	2	3	1	2	3	1	2	3	1	2	3
Observations	8355	8355	8355	8353	8353	8353	8358	8358	8358	3648	3648	3648

DVs: A. Candidate is elected in  $t + 1$ ; B. Unconditional candidate vote share in  $t + 1$ ; C. Candidate runs for reelection in  $t + 1$ ; D. winning margin of candidate in  $t + 1$  conditional on running.

All specifications estimated at the candidate-level using Equation (1). CCT MSE-optimal bandwidth used throughout. Running variable is the vote share of the candidate in the election at  $t$  minus the vote share of the other top-two candidate at  $t$ . \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

**Table A10: Estimates of the incumbency advantage (Regime)**

	A. Elected		B. Vote share		C. Runs		D. Margin	
	(1) Democratic	(2) Not	(3) Democratic	(4) Not	(5) Democratic	(6) Not	(7) Democratic	(8) Not
Incumbency <sub>t</sub>	0.054 [0.035]	0.119** [0.052]	0.046** [0.019]	0.101*** [0.028]	0.158*** [0.039]	0.207*** [0.060]	-0.023 [0.033]	0.013 [0.041]
Outcome mean	0.199	0.199	0.168	0.168	0.438	0.438	-0.013	-0.013
Bandwidth	0.226	0.219	0.212	0.225	0.295	0.216	0.264	0.218
Observations	4996	3359	4996	3357	4998	3360	2233	1415

Sample split at the country-level based on the six most democratic regimes in the sample (Botswana, Kenya, Liberia, Malawi, Sierra Leone, Zambia) and the six most nondemocratic regimes (Cote d'Ivoire, Gambia, Nigeria, Tanzania, Uganda, Zimbabwe). DVs: A. Candidate is elected in  $t + 1$ ; B. Unconditional candidate vote share in  $t + 1$ ; C. Candidate runs for reelection in  $t + 1$ ; D. winning margin of candidate in  $t + 1$  conditional on running.

All specifications estimated at the candidate-level using Equation (1). CCT MSE-optimal bandwidth used throughout. Running variable is the vote share of the candidate in the election at  $t$  minus the vote share of the other top-two candidate at  $t$ . \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

**Table A11: Estimates of the incumbency advantage (Party)**

	A. Elected		B. Vote share		C. Runs		D. Margin	
	(1) Ruling	(2) Opposition	(3) Ruling	(4) Opposition	(5) Ruling	(6) Opposition	(7) Ruling	(8) Opposition
Incumbency <sub>t</sub>	0.169** [0.075]	0.006 [0.077]	0.089** [0.040]	0.066 [0.045]	0.150* [0.085]	0.168 [0.113]	0.011 [0.057]	-0.035 [0.063]
Outcome mean	0.199	0.199	0.168	0.168	0.438	0.438	-0.013	-0.013
Bandwidth	0.230	0.264	0.229	0.265	0.220	0.247	0.258	0.222
Observations	1696	637	1696	637	1696	637	784	247

Sample split at the candidate-level based on stable ruling parties (BDP in Botswana, PDP in Nigeria, CCM in Tanzania, NRM in Uganda, ZANU in Zimbabwe, KANU in Kenya) and stable opposition parties (BNF in Botswana, FDC in Uganda, MDC in Zimbabwe, CUF in Tanzania, ODM in Kenya). DVs: A. Candidate is elected in  $t + 1$ ; B. Unconditional candidate vote share in  $t + 1$ ; C. Candidate runs for reelection in  $t + 1$ ; D. winning margin of candidate in  $t + 1$  conditional on running.

All specifications estimated at the candidate-level using Equation (1). CCT MSE-optimal bandwidth used throughout. Running variable is the vote share of the candidate in the election at  $t$  minus the vote share of the other top-two candidate at  $t$ . \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

**Table A12: Correlates of incumbent turnover (urban and rural)**

I. Urban	A. Reelected				B. Vote share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Beliefs about MPs</b>								
Corruption	-0.017* [0.010]	-0.018* [0.009]	-0.015 [0.010]	-0.016* [0.010]	-0.011* [0.006]	-0.011** [0.005]	-0.008 [0.006]	-0.008 [0.006]
Trust	-0.008 [0.009]	-0.007 [0.008]	-0.003 [0.009]	-0.003 [0.009]	-0.005 [0.005]	-0.005 [0.005]	-0.002 [0.005]	-0.002 [0.005]
Performance	-0.002 [0.010]	-0.002 [0.010]	0.001 [0.011]	0.001 [0.010]	0.002 [0.006]	0.000 [0.006]	0.003 [0.006]	0.001 [0.006]
<b>Beliefs about president</b>								
Corruption			-0.009 [0.011]	-0.005 [0.010]			-0.007 [0.007]	-0.007 [0.006]
Trust			-0.009 [0.012]	-0.006 [0.011]			-0.009 [0.007]	-0.006 [0.006]
Performance			-0.014 [0.012]	-0.013 [0.012]			-0.004 [0.007]	-0.003 [0.007]
Outcome mean	0.353	0.353	0.353	0.353	0.255	0.255	0.255	0.255
Outcome SD	0.478	0.478	0.478	0.478	0.277	0.277	0.277	0.277
Clusters	301	301	301	301	301	301	301	301
Observations	3234	3234	3234	3234	3234	3234	3234	3234
<b>II. Rural</b>								
<b>Beliefs about MPs</b>								
Corruption	-0.015* [0.008]	-0.016** [0.007]	-0.015* [0.008]	-0.017** [0.008]	-0.006 [0.005]	-0.007 [0.005]	-0.003 [0.005]	-0.004 [0.005]
Trust	0.001 [0.008]	0.002 [0.008]	-0.004 [0.009]	-0.001 [0.009]	0.000 [0.005]	0.001 [0.005]	-0.002 [0.005]	-0.002 [0.005]
Performance	0.004 [0.010]	0.006 [0.010]	-0.000 [0.010]	0.002 [0.010]	0.003 [0.005]	0.004 [0.005]	0.001 [0.005]	0.002 [0.005]
<b>Beliefs about president</b>								
Corruption			0.003 [0.010]	0.005 [0.009]			-0.006 [0.005]	-0.006 [0.005]
Trust			0.008 [0.011]	0.004 [0.010]			0.003 [0.006]	0.002 [0.006]
Performance			0.012 [0.012]	0.011 [0.011]			0.005 [0.006]	0.005 [0.006]
Outcome mean	0.279	0.279	0.279	0.279	0.238	0.238	0.238	0.238
Outcome SD	0.449	0.449	0.449	0.449	0.265	0.265	0.265	0.265
Clusters	501	501	501	501	501	501	501	501
Observations	6203	6203	6203	6203	6203	6203	6203	6203

DVs: A. Incumbent is reelected in election following survey; B. Unconditional incumbent vote share in election following survey; C. Incumbent runs for reelection in election following survey; D. Winning margin of incumbent conditional on running in election following survey. All independent variables are standardized. ‘Corruption’: perceived corruption of MPs; ‘Trust’: trust in MPs; ‘Performance’: performance of MP; ‘Accountability’: respondent believes voters are primarily responsible for MPs doing their job. Panel I subsets to respondents in enumeration areas classified as Urban by Afrobarometer; Panel II to enumeration areas classified as Rural by Afrobarometer.

All specifications estimated at the respondent-level using Equation (2). Controls comprise a vector of individual-level and enumeration area-level variables. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-year level.

**Table A13: Correlates of incumbent turnover (Auxiliary)**

	A. Runs				B. Margin			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Beliefs about MPs</b>								
Corruption	-0.007 [0.007]	-0.006 [0.007]	-0.006 [0.008]	-0.005 [0.008]	-0.007 [0.006]	-0.009 [0.006]	-0.007 [0.006]	-0.009 [0.006]
Trust	-0.001 [0.007]	-0.001 [0.007]	0.002 [0.008]	0.002 [0.007]	-0.007 [0.007]	-0.005 [0.007]	-0.011 [0.007]	-0.010 [0.007]
Performance	0.004 [0.008]	0.003 [0.007]	0.004 [0.008]	0.003 [0.008]	0.007 [0.008]	0.007 [0.007]	0.004 [0.007]	0.004 [0.007]
<b>Beliefs about president</b>								
Corruption			-0.003 [0.007]	-0.003 [0.007]			0.002 [0.007]	0.001 [0.007]
Trust			-0.007 [0.009]	-0.006 [0.009]			0.008 [0.008]	0.008 [0.008]
Performance			0.000 [0.009]	0.000 [0.009]			0.008 [0.008]	0.008 [0.008]
Outcome mean	0.548	0.548	0.548	0.548	0.038	0.038	0.038	0.038
Outcome SD	0.498	0.498	0.498	0.498	0.314	0.314	0.314	0.314
Controls		✓		✓		✓		✓
Clusters	667	667	667	667	379	379	379	379
Observations	9437	9437	9437	9437	5213	5213	5213	5213

DVs: A. Incumbent runs for reelection in election following survey; B. Winning margin of incumbent conditional on running in election following survey. All independent variables are standardized. ‘Corruption’: perceived corruption of MPs/president; ‘Trust’: trust in MPs/president; ‘Performance’: performance of MP/president.

All specifications estimated at the respondent-level using Equation (2). Controls comprise a vector of individual-level and enumeration area-level variables. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-year level.

**Table A14: Correlates of incumbent turnover (Adding accountability)**

	<b>A. Reelected</b>		<b>B. Vote share</b>		<b>C. Runs</b>		<b>D. Margin</b>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption	-0.015*** [0.006]	-0.016*** [0.006]	-0.007* [0.004]	-0.007* [0.004]	-0.006 [0.007]	-0.007 [0.007]	-0.009 [0.006]	-0.009 [0.006]
Trust	0.001 [0.006]	0.001 [0.007]	-0.000 [0.004]	-0.001 [0.004]	-0.001 [0.007]	-0.001 [0.007]	-0.005 [0.007]	-0.006 [0.007]
Performance	0.003 [0.008]	0.003 [0.008]	0.003 [0.004]	0.003 [0.004]	0.003 [0.007]	0.003 [0.008]	0.007 [0.007]	0.006 [0.007]
Accountability		0.003 [0.007]		0.003 [0.004]		0.008 [0.007]		-0.002 [0.006]
Outcome mean	0.304	0.304	0.244	0.243	0.548	0.546	0.038	0.039
Outcome SD	0.460	0.460	0.270	0.270	0.498	0.498	0.314	0.315
Controls	✓	✓	✓	✓	✓	✓	✓	✓
Constituencies	667	667	667	667	667	667	379	379
Observations	9437	9230	9437	9230	9437	9230	5213	5078

DVs: A. Incumbent is reelected in election following survey; B. Unconditional incumbent vote share in election following survey; C. Incumbent runs for reelection in election following survey; D. Winning margin of incumbent conditional on running in election following survey. All independent variables are standardized. ‘Corruption’: perceived corruption of MPs; ‘Trust’: trust in MPs; ‘Performance’: performance of MP; ‘Accountability’: respondent believes voters are primarily responsible for MPs doing their job.

All specifications estimated at the respondent-level using Equation (2). Controls comprise a vector of individual-level and enumeration area-level variables. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-year level.

**Table A15: Placebo using non-CDF countries**

	<b>A. Re-elected</b>				<b>B. Vote share</b>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1/Voters	0.018 [0.016]	-0.072 [0.082]			0.012 [0.009]	-0.039 [0.048]		
Log 1/Voters			0.034 [0.044]	0.021 [0.190]			0.029 [0.027]	0.043 [0.123]
Outcome Mean	0.270	0.271	0.270	0.271	0.222	0.223	0.222	0.223
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituency FE		✓		✓		✓		✓
Constituencies	699	690	699	690	699	690	699	690
Observations	1446	1437	1446	1437	1446	1437	1446	1437

DVs: A. Incumbent is reelected; B. Unconditional incumbent vote share. Standardized coefficients reported for both 1/Voters and Log 1/Voters.

Table presents estimates of  $\beta_2$  in Equation (3) in the sample of countries which never introduce a CDF during the study period. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency-level.

**Table A16:** CDF intensity uncorrelated with pre-CDF electoral outcomes

	A. Re-elected		B. Vote share	
	(1)	(2)	(3)	(4)
CDF per voter <sub>t+1</sub>	-0.002 [0.003]		-0.001 [0.001]	
Log CDF per voter <sub>t+1</sub>		-0.104 [0.081]		-0.062 [0.045]
Outcome Mean	0.293	0.293	0.260	0.260
Country-year FE	✓	✓	✓	✓
Constituencies	748	748	748	748
Observations	748	748	748	748

DVs: A. Incumbent is reelected; B. Unconditional incumbent vote share.

Table regresses constituency-level electoral outcomes in the last pre-CDF election ( $t$ ) onto CDF intensity and the inverse of registered voters in the first post-CDF election ( $t + 1$ ) and country fixed effects. Sample restricted to countries which do introduce a CDF during the study period. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Heteroskedasticity-robust standard errors in parentheses.

**Table A17:** Robustness tests for Table 3: Alternative Specifications

	A		B		C		D	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	0.002** [0.001]		0.001* [0.001]		0.002** [0.001]		0.001** [0.000]	
Log CDF per voter		0.080** [0.032]		0.074** [0.036]		0.070*** [0.023]		0.060** [0.029]
Outcome Mean	0.297	0.297	0.297	0.297	0.297	0.297	0.295	0.295
Country-year FE	✓	✓	✓	✓			✓	✓
Constituency FE					✓	✓		
Constituencies	1687	1687	1687	1687	1687	1687	1687	1687
Observations	4960	4960	4960	4960	4960	4960	4754	4754

DV: Incumbent is reelected. Panel A: Baseline specification. B: control for second and third-degree polynomials of the inverse of registered voters. C: Effects estimated only using constituency-level fixed effects. D: CDF per voter defined in purchasing power parity USD instead of nominal USD.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.



**Table A18:** Effects of CDF intensity on incumbent entry and performance

	A. Incumbent runs				B. Margin			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	0.001 [0.001]	0.001 [0.001]			0.001* [0.001]	0.001 [0.001]		
Log CDF per voter			0.098*** [0.036]	0.098** [0.047]			0.033 [0.034]	0.025 [0.048]
Outcome mean	0.620	0.620	0.620	0.620	0.004	0.004	0.004	0.004
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Constituency FE		✓		✓		✓		✓
Constituencies	997	997	997	997	921	692	921	692
Observations	3523	3523	3523	3523	2171	1942	2171	1942

DVs: A. Incumbent runs for reelection; B. winning margin of incumbent conditional on running.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A19:** Extensive margin effects of CDF introduction

	A. Re-elected		B. Vote share		C. Incumbent runs		D. Margin	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF introduced	0.143 [0.099]	0.075 [0.090]	0.114 [0.083]	0.063 [0.076]	0.209 [0.192]	0.111 [0.176]	0.130*** [0.037]	0.145** [0.048]
Outcome Mean	0.30	0.30	0.24	0.25	0.56	0.57	0.04	0.02
Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Country FE	✓		✓		✓		✓	
Constituency FE		✓		✓		✓		✓
Countries	12	12	12	12	12	12	12	12
Observations	6253	5961	5909	5615	5909	5615	3242	2397

DVs: A. Incumbent runs for reelection; B. winning margin of incumbent; C. Incumbent runs for reelection; D. winning margin of incumbent.

Table regresses constituency-level electoral outcomes onto country (or constituency) fixed effects, year fixed effects, and a treatment indicator for whether a CDF scheme existed in that country in that year. Standard errors clustered at the country-level in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table A20:** Effects of Log CDF intensity on citizen attitudes

	<b>A. Corruption</b>		<b>B. Trust</b>		<b>C. Performance</b>		<b>D. Accountability</b>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log CDF per voter	-0.100 [0.065]	-0.076 [0.052]	0.181** [0.079]	0.070 [0.053]	0.048 [0.106]	0.046 [0.100]	0.024 [0.051]	0.038 [0.053]
Outcome mean	1.430	1.430	1.592	1.592	1.389	1.389	0.524	0.524
Outcome SD	0.756	0.756	0.993	0.993	0.894	0.894	0.499	0.499
Outcome range	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-1]	[0-1]
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓		✓
Constituencies	396	396	396	396	395	395	346	346
Observations	10044	10044	9847	9847	9771	9771	6909	6909

DVs: A. Perceived corruption of MPs; B. Trust in MPs; C. Performance of MP; D. Voters are responsible for MPs doing their job. Treatment variable defined as  $\log(\text{CDF per voter}+1)$ .

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A21:** Effects of CDF intensity on attitudes towards MPs (urban and rural)

	<b>A. Corruption</b>		<b>B. Trust</b>		<b>C. Performance</b>		<b>D. Accountability</b>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>I. Urban</b>								
CDF per voter	-0.026*** [0.009]	-0.023*** [0.008]	0.012 [0.011]	-0.000 [0.010]	-0.000 [0.012]	0.001 [0.012]	0.013 [0.008]	0.009 [0.008]
Outcome mean	1.419	1.419	1.518	1.518	1.383	1.383	0.508	0.508
Outcome SD	0.737	0.737	0.989	0.989	0.869	0.869	0.500	0.500
Constituencies	292	292	292	292	291	291	292	292
Observations	5600	5600	5474	5474	5259	5259	5463	5463
<b>II. Rural</b>								
CDF per voter	-0.016** [0.006]	-0.016** [0.006]	0.017** [0.008]	0.017** [0.008]	0.004 [0.007]	0.004 [0.007]	0.003 [0.003]	0.003 [0.003]
Outcome mean	1.352	1.352	1.743	1.743	1.467	1.467	0.517	0.517
Outcome SD	0.738	0.738	0.977	0.977	0.905	0.905	0.500	0.500
Outcome range	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-1]	[0-1]
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls								
Constituencies	475	475	475	475	475	475	475	475
Observations	11200	11200	10973	10973	10818	10818	10894	10894

DVs: A. Perceived corruption of MPs; B. Trust in MPs; C. Performance of MP; D. Voters are responsible for MPs doing their job. Panel I subsets to respondents in enumeration areas classified as Urban by Afrobarometer; Panel II to enumeration areas classified as Rural by Afrobarometer.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A22:** Type revelation among Kenyan incumbents (indicator-level)

	Reelected				Vote share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	0.002* [0.001]	-0.005 [0.003]	-0.002 [0.005]	-0.002 [0.004]	0.001 [0.001]	-0.001 [0.002]	-0.002 [0.002]	-0.001 [0.001]
CDF per voter × Log speeches		0.009*** [0.003]				0.003* [0.002]		
CDF per voter × High frac CDF			0.008 [0.009]				0.006* [0.003]	
CDF per voter × High margin				0.006 [0.011]				0.001 [0.006]
Outcome mean	0.326	0.280	0.280	0.280	0.272	0.230	0.229	0.230
Outcome SD	0.469	0.450	0.450	0.450	0.266	0.242	0.243	0.242
Clusters	207	175	173	175	207	175	173	175
Observations	589	350	346	350	589	350	346	350

DVs: A. Incumbent is reelected; B. Incumbent vote share. Both outcomes are coded as 0 if incumbents do not seek reelection.

All specifications estimated using Equation (3) while interacting CDF per voter, the inverse of registered voters, and year fixed effects, with a measure of incumbent quality. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A23:** Effects of CDF intensity on subjective economic evaluations

	A. Own living conditions				B. National economic conditions			
	Present		vs. a year ago		Present		vs. a year ago	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	-0.001 [0.013]	0.014 [0.012]	-0.015 [0.009]	-0.008 [0.010]	0.015 [0.016]	0.016 [0.016]	-0.015 [0.009]	-0.013 [0.010]
Outcome mean	2.529	2.529	2.843	2.843	2.462	2.462	2.807	2.807
Outcome SD	1.191	1.191	1.063	1.063	1.243	1.243	1.095	1.095
Outcome range	[1-5]	[1-5]	[1-5]	[1-5]	[1-5]	[1-5]	[1-5]	[1-5]
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓		✓
Constituencies	578	578	578	578	578	578	578	578
Observations	16754	16754	16723	16723	16651	16651	16587	16587

DVs: A. Respondent's evaluation of their living conditions (either at the time of the interview, or relative to 12 months prior); B. Respondent's evaluation of the country's economic conditions (either at the time of the interview, or relative to 12 months prior).

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A24:** Effects of CDF intensity on citizen attitudes towards president

	<b>A. Corruption</b>		<b>B. Trust</b>		<b>C. Performance</b>		<b>D. Accountability</b>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CDF per voter	-0.005 [0.005]	0.001 [0.005]	0.013 [0.009]	-0.005 [0.008]	-0.005 [0.007]	-0.015** [0.007]	0.003 [0.005]	0.004 [0.006]
Outcome mean	1.314	1.314	1.783	1.783	1.721	1.721	0.453	0.453
Outcome SD	0.823	0.823	1.070	1.070	0.951	0.951	0.498	0.498
Outcome range	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-3]	[0-1]	[0-1]
Country-year FE	✓	✓	✓	✓	✓	✓	✓	✓
Controls		✓		✓		✓		✓
Constituencies	578	578	578	578	578	578	301	301
Observations	15866	15866	16534	16534	16397	16397	4166	4166

DVs: A. Perceived corruption of president; B. Trust in president; C. Performance of president; D. Voters are responsible for president doing their job.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.

**Table A25:** Effects of CDF intensity on exposure to vote buying

	<b>A. Election incentives</b>		<b>B. Politician gifts</b>	
	(1)	(2)	(3)	(4)
CDF per voter	0.019** [0.009]	0.014* [0.008]	0.006 [0.013]	0.011 [0.013]
Outcome mean	0.539	0.539	2.340	2.340
Outcome SD	0.944	0.944	0.880	0.880
Outcome range	[0-3]	[0-3]	[0-3]	[0-3]
Country-year FE	✓	✓	✓	✓
Controls		✓		✓
Constituencies	530	530	299	299
Observations	11931	11931	4647	4647

DVs: A. How often respondent reports being offered something in return for their vote in the last election by a candidate or someone from a political party; B. How often respondent believes that politicians offer gifts to voters during election campaigns.

All specifications estimated using Equation (3). \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors clustered at the constituency level in parentheses.