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A Signaling Theory of Distributive Policy Choice: Evidence from Senegal

Jessica Gottlieb, Texas A&M University

Guy Grossman, University of Pennsylvania

Horacio Larreguy, Harvard University

Benjamin Marx, Sciences Po

A recent literature emphasizes political economy factors behind the wave of administrative splits across the developing world. While previous studies have focused on why some groups are more likely to obtain new administrative units, they do not explain why vote-maximizing incumbents use this arguably less efficient policy in the first place. We contribute to this literature by embedding administrative splits within incumbents' broader electoral strategy of distributive policies. We develop a model in which incumbents target local public goods to groups for whom this is a credible signal of commitment, namely, those with a history of reciprocal relationship. When incumbents face increased electoral competition, however, other groups require a stronger signal, which is emitted by the costly creation of new units that reduces the cost of future transfers to those groups. We test our theory using electoral and public goods data from Senegal and find robust support for its predictions.

In the past two decades, many developing countries have significantly increased the number of subnational units via splits (Grossman, Pierskalla, and Dean 2017). The ubiquity of this dramatic reorganization of the territorial structure of states has led to a growing body of work on the determinants of this policy. The current literature has rejected functionalist explanations of the creation of administrative units—those rooted in efficiency trade-offs—in favor of political economy explanations, which are generally based on the electoral benefits that splits confer on national incumbents (Pierskalla 2016a). We advance this line of reasoning by addressing a hitherto unanswered question: why do incumbents provide groups with new administrative units to begin with, instead of using other, arguably more efficient, distributive policies?

Previous work argues that national incumbents—especially those facing heightened electoral pressure—pursue such reforms to create local public sector employment that both co-opts local elites in newly created administrative units and provides patronage to low-level party functionaries (Green

2010; Hassan 2016), divides the power of the opposition (Mallesky 2009; Resnick 2014), reduces the bargaining power of the periphery vis-à-vis the center (Grossman and Lewis 2014), and increases the executive branch's control of parliament and the surveillance of the electorate (Hassan and Sheely 2017).

In addition to these advantages that the creation of new administrative units confers on the incumbent, past work has argued and empirically shown that incumbents facing electoral pressure are rewarded by voters from newly created units. Such voters strongly favor this policy because splits reduce their distance to the administrative unit's headquarters and because it increases local control over central government transfers (Grossman and Lewis 2014) or because targeted patronage steers the local economy (Hassan 2016). Incumbents have used this policy to especially target marginalized groups (Kimura 2012) that place a relatively high premium on new administrative units, due to a strong preference for self-governance in their homelands (Hassan 2016)

Jessica Gottlieb (jgottlieb@tamu.edu) is an assistant professor at the Bush School of Government and Public Service, Texas A&M University, College Station, TX 77843. Guy Grossman (ggros@sas.upenn.edu) is an associate professor in the Political Science Department, University of Pennsylvania, Philadelphia, PA 19104. Horacio Larreguy (hlarreguy@fas.harvard.edu) is an associate professor in the Department of Government, Harvard University, Cambridge, MA 02138. Benjamin Marx (benjamin.marx@sciencespo.fr) is an assistant professor in the Department of Economics, Sciences Po, 75007 Paris, France.

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or because the status quo contributes to their marginalization (Grossman and Lewis 2014).

While existing studies undoubtedly increase our understanding of the dynamics of administrative unit splits, we argue that they have not addressed the following core puzzle. Since increasing the number of administrative units is costly, and since the overall effect of such a policy on public service delivery is somewhat ambiguous (Pierskalla 2016a), why then don't incumbents who want to lure certain voters simply use an alternative electoral strategy—small preelection investments in local public goods and promises of a sustained increase in spending on those goods—that is highly valued by voters, arguably more efficient, and contributes unambiguously to development? In other words, past work has generally ignored the fact that incumbents have a menu of electoral strategies to sway voters, and it is not straightforward why they would choose to increase the number of administrative units rather than to adopt a different targeting strategy.

We address this gap by proposing a new theoretical framework, formalized in the appendix (available online), for understanding both the ubiquity and the differential use of administrative unit splits in the past two decades. Our starting point is that in low-information settings, voters search for signals to determine politicians' congruence. In settings characterized by weakly institutionalized and often nonideological political parties, congruence can be defined by the extent to which candidates will take the interest of constituents to heart while in office. In such settings, constituents generally do not have strong attachments to (nonprogrammatic) political parties and thus vote for the party or candidate that sends the most credible signal of congruence (Gottlieb and Larreguy 2016). All parties understand the importance of such signals, but incumbent parties are better positioned (relative to opposition parties) to use distributive policies strategically. In addition, when the level of electoral competition is sufficiently high, incumbents cannot simply rely on the votes of those constituents who traditionally supported them to win reelection.

Specifically, when facing increased political opposition in the run-up to the election, incumbents have two main policies to signal to voters (and perhaps more importantly, as we argue below, to their brokers in contexts where their coordination capacity determines how voters respond to policy) a future commitment to their welfare if they are reelected: (1) small investments in local public goods and promises of a sustained increase in spending on local public goods in the postelection period and (2) new administrative units.¹

1. Incumbents can employ additional strategies, such as power sharing (Francois, Rainer, and Trebbi 2015) or elites' appointments to ministerial positions (Arriola 2013). These alternative strategies operate at the

Incumbents prefer using local public goods, which are less costly, but face a problem of establishing credibility with some, but not all, brokers or the voters they coordinate.

We consider two group-level factors affecting the incumbent's choice of preelection distributive policies: (a) the coordination capacity of brokers and (b) the history of the incumbent party's targeting of a group, which affects the credibility of promises of sustained spending on local public goods. Within this framework, we formulate several hypotheses pertaining to the incumbent's policy choice. First, a vote-maximizing incumbent has an incentive to only target areas where brokers are strong enough to effectively coordinate votes around a single candidate. Second, when targeting groups with strong brokers, incumbents prefer to use promises of local public goods, but these promises are only credible when their party has a history of targeting local public goods to those groups. When dealing with groups who have strong brokers but lack such a history of targeting, the incumbent may need to invest in a new administrative unit to credibly signal future congruence.

The logic of this core hypothesis relies on the idea that an incumbent party is either unconditionally congruent, strategically congruent, or noncongruent with respect to each voter group. For those groups with whom it is unconditionally congruent, promises of local public goods are credible because the incumbent has already established congruence with the group, and renegeing on such promises would incur sufficiently high reputation costs. Among these groups, promises of local public goods are thus sufficient to sustain an exchange equilibrium, whereby the group maintains its electoral support for the incumbent who, in turn, continues targeting the group in the postelection period.

Conversely, for those groups with whom an incumbent is strategically congruent, the incumbent seeks to attract votes only when electoral contestation necessitates it. However, relatively small preelection investments in local public goods and promises of future transfers are not a sufficiently credible signal of postelection congruence. This is because both strategically congruent and noncongruent incumbents have incentives to use this relatively low-cost strategy, though only the latter have incentives to renege after the election. To credibly signal to voters that they are indeed strategically congruent, incumbents can invest in the creation of a new administrative unit, but this investment is costly. Key to our argument is the notion that, unlike public goods flows that can be phased in or out with relative ease, and unlike electoral promises that can be renegeed on at a relatively low reputational cost, the creation of an administrative unit entails (i) short-term upfront

national level, while in this project our interest is in spatial variation in targeting at a more local level.

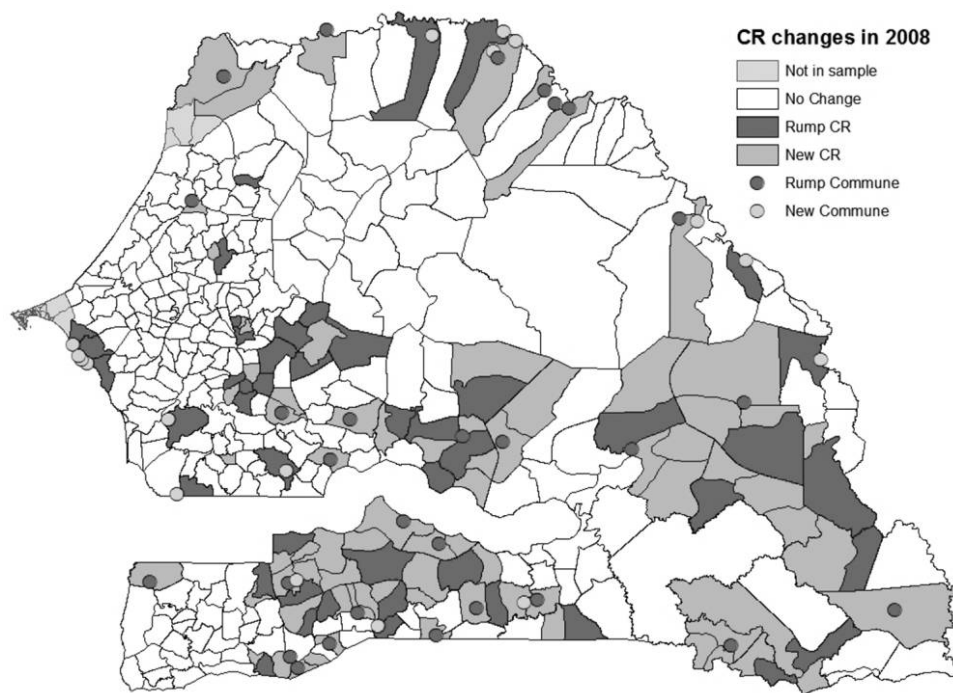


Figure 1. CR changes in 2008. “Not in sample” corresponds to Dakar and St. Louis urban areas

costs of setting up a new local administration, (ii) a reduction in the cost of providing local public goods to the beneficiary groups in the future, and (iii) an increase in stable fiscal transfers due to the relative stickiness of administrative boundaries and fixed unit-level outlays.

This variation in the ability of incumbents (relative to opposition parties) to send a credible signal of congruence leads to clear testable implications. First, incumbents should use different strategies vis-à-vis different types of groups in accordance with the argument outlined above. Second, members of groups targeted with new administrative units should update their beliefs regarding the incumbent’s congruence and thus increase their electoral support for the incumbent relative to nontargeted groups, namely, those groups who receive neither administrative units nor renewed promises of continued spending on local public goods. Third, administrative unit creation should be concentrated in settings where incumbents face genuine electoral competition.

We test these predictions using fine-grained original data from Senegal. Senegal provides an ideal context to study the strategic targeting of administrative splits and local public goods as well as voters’ responses to the differential targeting policies of incumbents for several reasons. First, Senegal is a young democracy exhibiting multiparty competition,² increased political contestation, and ample party switching and

group-level targeting (Koter 2013). Second, Senegal recently underwent a series of dramatic administrative unit changes. Following his reelection to a second term in 2007, President Wade of the Parti Démocratique Sénégalais (PDS) split a large number of low-level local governments, *communautés rurales* (or rural communities, henceforth CRs).³ By splitting existing CR units, Wade’s government created 62 new units in 2008 and 16 additional ones in 2010–11. These splits affected 18% of the country’s villages (counting only villages included in an entirely new CR), as reflected in figure 1 and appendix table A.5 (tables A.1–A.19 are available online).

In our empirical analysis, we find robust evidence in support of our model’s predictions. First, we show that the incumbent party is using different policies to target different groups. On the one hand, Wade’s administration is significantly more likely to target local public goods to a group with strong brokers and a strong track record of a reciprocal electoral relationship—the Mouride religious brotherhood

2. The Parti Démocratique Sénégalais (PDS) ended the long-ruling period of the Socialist Party (PS) in 2000 to lose power to the Alliance for the Republic (APR) in 2012.

3. These administrative unit changes took place in anticipation of the 2009 local elections when Wade expected significant electoral contestation despite the results of the February 2007 presidential election. Due to those surprising results, which the main opposition parties attributed to fraudulent rolls, an audit of the voter rolls was requested, which Wade refused. In response, the main opposition parties successfully boycotted the June 2007 legislative elections. Moreover, those parties formed a coalition to oppose the president’s party in a united front in the local elections of 2009, which represented a test of the real power of the opposition before the presidential elections of 2012.

(Boone 2003b). On the other hand, the incumbent is significantly more likely to grant new administrative units to an ethnolinguistic group with strong brokers but a weaker history of ties to the incumbent party: the Toucouleur (Beck 2008). Second, we demonstrate that administrative unit creation is an effective targeting strategy, driving a large increase in the electoral support for the PDS in villages receiving a new CR.

This paper makes several important contributions to the nascent yet growing literature on administrative unit splits in the developing world. Most importantly, we embed administrative splits within a larger political economy framework of distributive politics. Past studies have all advanced theoretical explanations of administrative unit splits that treat the policy in isolation from other policy instruments. This is problematic not simply because targeting policies are likely substitutes but also because previous accounts cannot explain why incumbents adopt a very costly distributive policy to begin with. Our paper contributes to the administrative unit splits literature by proposing a more general theory of policy choice. Specifically, we offer a novel argument that links administrative unit creation with the credibility of an incumbent's long-term commitment to local public service delivery. We further demonstrate the external validity of our theory in the last section of the paper, where we show that sub-Saharan African incumbent governments are more likely to engage in administrative unit creation when they face genuine electoral opposition, consistent with the logic of our theory.

This paper also contributes to the literature on the effect of growing electoral pressure in sub-Saharan Africa on the types of policies that incumbents adopt; such policies are generally visible, salient, popular, and easy to implement and can relatively easily be attributed to the incumbent (Harding and Stasavage 2014). Finally, it contributes to a body of work on the long-term effect of the administrative structures that were put in place by the colonizers of Africa (Englebert 2000).

THEORETICAL ARGUMENT

In this section, we develop our theoretical argument, which relies on the logic of a formal model presented in appendix C. We start by laying out several core assumptions about the nature of political competition and distributive politics in many low-income countries. We embed our discussion in the context of African politics, though we contend that our argument is relevant to other regions with poor information access and nonprogrammatic politics, where politicians exhibit congruence through targeted transfers and the availability of brokers that help coordinate groups of voters.

Though falling short of expectations, there is ample evidence that the introduction of multiparty elections in the early

1990s across Africa, and elsewhere, has incentivized national incumbents to adopt policies with a relatively wide appeal (Harding and Stasavage 2014). Political competition in many countries, however, exists alongside parties that are weakly institutionalized and, for the most part, nonprogrammatic (Riedl 2014). Importantly, contrary to some simplistic depictions of elections in Africa as “ethnic censuses,” a large share of voters are “uncommitted,” or nonpartisan.⁴ Furthermore, there are good reasons to reject the idea that voters care only, or even mostly, about petty clientelistic transfers (Casey, Glennerster, and Bidwell 2018). Instead, we assume that the majority of voters look for signals of incumbent congruence, as defined above. Given the nonprogrammatic nature of politics, this is manifested in the commitment of incumbents to making targeted transfers to particular groups of voters, such as local public services (Carlson 2015).⁵

Elections in Africa, however, take place in a low-information environment. This has important implications for the strategies of both voters and politicians. Voters have an incentive to follow cues from local opinion leaders (or brokers) when politicians reward bloc-voting villages—particularly when brokers have superior information regarding candidates’ “types” (Baldwin 2013) and a high capacity to coordinate voters around a single candidate (de Kadt and Larreguy 2018). Candidates therefore face strong incentives to signal to brokers that they will take the interests of their communities to heart once in office. Since, in the absence of a history of a reciprocal relationship, preelection promises are often not credible, candidates may need to send stronger signals of congruence to voters than preelection investments in local public goods. In this context, incumbents hold an advantage over challengers as they can use government resources to fund distributive policies that signal congruence to brokers and voters (Collier and Vicente 2012). A core assumption of this study’s theoretical argument is that different distributive policies emit signals of different strengths and that incumbents choose policies strategically, depending on the strength of the signal required to lure voters. In the appendix, we explicitly model the scope conditions under which incumbents seeking to convince particular groups adopt policies that send a more credible signal of future public goods provision.

4. Evidence on the extent to which voters are nonpartisan comes from voter reasoning surveys (Weghorst and Lindberg 2013) and from actual election data at the polling-station level from Benin, Liberia, and Senegal (Gottlieb and Larreguy 2016).

5. While this does not fit individualized forms of clientelistic exchange (e.g., Stokes 2005), it is related to Kitschelt and Wilkinson’s (2007) idea of “collective clientelism” in which parties target collective transfers to groups in exchange for electoral support. See also the work of Gingerich and Medina (2013) and Rueda (2016) in Brazil and Colombia, respectively.

Incumbents' targeting strategy

We consider a typology of voter-party linkages that vary with the extent to which parties are inherently unbiased, biased toward, or biased against a particular group.⁶ If parties are biased toward (against) a group, they get (dis)utility from targeting them; otherwise they are impartial. Parties can promise to provide costly public goods to voters if elected and incur a reputational cost if they renege. Given that they are costly, parties renege on promises of targeted goods only when they gain no inherent utility from targeting those voters. However, for groups they are biased toward, the utility they receive from targeting reverses this calculation, and parties will not renege. Incumbents are defined as unconditionally congruent with respect to those groups.

Voters initially face uncertainty about parties' types. A history of previous targeting of public goods toward a particular group reveals to this group that the incumbent is likely biased toward them, making promises of future transfers largely credible. However, voters who have not been previously targeted are unsure about whether the incumbent, and more generally opposition parties, are impartial or biased against them.

In a context of increased electoral contestation, an incumbent is likely to need to win over the support of groups of voters to whom it is impartial but had previously not targeted with local public goods at times of lower levels of contestation. The incumbent, we argue, has incentives to signal to those groups that it is strategically congruent. Small pre-election investments in local public goods and promises of a sustained increase in spending on those goods are insufficient to credibly signal congruence because the temptation to renege on those promises is high for both incumbents that are impartial or biased against the group. By contrast, we model the targeting of a new administrative unit to a group as a costly reduction to the cost of future local public goods provision to that group, which only impartial incumbents are willing to incur.⁷ As a result, incumbents with incentives to be strategically congruent can target administrative units to groups to whom they are impartial, thereby credibly signaling their congruence to them.

6. This bias could come from sharing ethnicity or kinship, or a similar regional background, as well as idiosyncratic reasons for which empathy or antipathy might develop between groups.

7. As demonstrated in the model, the incumbent will never target a group it is biased against with an administrative unit because the cost of creating a new administrative unit together with the later reputational cost of not fulfilling a promise to provide a local public good to the group are sufficiently large. This follows since an incumbent with an inherent bias against a group will always be noncongruent and renege on a promise even after a new administrative unit is created.

Importantly, the creation of new administrative units is a tool that only incumbents (but not opposition parties) can use to signal future congruence to a group. Opposition parties are thus constrained in their ability to credibly signal congruence to voters with whom they do not already have a reciprocal relationship. As such, voters might prefer to vote for the incumbent who has revealed herself to be strategically congruent (i.e., of an impartial type) rather than to take the risk of voting for an opposition party that is of uncertain type.

Given that the incumbent party only needs to mobilize a strict majority of votes to win, it will discriminate between groups that it targets with either renewed promises of continued spending in local public goods or administrative units. We posit that incumbents will naturally choose to target groups that are more electorally responsive. As we discussed above, a driving force of electoral responsiveness in the contexts we study is strong brokers that can coordinate votes in response to being targeted (Gottlieb and Larreguy 2016).⁸

This discussion generates the following testable hypotheses:

H1a. Strong-brokers targeting: Incumbents disproportionately target groups with strong brokers (i.e., those with relatively high coordinating capacity), compared to groups with weak brokers.

H1b. Strong-broker group with history of reciprocal exchange with the incumbent: Among strong broker groups, incumbents disproportionately target local public goods to those groups that they have targeted in the past. Members of such groups assume that the incumbent will continue to be electorally responsive, since preelectoral promises of future targeting are credible.

H1c. Strong-broker group with little or no history of reciprocal exchange with the incumbent: Among strong broker groups, incumbents disproportionately target administrative unit splits to groups that they have not previously targeted with local public goods. Incumbents cannot make credible preelectoral promises to members of such groups of a sustained increase in spending on those goods.

Voters' preference for administrative unit splits

Above we argue that granting a group a new administrative unit allows the incumbent to send a credible signal of post-

8. Notably, even in high information environments, voters have a hard time interpreting signals from the level of service provision in their locality (Clinton and Grissom 2015). Local opinion leaders thus play an important mediating function, in both high- and low-information environments.

election congruence to hitherto excluded groups. This relies on our assumption that an investment in an administrative unit is a reduction in the overall cost of future public goods provision to those groups.⁹ Building on the existing literature on administrative unit proliferation, and on knowledge gathered during qualitative fieldwork that we conducted in Senegal and from the local press,¹⁰ we briefly discuss some evidence of this, as well as the consequent preference by voters for being granted their own administrative unit (via splits).

First, in developing countries, which typically have low-capacity local governments, administrative unit splits unambiguously increase the administrative attention received by groups located in new units. Administrative attention captures the limited ability of local governments to service a large number of residents (especially given the in-person nature of the interaction between citizens and public officials) as well as the difficulty in servicing far-flung villages (e.g., monitoring, training, and stocking front-line public service points). Splits increase administrative attention by reducing the number of residents and villages that need to be serviced and the average distance between a local government's headquarters and the areas it serves. In other words, administrative unit splits limit how far a local civil service has to stretch its limited resources and bureaucratic reach to outlying (peripheral) villages.

Second, voters' preference for carving out their own administrative unit has generally increased following decentralization reforms, since the transfer of responsibilities and resources to subnational tiers of government makes the control of such units ever more consequential (Grossman and Lewis 2014). Especially where local governments are financed almost exclusively by central government transfers, consistent with our model, being granted a new local government entails a significant increase in fixed fiscal transfers to the groups located in the new units, especially given the relative stickiness of administrative boundaries compared to other policy instruments. In our empirical analysis, we provide evidence that groups in newly created administrative units in Senegal effectively experience a large and sustained increase in total and per capita financial transfers from the national government after their creation.

If new administrative units indeed represent credible signals of congruence, voters should electorally reward the incumbents granting those units, whose promises of a sustained

increase in spending in local public goods are now credible. Specifically, our theory generates the following hypothesis:

H2. New administrative unit: Groups that receive a new administrative unit (via splits) increase their electoral support for the incumbent in the next election.

While we have so far focused largely on the preferences of groups of voters, here we discuss the within-group variation with respect to preferences over administrative unit splits. Since low-capacity governments can pay more attention to villages located close to their headquarters, more distant areas benefit most from such splits. This is because, for these areas, splits decrease villagers' traveling distance to the local government headquarters (Grossman and Lewis 2014) and help the local economy (Hassan 2016). Indeed, for both political and practical reasons (most power brokers and public services are located in or near the local government's headquarters), the value of a new administrative unit increases the further one resides from the old local government's headquarters.

Naturally, residents in "rump" areas (i.e., the part of an original administrative unit that remains after a new one is created), will have, on average, lower utility for a split than the residents of a new administrative unit. Leaders in rump areas may oppose splits because they lose control over a large share of the territory of their constituency and may be subject to earlier reelection. Additionally, our theory suggests that decreasing costs to future public goods provision for one group via a new administrative unit might consequently reduce the likelihood that other groups are targeted with local public goods. We argue, however, that the preference for splits in rump areas is strongest where the expected benefits from increased attention are largest—that is, villages located furthest from the old administrative unit's headquarters. The above discussion leads to an additional hypothesis:

H3. Groups in rump areas and distance to headquarters: Voters from groups in rump administrative units perceive fewer benefits from splits compared to those receiving a new local government and thus vote for the incumbent at lower rates. Among the former groups, electoral reward to the incumbent post-split increases with distance to the local government's headquarters.

In addition to signaling congruence to voters, administrative unit splits could also increase the surveillance of (and ability to mobilize) the electorate. In both cases, we would expect splits to increase the incumbent's vote share more than would be expected in response to immediate transfers of goods.

9. This reduction can be either monetary or "political," e.g., allowing better targeting to groups that are discriminated against as a minority in a previously large administrative unit.

10. See the appendix for further qualitative evidence in support of our assumptions and, more generally, our theoretical argument.

In our empirical findings, we provide evidence that adjudicates between these alternative explanations.

Scope conditions

Our theory suggests that incumbents will only use the costly tool of an administrative unit split to signal congruence when they face electoral incentives to do so. We thus expect to observe more administrative unit creations following an increase in electoral competition. Another implication of the model is that greater uncertainty about whether opposition parties will be noncongruent with respect to specific groups will cause voters from groups targeted by a new administrative unit to support the incumbent they have learned is strategically congruent and whose promises of local public goods are credible. In polities with high ethnic fractionalization, we expect greater uncertainty over the alignment between parties and voters. As such, we expect that competition should be especially likely to generate administrative unit proliferation in places with higher levels of ethnic fractionalization.

POLITICAL AND SOCIAL CONTEXT

In this section we provide the necessary background on political and administrative decentralization in Senegal to contextualize the distributive policy choice faced by the incumbent and apply our theory of differential targeting by group type to distinct ethnoreligious groups in Senegal. Senegal offers an ideal context in which to study incumbents' strategic use of different distributive policies and the effects of administrative unit creation on electoral outcomes. First, social and religious groups in Senegal have brokers with varying degrees of voter coordination capacity (Gottlieb 2017). Second, political competition in Senegal is increasingly high.¹¹ Third, Senegal recently witnessed a series of widespread administrative-unit splits: about 20% of villages were affected by splits in 2008 alone; a preelection year. Fourth, the president of Senegal has almost total control over splits, which allows us to better focus on targeting as opposed to analyzing splits that reflect voters' choice. Fifth, Senegal makes available fine-grained data at a very disaggregated level—village or polling station—over time, which allows us to improve on identification strategies used in previous studies, as explained below.

11. While Senegal legalized multiparty competition in 1990, electoral competition was hampered by the ruling party's control over the electoral process. In 2000, the first democratic transfer of power (from the PS to Wade's PDS) took place.

Decentralization in Senegal: Historical and legal aspects

With the exception of a few major cities, Senegal did not have formal local governments until 1972 and did not elect local representatives with executive power until 1990. Since the 1990s, however, the pace of decentralization has increased dramatically. A 1992 law established regions as a new tier of government, and a 1996 reform transferred executive powers to regions and to three lower local government tiers: towns (*communes*), municipalities within the country's five largest cities (*communes d'arrondissement*), and CRs.¹²

The 1996 law provided the regulatory framework for administrative unit splits during the period covered in this study. Though the creation of new CRs was subject to the advisory opinion of regional councils, it ultimately entered into force only through a government decree signed by the president or prime minister who were not liable to provide justifications for splits.¹³ And, while the law also stated that prior to changes in administrative boundaries, the opinion of "all interested rural councils, municipal councils, and regional councils [was] required," it was not explicitly binding. In 2010, the minister in charge of decentralization stated that "the government can reserve the right to create a commune, a rural community, a region or a département wherever it deems necessary" (*Le Soleil*, October 2010).¹⁴

Social setting

Existing narrative accounts describe two culturally distinct groups in Senegal—the Mouride religious brotherhood and the ethnic Toucouleur—as having notably influential local leaders that serve as vote brokers (Beck 2008; Boone 2003b). Gottlieb (2017) shows empirically that villages with higher con-

12. Most of the literature has viewed these reforms as furthering the interests of the "PS state" because they strengthened local patronage networks. Boone (2003a), for example, argues that Senegal's decentralization was part of an institution-building strategy of power sharing that allowed both the central government and local elites to extract more rents. Nevertheless, others (e.g., Dahou and Foucher 2009) have argued that decentralization triggered a de facto dispersal of resources that made it easier for opposition parties to emerge—including Wade's PDS, which in many areas was able to successfully capture the PS clientele. A more recent reform (2014) suppressed regional councils, transferred more powers to the *départements*, and harmonized the status of towns and CRs to create a single *commune* status.

13. Article 193 du Code des Collectivités Locales de 1996.

14. Following a split via government decree, rural councils were legally dissolved and the CR would be administered by a "special delegation" until local elections could be organized. The automatic removal of local elected officials regularly triggered conflicts. For example, the military had to be deployed to install the "special delegation" in Chérif Lo, and in Mbane councilors went on a hunger strike to express their opposition to a split (*Sud Quotidien*, May 24, 2011).

centrations of these groups are more likely than other villages to coordinate votes. While both groups have relatively strong brokers with high vote-coordinating capacity, they are distinct in their prior history of a reciprocal relationship with Wade's PDS. As we explain below, the Mouride resemble a strong broker group with a history of a reciprocal relationship with the incumbent; the Toucouleur resemble a strong broker group without such a history.

There are two dimensions along which these groups differ—shared identity and economic autonomy—that help explain the differential history of reciprocity with the incumbent party in Senegal and can serve as potential predictors to consider when generalizing to other cases. First, coethnicity and coreligiosity are frequently cited as drivers of a reciprocal relationship with politicians either because shared identity serves as a heuristic for candidate quality in information-poor contexts (Conroy-Krutz 2013) or because it triggers expectations of favoritism (Chandra 2004). Second, economic autonomy can support a reciprocal political relationship, though this is somewhat less intuitive. For electoral reciprocity to precede an incumbent's rise to power or continue after he loses an election, voters and their brokers must be willing to be in the opposition, at least temporarily. While not explicitly modeled in our theory, we argue that economic autonomy—that is, less reliance on the government for economic well-being—can make a group take a long view and support opposition candidates or parties and thus sustain reciprocal relationships outside an incumbent's reign.

The Mouride—the second largest Sufi brotherhood in Senegal—are generally considered the most loyal partisans of Wade.¹⁵ This is, in part, due to Wade's membership in the Muslim brotherhood and to the public attention he lavished on the brotherhood's influential leadership (Resnick 2013). In addition, the Mouride's strong political brokers have traditionally been the most economically autonomous from the state (Beck 2008; Boone 2003b).¹⁶ The Mouride thus have greater capacity than other groups to support an opposition candidate, which they did in the 1993 elections when many of their religious leaders supported Wade's PDS (Beck 2008). Further, after the fall of the PDS from presidential power in 2012, the 2014 local elections saw continued support for the PDS in both the Mouride holy city of Touba and the prov-

ince of Mbacké in which it is located. Notably, the region that is home to these two places is the only one of 14 where Macky Sall's 2016 referendum was voted down; as PDS leaders encouraged this “no” vote as a plebiscite on Sall's presidency, the Mouride were again squarely in the opposition (Kelly 2016).

Turning to the Toucouleur, both Boone (2003b) and Beck (2008) explain broker strength, and thus vote coordinating capacity, among the Toucouleur as deriving from a hierarchical social structure enshrined in a caste system. In contrast to the Mouride, Beck (2008) identifies these brokers as “dependent” upon the incumbent regime because they have access to fewer resources. The Toucouleur thus have less autonomy to form loyalties to any particular political party and must instead negotiate opportunistically for credible promises of transfers, generally from a strategically congruent incumbent. Their unwillingness to join the opposition is evidenced by the relatively high level of electoral support in 2000 for the outgoing incumbent party (PS) in the most densely Toucouleur province, Matam (71%), compared to the relatively high level of support for the opposition (PDS) in the most densely Mouride province, Mbacké (63%).

EMPIRICAL FRAMEWORK

We turn to describe our empirical strategy for three analyses: (a) the effect of CR splits on central government transfers, (b) the relationship between distributive policy targeting and group identity, and (c) the effect of CR splits on the incumbent's vote share.

New CR creation effects on central government transfers

We begin by testing whether, consistent with the model's implications and voters' expectations described above, administrative unit splits entail an increase in future financial flows for affected communities. To that end, we focus on CRs as the unit of analysis and use, as a dependent variable, data on transfers from the central government to CRs for the period 2007–14, which we obtained from the Division for Local Governments (Direction des Collectivités Locales), of the Senegalese Ministry of the Interior. Our main measure of transfers aggregates two types of financial flows: (1) current expenditures and (2) long-term investment projects.¹⁷ Using these data, we run the following fixed-effects specification:

$$\text{Transfers}_{ijt} = \alpha + \beta \text{Split}_{jt} + \eta_j + \delta_t + \varepsilon_{ijt}, \quad (1)$$

17. Further details on this data set are provided in app. A.

15. The Toucouleur belong almost entirely to the largest brotherhood, known as Tidjane, making these categories nearly mutually exclusive.

16. O'Brien (1975) attributes the strength of Mouride leaders to their status as the dominant local authority structure following the collapse of the precolonial state. During and after colonization, Mouride religious leaders or *marabouts* were the main intermediaries between the peasants of Senegal's populous groundnut basin and the state.

where Transfers_{ijt} denotes per capita transfers received by CR i contained in old CR j , in year t (measured in levels and in logs), Split_{jt} is a dummy for split CR (at the level of old CR j), η_j are old CR j fixed effects, and δ_t are year fixed effects. Standard errors are clustered at the level of the old CR j . We cannot include CR fixed effects η_i in this specification since transfers are not observed at the level of rump and new CRs prior to splits.

We are further interested in testing whether transfers vary between rump and new units after a CR split. We use New to indicate a new CR in 2008, and Rump to denote a post-split CR under the old CR headquarters in 2008. We then estimate the following regression:

$$\text{Transfers}_{ijt} = \alpha + \beta_1 \text{Split}_{jt} \text{Rump}_{ijt} + \beta_2 \text{Split}_{jt} \text{New}_{ijt} + \eta_j + \delta_t + \varepsilon_{ijt} \quad (2)$$

Targeting: Different strategies for different groups?

In our second analysis we test the study's main targeting hypotheses: that incumbents are less likely to target groups with weak brokers (hypothesis 1a) and that the history of reciprocal exchange conditions the targeting policies—local public goods or new administrative units—that incumbents adopt toward groups with strong brokers (hypotheses 1b and 1c).

Early pioneering work on the determinants of administrative unit splits (e.g., Green 2010) erroneously used the unit that split as the unit of analysis.¹⁸ Later work conducted its analysis at one level below the unit that splits (e.g., Grossman and Lewis 2014; Hassan 2016). While an improvement, this approach also suffers from problems since the boundaries of the cluster of villages that form new units are potentially endogenous. By using a unit that is stable over time—villages—we are able to control for selection into splitting status, as well as differential trends between splitting and stable units.

Our main dependent variables are (1) assignment to a new CR and (2) change in local and national public goods. For the first dependent variable, our analysis is restricted to the creation of 74 new CRs (from a baseline of 314, a 24% increase) that took place in 2008, which represents the starkest and (empirically cleanest) episode of administrative-unit creation in Senegal's recent history, directly affecting 1,627 of a total of 10,763 villages (table A.5).¹⁹ Turning to the second set of dependent variables, we use $\Delta\text{Local Goods}$ to measure changes in the provision of five locally administered pub-

lic goods (clean water, primary schools, primary health centers, rural roads, and local markets) between 2000 and 2009. While local public goods are more excludable—and thus more likely to be targeted to specific areas—we also create the variable $\Delta\text{National Goods}$ using three goods administered at the national level: telephone networks, electricity, and paved roads. Public goods data are derived from village surveys conducted by the Senegalese National Statistics Agency in 2000 and 2009 and contain information about whether each type of public good is provided in each village. Using these data summarized in table A.7, we create a local public goods index and a national public goods index for each year, which sum the binary access indicators for each set of public goods.

To test our differential targeting hypotheses, we group villages into three categories: Mouride, Toucouleur, and Other.²⁰ We classify a village as Toucouleur or Mouride if over 50% of a village's population share is reported to belong to that group according to the 2002 Senegalese census.²¹

We then estimate how an incumbent's distributive policy choices—the creation of a new CR, and the provision of national and local public goods—correlate with the social composition of villages. Formally, we run the following specification:

$$\text{Policy}_{vct} = \alpha + \beta_1 \text{Mouride}_{vc} + \beta_2 \text{Toucouleur}_{vc} + \varepsilon_{vct}, \quad (3)$$

where Policy_{vct} indicates whether a specific policy was implemented in village v located in old CR c , Mouride_{vc} and Toucouleur_{vc} , respectively, indicate whether more than half of the village's population self-identified as Mouride and Toucouleur. The terms β_1 and β_2 are the two coefficients of interest; we cluster standard errors at the CR level. Building on the theoretical framework presented above, β_1 is expected to be positive when examining change in public goods provision, since the Mouride have both a high coordinating capacity and a long history of reciprocal exchange with the incumbent. The term β_2 is expected to be positive when examining new CR creation, since the Toucouleur have a high

18. See critique in Grossman and Lewis (2014, 200).

19. While a few CRs (16) were also created between 2010 and 2011, these affected a relatively small number (317) of villages and they might have also led to increased public goods provision before the 2012 election.

20. "Other," a catch-all social grouping, serves as the omitted category in all regression analysis. Table A.1 introduces the population shares of the main ethnic and religious groups, as well as the corresponding shares for the grouping we use for this analysis.

21. We combine the Toucouleur with the Peul and Pulaar groups, as these self-reported census categories commonly overlap. Table A.16 shows robustness to considering only Toucouleur and Peul or only Toucouleur and Pulaar groups. Table A.17 indicates that our results are also robust to using different population share cutoff points (e.g., 60%, 70%, or 80%, rather than 50%).

coordinating capacity but no history of reciprocal exchange with the incumbent.

Electoral returns to the creation of new CRs

Finally, we estimate the electoral consequences of CR creation. Specifically, we test whether areas that receive a new CR increase their electoral support for the incumbent in the next election (hypothesis 2), relative to all other areas. We also test whether within rump areas, those residing further from the CR headquarters should show a relatively larger support for the incumbent after being carved out (hypothesis 3).

Our dependent variable, $\Delta\text{Incumbent}$, measures the Change in the vote share of Wade's PDS, from the pre- to the post-split period. Electoral outcomes are measured at the polling station level and computed using data from Senegal's Independent National Electoral Commission. Incumbent is defined as PDS vote share.

Past studies have argued that splits are designed to increase government presence at the grassroots level and thereby increase the surveillance required to mobilize the electorate. Thus, we also construct a measure, Turnout, defined as the number of valid votes divided by the total number of registered voters. We use the change in this outcome variable to adjudicate between our hypotheses and this alternative explanation. Summary of these election outcomes can be found in the table A.6.

Our key independent variables—New and Rump, defined above—capture changes in a village's CR status over time, focusing on CR splits that took place in 2008. Given that we are interested in the change in Wade's PDS vote before and after 2008, we also define a period indicator Post_t , which captures the elections after 2008. In our baseline specification, we restrict to the two major elections that took place in a relatively short time span (2007 and 2009) around the 2008 splits. This reduced time frame limits the possibility that other confounding policies—for example, major public goods—took place at the village level between the creation of new CRs and the subsequent election. We also test robustness to comparing pre- and post-split elections for CR councilors (Δ from 2002 to 2009).

In order to test hypothesis 3, we further create a continuous measure of Distance to CR headquarters prior to 2008, using village geographical coordinates published by the Senegal National Statistics Agency. We do not include measures of distance from a new CR headquarters in our estimation, since they are posttreatment.

We are interested in the causal effect of administrative unit creation, which is an endogenous distributive policy. To test this main implication of our theory while controlling for

selection into administrative splits, we estimate the following difference-in-differences model:

$$\begin{aligned} y_{vct} = & \alpha_0 + \alpha_1 \text{Dist}_{vc} + \alpha_2 \text{New}_{vc} \text{Dist}_{vc} + \alpha_3 \text{Rump}_{vc} \text{Dist}_{vc} \\ & + \alpha_4 \text{New}_{vc} + \eta_c + \text{Post}_t \\ & + \beta_1 \text{Dist}_{vc} \text{Post}_t + \beta_2 \text{New}_{vc} \text{Dist}_{vc} \text{Post}_t \\ & + \beta_3 \text{Rump}_{vc} \text{Dist}_{vc} \text{Post}_t + \beta_4 \text{New}_{vc} \text{Post}_t \\ & + \eta_c \text{Post}_t + \gamma_0 X_{vc} + \gamma_1 X_{vc} \text{Post}_t + \varepsilon_{vct}, \end{aligned} \quad (4)$$

where y_{vct} is the dependent variable in village v , old CR c , and year t ; Dist_{vc} is the village's distance to the old CR headquarters; η_c is an indicator for the CR that the village v belonged to prior to 2008; New_{vc} is an indicator for new-CR villages; Rump_{vc} is an indicator for rump-CR villages; Post_t is an indicator for the post-2008 period; η_c is a fixed effect for the old CR; and X_{vc} is a flexible vector of controls, described above.²² Note that for computational efficiency we run, and present estimates from equation (4) in first differences. As a robustness check we also estimate this equation without the controls $\gamma_1 X_{vc}$.²³

Control variables X_{vc} are constructed using Senegal's 2002 census data and include village population over the age of 20 (i.e., eligible voters in the 2000 elections), the population share of each major ethnicity and religious group, and household assets. Controls are first log-transformed and then entered as linear, quadratic, and cubic variables. These variables are summarized in tables A.8 and A.9.

Our main coefficients of interest are β_2 , β_3 , and β_4 . The terms β_2 and β_3 capture heterogeneity in the effect of splits for New-CR and Rump-CR villages, respectively. Specifically, $\beta_3 > 0$ implies that the magnitude of the positive effect of splits for villages in Rump CRs increases with distance from the old CR headquarters, and β_4 , which captures the changes in outcomes in new-CR villages compared to rump-CR villages, provides a direct test of hypothesis 3.

Equation (4) controls for selection into CR splits and for differential trends between split and stable CRs through the η_c and $\eta_c \text{Post}_t$ terms, respectively. The other main effects

22. The omitted category in this specification is villages in non-split CRs, located at zero distance from the CR headquarters, in the pre-split period. Equation (4) deliberately omits terms that are collinear with the other fixed effects: in particular, Rump_{vc} is not included in levels since it is jointly collinear with New_{vc} and η_c . Similarly, $\text{Rump}_{vc} \text{Post}_t$ is jointly collinear with $\eta_c \text{Post}_t$ and $\text{New}_{vc} \text{Post}_t$; $\text{Rump}_{vc} \eta_c$ and $\text{New}_{vc} \eta_c$ are collinear with the main effects Rump_{vc} , New_{vc} , and η_c ; $\text{New}_{vc} \eta_c \text{Post}_t$ and $\text{Rump}_{vc} \eta_c \text{Post}_t$ are collinear with $\text{New}_{vc} \text{Post}_t$ and $\text{Rump}_{vc} \text{Post}_t$.

23. Removing $\gamma_1 X_{vc}$ from the baseline specification effectively removes $\gamma_1 X_{vc} \text{Post}_t$. Robustness to this alternative specification suggests that results are unlikely to be driven by differential trends across villages that vary in Dist_{vc} , which could be correlated with X_{vc} .

and controls capture unobservable differences associated with distance from the old CR headquarters (in levels and over time), and differences associated with being inside a rump or a new CR (in levels and over time). Our main identification assumption is that, conditional on these controls, there are no differential trends in electoral outcomes within villages in split units, or across different distances from the old CR headquarters. We test this no differential trends assumption using electoral data prior to 2008, as described in the next section.

Electoral returns of the creation of public-goods targeting

We do not estimate the electoral return of public-goods targeting for two reasons. First, contrary to the case of new CRs, local public-goods transfers are often distributed to groups that are bound in a reciprocal relationship with a particular party. Thus, transfers beget votes and votes beget transfers. Not only is it difficult to parse out whether goods are being targeted as a reward for past votes or a motivation for future votes, but we should also expect that increases in public goods transfers to reciprocal groups may result in no over-time increases in electoral support for the incumbent because those groups are already voting for the incumbent at high rates.

Second, the strategy we use to identify the effects of CR creation on incumbent's vote share cannot be used for local public goods provision. This is because the unit at which the policy is implemented (village) is the same unit of analysis for which we have only two periods of data, and consequently, we are unable to account for unit-specific trends while exploiting within-unit variation in targeted policies.

RESULTS

In this section, we provide information on the study's key findings.

Government transfers

We find that CRs that split experience a large increase in total and per capita transfers from the national government after 2008. Figure 2 shows that, while CRs that split in 2008 received slightly fewer per capita transfers in 2007–8 than those that did not, they received a significantly larger amount in the post-split period. Figure A.1 in the appendix shows a similar pattern using instead logs of per capita transfers. Within the CRs that split in 2008, we find that while both Rump and New CRs experienced a jump in transfers right after the split relative to no-split CRs, only for New CRs is this increase sustained over time.

These graphical patterns are corroborated by the regression analysis formalized in equations (1) and (2) and shown in table A.10. We find that splits are associated with higher per capita transfers from the central government to CRs on the order of about 2,000 FCFA or around 50% of the baseline mean. The magnitude of this effect is significantly larger for new CRs relative to rump CRs. While these estimates cannot be interpreted as causal, they demonstrate that splits are associated with larger transfers per capita in the long run. This finding is consistent with our argument that administrative unit creation provides strategically congruent incumbents with a tool to signal postelection congruence.

Targeting

We now turn to testing our argument that incumbents target different policies to groups differing across the follow-

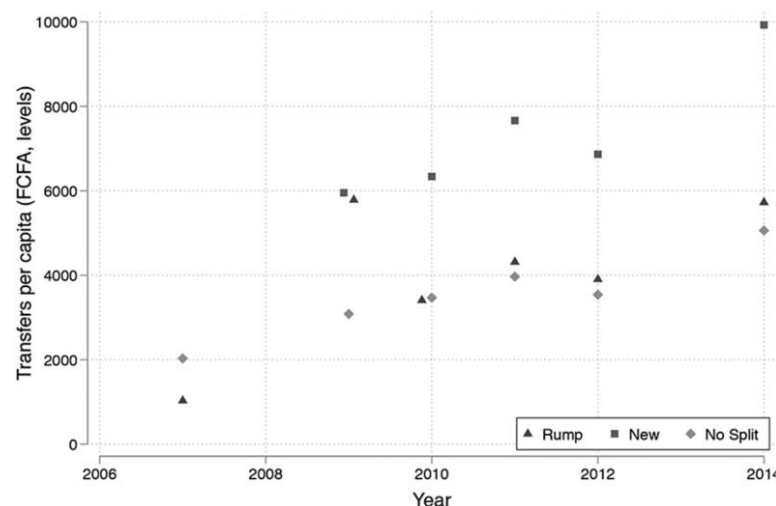


Figure 2. The effect of CR splits on per capita transfers (levels), 2007–14

Table 1. Electoral Targeting of Mouride and Toucouleur/Peul/Pulaar Groups

	New CR (1)	Local Goods (2)	National Goods (3)	New CR (4)	Local Goods (5)	National Goods (6)
Mouride (non-Touc/Peul/Pulaar)	-.124*** (.028)	.228** (.082)	.298*** (.066)	-.049* (.024)	.203** (.066)	.163** (.049)
Touc/Peul/Pulaar (non-Mouride)	.072 (.037)	-.603*** (.067)	-.371*** (.056)	.030 (.034)	-.253*** (.058)	-.141*** (.042)
Local goods (2000)					.385*** (.018)	
National goods (2000)						.488*** (.019)
Observations	10,763	10,763	10,763	10,763	10,763	10,763
Adjusted R ²	.047	.064	.060	.125	.279	.329
Controls	No	No	No	Yes	Yes	Yes

Note. Robust standard errors in parentheses, clustered at the old CR level. Included controls are logged population (flexible), logged assets (linear, quadratic, cubic), and public goods (2000).

* $p < .05$.

** $p < .01$.

*** $p < .001$.

ing two dimensions: (i) the coordinating capacity of brokers and (ii) the history of reciprocal exchange with the incumbent.

Consistent with hypothesis 1b, table 1 shows that public goods are more likely targeted to areas dominated by the Mouride and less likely targeted to areas dominated by the Toucouleur. More so, consistent with hypothesis 1c, splits are more likely to occur in areas dominated by the Toucouleur (though results fall just below reported significance levels) and significantly less likely to occur in areas dominated by the Mouride. These findings are thus additionally supportive of hypothesis 1a—that both groups (because of their high coordinating capacity) should be more likely to be targeted by at least one kind of policy relative to the omitted group.²⁴

A potential concern with this analysis of specific groups is that the results are being driven by omitted variables correlated with group identity but unrelated to our theory. In particular, the Mouride are often described as running a state

within a state (Villalón 1995) because the brotherhood leadership has secured autonomous administrative authority and a special legal status for their holy city of Touba, the second largest after the capital of Dakar. Perhaps this unique organizational capacity is driving the higher incidence of public goods, rather than the reciprocal relationship with the incumbent that we claim. We expect this concern to be most salient among observations in and around Touba. Table A.15 shows robustness of our results to the exclusion of all observations in the Departement of Mbacké, the administrative district containing the city of Touba, which provides confidence that these findings are not being driven by the autonomous organizational capacity peculiar to the Mouride brotherhood.

Elections

What are the effects of CR splits on the change in Wade's vote share between 2007 and 2009? The first three columns in table 2 are our baseline specifications (where distance is measured first in logs and then in levels), which include controls and fixed effects as discussed above. We then show robustness to removing controls.

Consistent with hypothesis 2, in all specifications, New-CR villages are significantly more likely to increase their incumbent support. This finding is consistent with our argument developed above that voters have a strong preference to be granted a new administrative unit. Dealing with the dual

24. We do not expect that both groups should be targeted with more of both policies relative to the omitted category groups because, as our theory suggests, the incumbent will only use the strategy known to be most efficient for each of these two groups. In turn, we expect, and observe, a more mixed strategy among the omitted category groups for whom the likelihood of exhibiting strong brokers and a history of reciprocal exchange with the incumbent party is less clear.

Table 2. Effect of CR Creation on Incumbent Vote Share (2007–9)

	Δ Inc. (1)	Δ Inc. (log Dist.) (2)	Δ Inc. (Dist.) (3)	Δ Inc. (4)	Δ Inc. (log Dist.) (5)	Δ Inc. (Dist.) (6)
New CR (by 2009) = 1	.104* (.046)	.127 (.074)	.123* (.054)	.096* (.048)	.152 (.080)	.129* (.057)
Distance		.006 (.006)	.000 (.001)		.002 (.007)	–.001 (.001)
New CR (by 2009) = 1 $\times$ distance		.006 (.021)	.001 (.001)		–.001 (.025)	.001 (.002)
Rump CR (by 2009) = 1 $\times$ distance		.022 (.015)	.004 (.002)		.028 (.016)	.005* (.002)
Incumbent (2007)	–.677*** (.026)	–.678*** (.026)	–.678*** (.026)			
Observations	4,136	4,136	4,136	4,136	4,136	4,136
Adjusted R^2	.601	.601	.602	.425	.425	.426
Controls	Yes	Yes	Yes	No	No	No

Note. Robust standard errors in parentheses, clustered at the old CR level. Included controls are logged population (flexible), logged ethnic and religious group size (linear, quadratic, cubic), incumbent vote share in 2007, and logged assets (linear, quadratic, cubic). Fixed effects are entered at the old CR level.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

concerns that anticipation effects might bias our estimates and that our estimates might be driven by comparing changes in Wade's vote share between a national (2007) and a local election (2009), table A.11 shows that the results are robust to examining changes between the 2002 and 2009 local elections.

Turning to hypothesis 3, we find that Rump-CR villages located further from the old CR headquarters exhibit increased support for the incumbent, as expected. This effect, however, is relatively small and significant only when we do not include controls and distance is measured in levels (table 2, col. 6).

Testing identification assumptions. In table A.2 we test some of our identification assumptions of the difference-in-difference estimation (eq. [4]). Most importantly, our results suggest that pre-split trends in incumbent support (between 2000 and 2007) across places that will split and places that will not are not significantly different. More so, the findings in table A.2 suggests that the granting of new CRs is not a reward for past votes, a result that would be at odds with our argument that administrative unit splits are designed to lure voters and brokers from groups with which the incumbent does not have a history of reciprocal exchange.

We have argued that incumbents grant new administrative units to groups that require a rather strong signal of com-

mitment since preelection promises are not credible when the group does not have a history of reciprocal exchange. To further probe the assumption that underlies this argument, we take advantage of the fact that some new CRs were only granted in 2010–11, following the 2009 election. We then conduct a placebo analysis estimating equation (4) but using the latter splits as the key independent variables. Since these splits did not occur yet, we expect the effect of future splits to be insignificant. This expectation is borne out in our data, as reported in table A.3.

Alternative explanations. We turn to eliminate alternative explanations. First, rather than signaling greater congruence, the increased presence of the state might allow the ruling party to increase voter mobilization relative to the (possibly already high) baseline conditions. In other words, a greater capacity for electoral mobilization—rather than changes in citizen updating—could be causing the increase in incumbent vote share in 2009. We test this alternative indirectly by examining the effect of administrative splits on voter turnout. A null effect of CR splits on turnout would suggest that the mobilization channel is not a serious concern.

As shown in table A.4, we find no discernible effect of CR creation on turnout. Villages in newly created CRs do not exhibit higher turnout—the coefficient for this variable is a precisely estimated zero. The same null result is found for the

interaction of New-CR and Rump-CR villages with distance from the old CR headquarters. These results suggest that this channel is unlikely to be a key mechanism.

A second concern is that CR splits improved the ability of brokers to monitor voters by creating more homogeneous voting blocs, along religious or ethnic dimensions. To address this concern, we rerun our baseline specification interacting New-CR and Rump-CR status with the ethnic and religious distance between each village and the average of its old CR. Table A.13 shows that our results are unlikely to be explained by possible homogenization of the new CR boundaries. First, the average effect of being a New-CR is robust to the inclusion of main effects for ethnic and religious fractionalization. Second, the interactions of New-CR and Rump-CR indicators with fractionalization yield mostly insignificant coefficients, and the only two significant coefficients have the opposite sign one would expect if homogenization were the driver of the increase in incumbent vote shares in new CRs. This is consistent with the fact that, as table A.12 indicates, CR splits did not create administrative units that were substantially more homogeneous. Third, the results in table A.13 also indicate that greater homogeneity in policy preferences in split CRs is unlikely to explain our main findings.

A final concern is that CR splits followed demands of voters in areas that suffered political, economic, and symbolic marginalization, which potentially exhibited increasing support for the incumbent. To deal with this concern, we test whether the creation of new CRs is predicted by baseline levels of local and national public goods, the ethnic and religious distance between each village and the average of its CR, and an asset index and population, as well as the interactions of all these variables and the distance from the old CR headquarters. The largely null findings in table A.14 indicate that our results are unlikely to be accounted for or explained by any of the mentioned marginalization categories. Overall, the estimates are not consistent with the alternative explanations discussed herein.

EXTERNAL VALIDITY

As in any case study, there may be features unique to the case that shape distributive policies. While replicating the above analysis for all African countries is unfeasible, we address external validity concerns by testing—using cross national longitudinal data—two of our theory's core implications. First, we explore whether across sub-Saharan Africa an increase in the number of primary administrative units follows heightened political competition and, second, whether the association between political contestation and administrative unit proliferation is larger in ethnically diverse countries, as we explained above.

Our dependent variable is a count measure of the number of primary administrative units for all African countries between 1990 and 2015.²⁵ Our key input variable is political contestation, which we proxy with the widely used polity2 score, which ranges from -10 to 10 . As we show below in table 3, our results are robust to instead using three alternative proxy measures of contestation, derived from the Variety of Democracies (VDEM) data set: (a) Democracy, a 10-point scale measuring whether a polity is an institutionalized democracy; (b) Polyarchy, a continuous measure between 0 and 1, measuring “to what extent is the ideal of electoral democracy in its fullest sense achieved”; and (c) Margin of Victory, measured as $-|W_i - C_i|$, capturing the difference in vote share of the incumbent president (W_i) and his main challenger (C_i) in the last national elections.²⁶

We test the relationship between contestation and administrative unit proliferation using country fixed effects regressions that account for all time-invariant national-level characteristics, clustering standard errors at the country level. Since the four proxy measures of contestation are on different scales, we normalize those variables to allow better comparability of the results. As table 3 makes clear (odd columns), increase in levels of contestation is associated with increase in the number of administrative units, irrespective of the measure used. We further run similar country fixed-effects models subsetting the data to include only preelection years; consistent with our theoretical framework, results in this case are even stronger (table A.18).

A core assumption of our theory is that (some) voters are uncertain about the incumbent's type, that is, his congruence with one's group. Since ethnicity is often used as a heuristic to signal congruence, at least in the African context (Carlson 2015), voters uncertain of politician type should be increasing in ethnolinguistic fractionalization. One corollary of this is that the relationship between contestation and the number of administrative units should be stronger in more diverse countries. Using Nunn's (2008) continuous measure of ethnolinguistic fractionalization (ELF) as a moderator (table 3, even columns), we find robust evidence confirming this corollary (see also fig. 3).

CONCLUSION

This paper advances a novel explanation for the rapid increase in the number of administrative splits across the developing world since the 1990s. Our theoretical argument

25. We build and expand a data set assembled by Grossman et al. (2017).

26. Democracy corresponds to `e_democ`, Polyarchy to `v2x_polyarchy`. Margin of Victory was calculated by the authors using the variables `v2ellovtlg` and `v2ellovtsm` such that higher values entail greater competition.

Table 3. Relationship between Contestation and Administrative Unit Proliferation

	Polity2		Polyarchy		Democracy		MoV	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Polity2	1.780** (.826)	-2.497 (1.894)						
Polity2 × ELF		6.144* (3.586)						
Polyarchy			1.347** (.556)	-1.722 (1.310)				
Polyarchy × ELF				4.494* (2.461)				
Democracy					1.675** (.822)	-1.395 (1.248)		
Democracy × ELF						4.549 (2.731)		
Margin of victory (MoV)							.645* (.370)	-.528 (1.239)
MoV × ELF								1.809 (2.179)
N	1,081	1,058	1,137	1,085	980	957	733	709

Note. Standard errors clustered at the country level. ELF = ethnolinguistic fractionalization.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

is rooted in the context of new democracies (and electoral authoritarian regimes), in which incumbents are not free from the need to deliver to voters in order to win increasingly competitive elections. Such countries are characterized by weak information environments and generally nonpro-

grammatic parties. In these contexts, voters use heuristics—such as ascriptive characteristics and elite cues—to infer candidates' congruence with their interest for targeted benefits. In response, incumbents are increasingly using distributive policies strategically to signal congruence but face a problem

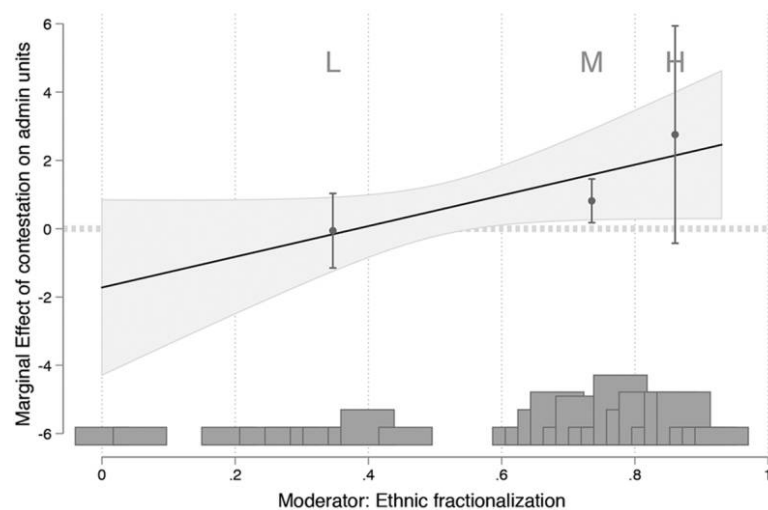


Figure 3. Marginal effects of contestation (proxied using Polity2) on the number of administrative units in year t , moderated by a country's ethnolinguistic fractionalization (ELF), using a binning estimate proposed by Hainmueller, Mummolo, and Xu (2017).

that some targeted benefits may not emit a strong enough signal to lure groups that were not part of the incumbent party's "minimum winning coalition" in the (less politically contested) past.

We argue that incumbents adopt a policy of administrative unit splits to target such groups, since this policy is a sufficiently strong signal about the congruence of the incumbent's party to the targeted voters. This is because the granting of a new administrative unit entails a relatively stable flow of central government transfers and a reduction in the cost of future targeting of local public goods. By contrast, incumbents target public goods (and promises of future local public goods flows) to groups that have strong brokers and a shared history of reciprocal exchange. We test these arguments using the case of Senegal and find robust support for our theoretical predictions.

Our signaling theory of distributive policy choice contributes to past work in several important ways. First, while, past studies—for example, Grossman and Lewis (2014), Hassan (2016), and Pierskalla (2016b)—all assume that electoral considerations dominate the strategic use of administrative-unit splits, they do not embed the incumbent's strategy within a larger framework of distributive policy choice.

Second, our theory of strategic choice does not presuppose that incumbents are necessarily reactive to grassroots mobilization. Grossman and Lewis (2014) argue that incumbents mainly respond to bottom-up pressure and that the demand for splits is strongest in areas that suffer political, economic, and symbolic marginalization. Similarly, Pierskalla (2016b) argues that national governments respond to demand from areas with higher capacity for collective action. This sort of reactive strategy may be relevant for countries (such as Uganda and Indonesia) where splits must be voted on first by the local government, but not in other contexts (such as Senegal and Kenya) where incumbents have close to full control over administrative unit splits.

Third, our theoretical argument is not inconsistent with those arguing that the creation of new administrative units allows incumbents to strengthen patronage networks and co-opt local elites (Green 2010). Using administrative unit splits to target groups that do not have a history of reciprocal exchange with the incumbent's party can certainly help cement new alliances between the national government and local elites and brokers (Kimura 2012). Yet a narrow focus on patronage jobs not only overlooks the benefits for local citizens but also sidesteps the fact that there are more efficient ways to target groups (that do not entail bloating the bureaucracy). Furthermore, our argument regrading the importance of administrative attention helps explain why voters in rump areas are unlikely to punish the incumbent for ad-

ministrative unit splits, a point that past theories have had a hard time explaining.

While we explicitly argue that incumbents are more likely to target groups that have strong brokers, understanding the conditions that support brokers' ability to coordinate votes is beyond the scope of this paper, offering exciting avenues for future work. Similarly, we argue that reciprocal exchange between societal groups and a political party depends, in part, on the economic independence of brokers from the state. Future work should further explore the factors that sustain groups' partisan bias even when parties are nonprogrammatic and nonideological. From a policy perspective, the study offers a cautionary tale of how increased political competition may lead incumbents to adopt policies that may carry short-term electoral gains but arguably at the expense of longer term development goals.

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REFERENCES

- Arriola, Leonardo. 2013. "Capital and Opposition in Africa: Coalition Building in Multiethnic Societies." *World Politics* 65 (2): 233–72.
- Baldwin, Kate. 2013. "Why Vote with the Chief? Political Connections and Public Goods Provision in Zambia." *American Journal of Political Science* 57 (4): 794–809.
- Beck, Linda J. 2008. *Brokering Democracy in Africa: The Rise of Clientelist Democracy in Senegal*. New York: Palgrave Macmillan.
- Boone, Catherine. 2003a. "Decentralization as Political Strategy in West Africa." *Comparative Political Studies* 36 (4): 355–80.
- Boone, Catherine. 2003b. *Political Topographies of the African State: Territorial Authority and Institutional Choice*. Cambridge: Cambridge University Press.
- Carlson, Elizabeth. 2015. "Ethnic Voting and Accountability in Africa: A Choice Experiment in Uganda." *World Politics* 67 (2): 353–85.
- Casey, Katherine, Rachel Glennerster, and Kelly Bidwell. 2018. "Debates: Voting and Expenditure Responses to Political Communication." Working paper no. 3066, Stanford Business School.
- Chandra, Kanchan. 2004. *Why Ethnic Parties Succeed: Patronage and Ethnic Head Counts in India*. Cambridge: Cambridge University Press.
- Clinton, Joshua D., and Jason A. Grissom. 2015. "Public Information, Public Learning and Public Opinion: Democratic Accountability in Education Policy." *Journal of Public Policy* 35 (3): 355–85.

- Collier, Paul, and Pedro C. Vicente. 2012. "Violence, Bribery, and Fraud: The Political Economy of Elections in Sub-Saharan Africa." *Public Choice* 153 (1–2): 117–47.
- Conroy-Krutz, Jeffrey. 2013. "Information and Ethnic Politics in Africa." *British Journal of Political Science* 43 (2): 345–73.
- Dahou, Tarik, and Vincent Foucher. 2009. "Senegal since 2000: Rebuilding Hegemony in a Global Age." In R. Mustapha and L. Whitfield, eds., *Africa since Democratisation*. London: J. Currey.
- de Kadt, Daniel, and Horacio Larreguy. 2018. "Agents of the Regime? Traditional Leaders and Electoral Politics in South Africa." *Journal of Politics* 80 (2): 382–99.
- Englebert, Pierre. 2000. "Pre-colonial Institutions, Post-colonial States, and Economic Development in Tropical Africa." *Political Research Quarterly* 53 (1): 7–36.
- Francois, Patrick, Ilia Rainer, and Francesco Trebbi. 2015. "How Is Power Shared in Africa?" *Econometrica* 83 (2): 465–503.
- Gingerich, Daniel W., and Luis Fernando Medina. 2013. "The Endurance and Eclipse of the Controlled Vote: A Formal Model of Vote Brokerage under the Secret Ballot." *Economics and Politics* 25 (3): 453–80.
- Gottlieb, Jessica. 2017. "Explaining Variation in Broker Strategies: A Lab-in-the-Field Experiment in Senegal." *Comparative Political Studies* 50 (11): 1556–92.
- Gottlieb, Jessica, and Horacio Larreguy. 2016. "An Informational Theory of Electoral Targeting in Young Clientelistic Democracies: Evidence from Senegal." Working paper 2016-15, Berkeley Center on the Politics of Development, Berkeley, CA.
- Green, Elliott. 2010. "Patronage, District Creation, and Reform in Uganda." *Studies in Comparative International Development* 45 (1): 83–103.
- Grossman, Guy, and Janet I. Lewis. 2014. "Administrative Unit Proliferation." *American Political Science Review* 108 (1): 196–217.
- Grossman, Guy, Jan H. Pierskalla, and Emma Boswell Dean. 2017. "Government Fragmentation and Public Goods Provision." *Journal of Politics* 79 (3): 823–40.
- Hainmueller, Jens, Jonathan Mummolo, and Yiqing Xu. 2018. "How Much Should We Trust Estimates from Multiplicative Interaction Models? Simple Tools to Improve Empirical Practice." *Political Analysis* (forthcoming).
- Harding, Robin, and David Stasavage. 2014. "What Democracy Does (and Doesn't Do) for Basic Services: School Fees, School Inputs, and African Elections." *Journal of Politics* 76 (1): 229–45.
- Hassan, Mai. 2016. "A State of Change: District Creation in Kenya after the Beginning of Multi-party Elections." *Political Research Quarterly* 69 (3): 510–21.
- Hassan, Mai, and Ryan Sheely. 2017. "Executive-Legislative Relations, Party Defections, and Lower-Level Administrative Unit Proliferation: Evidence from Kenya." *Comparative Political Studies* 50 (12): 1595–1631.
- Kelly, Catherine L. 2016. "Here's Everything You Need to Know about Senegal's Recent Referendum." *Washington Post*, April 3.
- Kimura, Ehito. 2012. *Political Change and Territoriality in Indonesia: Provincial Proliferation*. London: Routledge.
- Kitschelt, Herbert, and Steven I. Wilkinson. 2007. "Citizen-Politician Linkages: An Introduction." In Herbert Kitschelt and Steven I. Wilkinson, eds., *Patrons, Clients, and Policies: Patterns of Democratic Accountability and Political Competition*. Cambridge: Cambridge University Press, 1–49.
- Koter, Dominika. 2013. "King Makers: Local Leaders and Ethnic Politics in Africa." *World Politics* 65 (2): 187–232.
- Malesky, Edmund. 2009. "Gerrymandering-Vietnamese Style: Escaping the Partial Reform Equilibrium in a Nondemocratic Regime." *Journal of Politics* 71 (1): 132–59.
- Nunn, Nathan. 2008. "The Long-Term Effects of Africa's Slave Trades." *Quarterly Journal of Economics* 123 (1): 139–76.
- O'Brien, Donald B. Cruise. 1975. *Saints and Politicians: Essays in the Organisation of a Senegalese Peasant Society*. Cambridge: Cambridge University Press.
- Pierskalla, Jan H. 2016a. "The Proliferation of Decentralized Governing Units." In E. Wibbels and J. Rodden, eds., *Governance and the Future of Development Aid*. Washington, DC: USAID.
- Pierskalla, Jan H. 2016b. "Splitting the Difference? The Politics of District Creation in Indonesia." *Comparative Politics* 48 (2): 249–68.
- Resnick, Danielle. 2013. "Continuity and Change in Senegalese Party Politics: Lessons from the 2012 Elections." *African Affairs* 112 (449): 623–45.
- Resnick, Danielle. 2014. "Strategies of Subversion in Vertically-Divided Contexts: Decentralisation and Urban Service Delivery in Senegal." *Development Policy Review* 32 (S1): S61–S80.
- Riedl, Rachel Beatty. 2014. *Authoritarian Origins of Democratic Party Systems in Africa*. Cambridge: Cambridge University Press.
- Rueda, Miguel R. 2016. "Small Aggregates, Big Manipulation: Vote Buying Enforcement and Collective Monitoring." *American Journal of Political Science* 61 (1): 163–77.
- Stokes, Susan. 2005. "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina." *American Political Science Review* 99 (3): 315–25.
- Villalon, Leonardo A. 1995. *Islamic Society and State Power in Senegal: Disciples and Citizens in Fatick*. Cambridge: Cambridge University Press.
- Weghorst, Keith R., and Staffan I. Lindberg. 2013. "What Drives the Swing Voter in Africa?" *American Journal of Political Science* 57 (3): 717–34.