Motivating the Machine: Which Brokers Do Parties Pay?*

Sarah Brierley† Noah L. Nathan‡

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Abstract

Parties rely on brokers to win elections in much of the developing world. How do parties use compensation to motivate these grassroots agents? Parties often decentralize broker payment decisions to local party elites. In addition to helping their party win elections, local elites seek personal career advancement. Because local elites typically rely on brokers' support to advance, they have an incentive to use payments to strengthen their ties to brokers. Using a multi-wave survey, we track the full range of payments to over 1,000 brokers from Ghana's ruling party – the party most capable of distributing patronage benefits – across an electoral cycle. We show that the party operates a hybrid payment system missed by previous studies. The party rewards the brokers who deliver the most votes immediately after elections. But long after campaigns, when most payments are made, local party elites prioritize payments to brokers with upward connections to elites.

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†Assistant Professor of Government, London School of Economics and Political Science. Email: s.brierley@lse.ac.uk.

‡Assistant Professor of Political Science, University of Michigan. Email: nlnathan@umich.edu.

Grassroots intermediaries, or brokers, link parties and voters in many developing democracies (Mares and Young 2016). While brokers sometimes serve parties because of their ideological attachments or career incentives (Szwarcberg 2015, Larreguy et al. 2017, Calvo and Murillo 2019), many theories of clientelism claim that brokers work in pursuit of the compensation available to them as intermediaries (Bob-Milliar 2012, Stokes et al. 2013, Camp 2017, Novaes 2018, Gingerich 2020). As a result, understanding which brokers parties pay – with what, when, and why – is essential for our understanding of clientelist parties. Because broker compensation can divert public resources away from citizens and reduce the separation between party and state, it also has important development implications. Moreover, payments to brokers have ramifications for how parties build durable grassroots organizations.

Yet despite a large literature that explores what brokers do for parties, existing studies offer an incomplete view of how parties compensate brokers. Scholars have long recognized in general terms that clientelist parties provide patronage to their agents (Wilson 1961, Scott 1969). However, both older and recent research rarely systemically quantifies or tracks payments to large samples of brokers.[1] More importantly, existing theories are often limited in scope in one or more ways: they focus on payments to brokers at a single point in time – the campaign season (Larreguy et al. 2016, Novaes 2018, Gingerich 2020); they investigate only one possible form of payment – for example, public sector jobs (Oliveros 2016, Driscoll 2017); or they consider only a single motivation for payments – rewarding brokers' electoral performance (Stokes et al. 2013, Camp 2017).

In this paper, we propose a more comprehensive theory of broker compensation. We expand the scope of existing studies by considering that payments can occur across the full electoral cycle, which creates opportunities to reward brokers for different reasons at different points in time. We also consider the full range of payments that parties can offer brokers. Central to our theory is the recognition that parties often decentralize payment decisions to local party elites because national

[1] An important exception is Gingerich (2020), albeit in a very different historical context than examined here.

party leaders lack local knowledge of grassroots agents. These local party elites hold additional goals beyond their party's electoral performance: they also seek to advance their own political careers, which often requires amassing a personal following among grassroots brokers.

We argue that the decentralized decisions made by local elites result in a hybrid compensation structure. In the immediate post-election period, the party rewards the brokers who have delivered the most votes. Long after campaigns are over, local party elites instead direct many payments to brokers with whom they have personal connections or to brokers who are actively developing these upward ties to elites. While incentivizing performance helps achieve short-term electoral goals, rewarding brokers with upward connections within the party helps local party elites advance their career ambitions by building personal support among grassroots agents. This deviation from purely rewarding performance is not prohibitively costly for a party overall because brokers with upward ties are well-positioned to solve their clients' problems and, thereby, serve as effective brokers. In addition, incentivizing brokers to become better connected to local party elites helps bind brokers to the party, which aids long-run organizational stability.

We illustrate this argument with new micro-level data from a panel survey tracking payments to over 1,000 randomly sampled brokers in Ghana's ruling party across a full electoral cycle. To our knowledge, this is the first panel of brokers in any developing democracy. We measure a wide range of payments to brokers across Ghana's 2016 campaign season, the immediate post-election period, and the longer-run non-electoral period. In addition, we develop novel measures of brokers' upward connections to political, party and bureaucratic elites. The panel structure of the data allows us to assess how brokers' actions – such as campaigning, assisting voters in non-electoral periods, or increasing embeddedness in party networks – influence payment while holding fixed brokers' personal attributes and community or constituency characteristics.

We find evidence of a hybrid payment system across the election cycle. Consistent with the existing literature (e.g., Larreguy et al. 2016), brokers mostly worked for free in expectation of future rewards during the campaign. Immediately after the election, a small subset received valuable

benefits as a reward for strong performance. However, the majority of compensation instead occurs between campaigns. In this period, local elites reward brokers who already have, or are developing, upward ties within the party. These payments help local elites foster a following among grassroots activists. Importantly, our survey data also shows that brokers themselves are well aware of this hybrid payment system, which provides further confidence in our empirical results.

By contrast, our data does not support that payments outside campaigns are made as a retrospective reward for past performance, and provides only limited evidence that elites also use off-cycle payments to reward post-election activism. We also rule out a series of alternative explanations for the patterns we observe. This includes showing that direct payments from local party leaders comprise the main benefits brokers receive, with little evidence that brokers also extract substantial benefits from voters or that brokers skim excessively from benefits meant for voters (e.g., Zarazaga 2014, Auerbach 2016).

While we draw on a single case, we expect our theoretical framework to apply broadly to instances where brokers are employed through machine organizations that persist across elections.[2] Even where parties differ in their specific organizational structure, we expect broker compensation decisions to be decentralized and for local party elites to confront the dual imperatives of both building personal support among brokers and ensuring that brokers perform well. Moreover, while we focus on the ruling party because it alone has access to valuable benefits that can be paid to brokers across our two surveys, observing this party's transition into power after the 2016 election allows us to make predictions about opposition parties. We expect they primarily motivate brokers to work for free upfront with promises of future rewards, and then implement the system we describe once in office. Our theory applies less well in very unstable party systems because when brokers expect to switch parties regularly there is less possibility for compensation outside immediate election periods. Moreover, our focus on *party brokers* may not speak to compensation

[2]This includes canonical clientelist parties, such as the Argentinean Peronists (Levitsky 2003), the historical urban US (Wilson 1961), the Christian Democrats of Naples (Chubb 1982), and Mexico's PRI (Magaloni 2006).

among non-party brokers (e.g., Baldwin 2015, Holland and Palmer-Rubin 2015) – local influencers never folded within a party's hierarchy.

This paper makes several contributions. Most directly, we provide a more systematic theory and documentation of broker compensation than existing literature. Better understanding payments to brokers is important theoretically: we cannot explain how brokered clientelism works without understanding the financial incentives structuring brokers' behavior (Stokes et al. 2013, Camp 2017). It is also important descriptively for estimating the burden clientelism places on the fiscal health of developing nations. Brokers are often compensated with public resources, especially employment (Levitsky 2003, Oliveros 2016), which can impede the development of state institutions.

In addition, we contribute to broader theories on the principal-agent relationship between party leaders and brokers. We show that many prominent models of this relationship (e.g., Stokes et al. 2013, Larreguy et al. 2016) have two shortcomings. First, they treat a party's leaders as a unitary actor with uniform preferences for the behavior they seek from their agents. We instead recognize that parties often have multiple decentralized principals who act on their own private preferences. Second, existing models often focus on campaign seasons and electoral outcomes at the expense of incorporating the equally, if not more, important work that parties do *after* elections (Diaz-Cayeros et al. 2016, Nichter 2018). Indeed, we show that most compensation for brokers unfolds in the context of "relational clientelism" in non-campaign periods (Nichter 2018).

Finally, we suggest that relationships with brokers can be a critical, but often overlooked, determinant of party institutionalization (Scott 1969, Muñoz and Dargent 2016, Novaes 2018). The organizational stability that allows parties to become embedded in society is only possible where grassroots activists have incentives to commit to a party over time (Mainwaring 2018). By recognizing that efforts to embed brokers in party networks are a central element of party-broker relationships, we suggest that the study of brokers also has broader relevance to party-building and democratic consolidation.

1 The recent literature

Unless brokers volunteer their time, parties operate (implicit or explicit) labor contracts with them. The existing literature suggests several forms these contracts might take.[3] First, many accounts focus on the campaign period and argue brokers are paid directly for electoral performance. Because party leaders are unable to systematically monitor brokers' labor inputs, they are often claimed to focus only on outputs and peg compensation to brokers' revealed effectiveness in a pay-for-performance contract (e.g., Stokes et al. 2013, Larreguy et al. 2016, Camp 2017, Novaes 2018). Party leaders may not be able to identify perfectly the performance of every broker, but can still observe the output of small groups of brokers fairly accurately through disaggregated election results (Larreguy et al. 2016, Rueda 2016) or via monitoring attendance at local rallies (Szwarcberg 2015).

Parties are thought to use these metrics to enact one of two performance contracts. Some brokers are paid via tournaments in which the most valuable compensation is a bonus made contingent on being among the party's very best performers (Larreguy et al. 2016).[4] The most valuable payments to brokers are delivered immediately after elections once performance is observed, to only a subset of brokers. Alternatively, parties and brokers may exchange a set number of voters in return for a set payment, which may be paid either upfront or shortly after the election. This is akin to piece rate compensation (Prendergast 1999). Unlike in a tournament, every broker is compensated per vote delivered. For example, in Brazil, individual candidates assemble networks of brokers in each election by offering deals to multiple "local notables," who act as brokers. The size of brokers' payments are based on the number of votes they commit to delivering (Novaes 2018).

Second, other scholars argue that payments extend beyond campaigns, observing that brokers from ruling parties often benefit from public sector jobs after elections. Patronage hiring is docu-

[3] Separately, others focus on compensation outside of the party-broker contract, such as the rents brokers might extract from voters on their own, independent of whatever they are paid by party leaders (e.g., Auerbach 2016).

[4] In a tournament, bonuses are not necessarily reserved for brokers delivering the most votes; party leaders can condition payments on expected performance relative to precedents (Szwarcberg 2015, Gingerich 2020).

mented across the US (Wilson 1961), Latin America (Levitsky 2003, Zarazaga 2014, Muñoz and Dargent 2016, Oliveros 2016), Africa (Driscoll 2017, Brierley 2019), and Eastern Europe (Mares and Young 2020). However, compared to the first set of theories above, studies that document patronage hiring rarely offer as explicit an account of *why* brokers are paid. Without an individual-level theory of which ruling party brokers are hired, it often remains unclear whether jobs are also distributed as rewards for vote mobilization or are instead allocated following some other logic.[5]

Ultimately, existing studies offer an incomplete account of brokers' labor contracts: they are typically focused narrowly on only one point in time, one type of payment, or one reason for payment. Each is an important limitation. Theories focused on the campaign season alone are at odds with the broader literature demonstrating that many of brokers' most important activities continue long after campaigns (Zarazaga 2014), such as engaging in "relational clientelism" in-between elections (Nichter 2018). A singular focus on performance overlooks that clientelist parties are often multi-layered institutions, with multiple independent actors able to make separate payments to brokers that may satisfy other – more private – imperatives beyond simply maximizing vote share. Moreover, a specific focus on one particular benefit – such as patronage hiring alone – overlooks that parties typically have many possible forms of compensation to distribute and that separate payment streams may be used to target different brokers for different reasons.

2 Theory: hybrid payments across the electoral cycle

2.1 Departures from existing literature

We expand the scope of existing theory to address these limitations in two main ways. First, we recognize that parties make payments to brokers not only during or immediately after campaigns,

[5]For example, Oliveros (2016) argues that patronage jobs are delivered in return for brokers agreeing to grant routine favors to party supporters once they take their positions in the bureaucracy. While an important contribution to the study of patronage, the paper does not explore which ruling party brokers are given the opportunity to take these jobs over others, and why.

but also during the electoral off-cycle. In all but the most inchoate party systems, party-broker relationships continue after elections (Auyero 2000, Zarazaga 2014, Nichter 2018). Second, we acknowledge that parties typically decentralize broker compensation decisions to local party elites (Levitsky 2003), as upper-level party leaders rarely have sufficient information to target compensation to individual brokers.[6] Given this decentralization, the personal incentives of local elites will influence which brokers the party pays (Wilson 1961). In addition to seeking to reward brokers for their electoral performance, individual local party elites have career goals. These goals include retaining their current positions, advancing in the party, or running for office.

Local party elites often depend on the formal or informal support of lower-level brokers to fulfill their career goals. Formally, they may need direct electoral support from grassroots brokers in internal-party primaries or leadership elections (Ichino and Nathan 2012). More informally, local elites often need to sustain a private following among the party's grassroots activists to enhance their own bargaining power within the party (Levitsky 2003, Tavits 2013). For individual elites competing for promotions, solely maximizing the party's vote share in their jurisdiction may not send a clear enough signal to higher-level party leaders about which particular local elite to promote; that signal is shared across all of the jurisdiction's elites. Instead, local elites can use the size of their broker following to informally indicate their personal value relative to their peers.[7]

Anecdotal evidence provides clear examples of local party elites using patronage for similar goals. For example, in the US it was observed that: "the leader of Tammany Hall allocates such [patronage] resources as he does possess so as to improve his own immediate position in the organization rather than maximize the party's vote" (Wilson 1961, 372). Similarly, Levitsky (2003; 67-79) details how local Peronist leaders in Argentina use their control over patronage jobs to compete for the personal support of branch activists as they seek power over each other.

[6]These local elites serve parties at, for example, the constituency (district) or municipality levels.

[7]Camp (2017) develops a similar logic for bargaining between leaders and brokers, rather than among tiers of leaders.

2.2 Implications for broker compensation

Compensation schemes that prioritize both the party's collective goal of vote maximization and the individual career goals of local party elites are possible because these elites make multiple separate payment decisions across an electoral cycle. In campaign periods, we expect local party elites to prioritize their party's immediate electoral success, as ensuring their party wins is paramount in the short-run. Similar to existing literature, we expect that brokers will either be paid piece rate or through a tournament for revealed output as of election day, at rallies, or both – whichever metric is available.[8] These payments encourage brokers' electoral performance.

But once a party takes office, a different payment logic can become salient. Freed from the immediate focus of the campaign, local elites can pivot to consider their longer-term career goals. In post-election periods, we expect the winning party to compensate the brokers with the most ties to local party elites. In return for compensation, local party elites expect these brokers to back their ambitions to rise in the party in the future.[9] Payments that reward brokers for their social embeddedness with party elites, in turn, encourage brokers to further invest in developing these upward relationships.

The aggregate effect will be a system that directs the largest share of post-election payments to brokers who have connections to higher ranks of the machine. For national party elites, who prioritize the party's overall success, such a payment system may appear inefficient relative to solely paying brokers for performance. But we expect that national party leaders will let the hybrid system persist in equilibrium for two reasons. First, allowing local party leaders to use patronage

[8]Which occurs depends on brokers' relative bargaining power vis-a-vis local party elites. Where brokers can more credibly threaten to defect to other parties during the campaign, piece rate compensation is more likely (Novaes 2018).

[9]Opposition parties should mirror this system, for the same reasons, to whatever extent possible with their private resources. But because opposition parties typically have fewer resources and their brokers often become dormant in non-campaign periods (unable to link clients to the state), we expect that opposition parties primarily motivate brokers via promises of rewards upon winning. Opposition parties have to forego hiring clientelist brokers altogether if they have neither significant private funding – needed to pay brokers when out of office – nor any credible expectation of soon winning – needed to motivate brokers to work for free in anticipation of future rewards (Shefter 1977).

to satisfy their private goals helps foster party stability (Muñoz and Dargent 2016). Curtailing local elites' ability to advance their careers is likely to demotivate them and encourage them to leave the party. Both impose electoral costs.[10] Moreover, incentivizing grassroots brokers to become more closely tied to local party elites also makes it harder for them to defect in the future, sustaining the party's local organization.[11]

Second, rewarding brokers for developing upward ties to local elites can have the carryover effect of helping to improve their competence at forms of relational clientelism that are important for maintaining voter support in the post-election period. Being an effective "problem solver" depends on brokers' having close social connections to higher-ups in the party and local bureaucracy that control access to the benefits that voters seek (Auerbach and Thachil 2018, Brierley and Nathan 2020). As Auyero (2000) and Zarazaga (2014) richly document in the Argentinian case, brokers need these connections to know how to best extract patronage for voters and/or gain privileged information about enrolling voters in government social programs.

3 Party brokers in Ghana

We focus on Ghana, where local party brokers (*branch executives*) are the main agents who link party leaders and voters (Bob-Milliar 2012, Fobih 2010).[12] Ghana holds concurrent, highly competitive presidential and parliamentary elections every four years, which are dominated by the New Patriotic Party (NPP) and the National Democratic Congress (NDC). The parties regularly alternate in office and the NPP became the ruling party after the 2016 election. Voters register at polling stations that contain roughly 500 to 1,000 individuals, which represents either an entire village or

[10] Ichino and Nathan (2013) find a significant electoral penalty for the ruling party in Ghana when national party leaders block local elites from competing for party nominations.

[11] Brokers who are more socially embedded in the machine can face higher costs to abruptly defecting and switching parties. For example, they are less likely to be trusted by elites of a new party if their deep ties to elites in their current party are already publicly observed.

[12] Parties also sometimes rely on other intermediaries, especially traditional chiefs.

portion of a town or urban neighborhood.

3.1 Branch executives as brokers

Ghana's two major parties are organized nearly identically, with branch executives (brokers) selected to cover individual polling stations and parliamentary constituency executives (local party elites) serving above them and coordinating party activities in the broader district. Within the NPP, our focus below, there are five branch executives at every polling station.[13] The majority of branch executives are male (72%) and work in the informal sector (77%), often as farmers or small-business owners. Because their party was in opposition for eight years before 2016, only a small minority of NPP branch executives (2.7%) had jobs at their local governments prior to the party taking power.[14]

During election campaigns, branch executives serve as each party's main grassroots labor force, engaging in a mix of clientelist and non-clientelist activities, including canvassing door-to-door, organizing rallies, spreading party messages, and distributing handouts (Brierley and Kramon 2020). After the campaign, branch executives in the ruling party become "problem solvers" channeling targeted patronage to supporters and engaging in what Nichter (2018) terms "relational clientelism."[15] This includes both linking ordinary voters up to local government officials and linking officials down to voters by identifying recipients for government programs.

3.2 Branch executives' motivations

Although many branch executives report partisan or ethnic attachments to their party, branch executives are mostly motivated to work for parties in exchange for private benefits. Based on 200

[13]These are the branch chair, secretary, organizer, women's organizer, and youth organizer. The NDC has similar positions at each branch.

[14]Like many African countries, Ghana's political system is highly centralized and the president's party controls all local governments.

[15]By contrast, the opposition's branch executives are mostly inactive until the next campaign.

interviews with these "foot soldiers," Bob-Milliar (2012) argues that "selective incentives are at the heart of party activism in Ghana" (680). In our survey data (see below), NPP branch executives report expecting a wide range of benefits from party leaders once the party takes office. Table 1 ranks the most common forms of compensation our respondents hope to receive.

Table 1: What compensation do brokers hope to receive?

	Percent (n)
A job	47.46% (541)
A loan	38.42% (438)
A job for a family member	17.89% (204)
Cash	16.75% (191)
Administrative fees (e.g., child's school fees)	10% (114)
Business inputs (e.g., farm equipment)	7.81% (89)
Motorbike	4.47% (51)
Other	1.67% (19)
Bureaucratic favors (e.g., child's school admission)	1.49% (17)
Housing	1.32% (15)

Respondents' hopes for payment now that the NPP is in power. N=1,140. Respondents could give multiple answers.

Public employment – whether permanent or temporary – is the most valuable incentive that the party offers branch executives. Recent examples of state agencies offering temporary public employment include the country's Youth Employment Agency (YEA) and Forestry Commission.[16] Branch women's organizers – a position for female brokers – are also the main beneficiaries of catering contracts under the national School Feeding Programme.[17] Where public jobs are unavailable, party leaders also can help secure employment at private businesses of party sympathizers – a common tactic of many machines (Wolfinger 1972). In addition to employment, branch executives can receive differential access to loans, either through government micro-finance initiatives

[16]While successive governments may have wanted to reward brokers with permanent civil service positions, they have been constrained by IMF loans that mandated public sector hiring freezes. Ghana has been under IMF programming 21 out of the 38 years since multi-party rule (1993-2020). Temporary job programs like the YEA and Youth in Afforestation Initiative (Forestry Commission) allow the government to side-step these limits.

[17]We classify the receipt of such a contract as a job in the analysis.

or from private lenders controlled by party sympathizers.

Payments to brokers occur at multiple points. In both the ruling and opposition party, aspiring parliamentary nominees direct personal funds to branch executives who serve as the electorate in intra-party primaries at the outset of each campaign (Ichino and Nathan 2012). During campaigns, constituency executives and parliamentary candidates target some campaign funds to branch executives. Many of these campaign payments come from private funds (Asante and Kunnath 2018). But the resources – public and private – available to compensate brokers increase dramatically with incumbency. The winning party gains wide latitude to direct resources from public programs to branch executives, and the voters beneath them.

3.2 Constituency executives' motivations

Constituency-level party executives oversee the branch executives. The NPP selects six main constituency executives in each of the country's 275 parliamentary constituencies.[18] Constituency executives often have ambitions to rise in the party to either become regional (provincial) party executives or elected politicians. The most highly-desired political positions are the district mayor (District Chief Executive) and becoming a parliamentary candidate. Mayors – who are presidential appointees – are often former party constituency executives. Similarly, prior holding of a constituency party position is common among aspirants in parliamentary primaries (Ichino and Nathan 2021). When their party wins power, the constituency executives who are not appointed as the mayor typically take on other positions, formally or informally, in the district government from which they gain direct influence over most of the local government programs that the party uses to target benefits to branch executives. For example, in our fieldwork, we observed constituency executives exerting control behind the scenes over who receives the YEA jobs in their district.

Constituency executives' career advancement depends on the formal support of branch execu-

[18]These are the constituency chair, secretary, organizer, youth organizer, women's organizer, and treasurer. The NDC has identical positions.

tives. In both parties, constituency and regional executives are elected by branch executives. Parliamentary nominees also require branch executives' support because branch executives form the electorate in parliamentary primaries (Ichino and Nathan 2012). These electoral ties between each layer of the party give constituency executives significant private incentives to use their influence over public resources to build and consolidate personal support among branch executives. Branch executives know this and leverage their positions to pressure local party elites for patronage. Detailing the *quid pro quo* that occurs between branch- and constituency-level party executives in Ghana, Luna (2020) notes that "there is immense pressure" on constituency executives "to keep your foot soldiers [branch executives] satisfied" (63).

4 Data

4.1 Survey design and timing

We construct a panel survey of NPP branch executives. We focus on the ruling party because the most valuable payments Ghana's parties give to brokers – such as public jobs – are only available to the national incumbent. Because the two parties are almost identically structured and rely on the same state resources to sustain clientelism when in power, we expect our results will apply to the NDC when they are in office instead.[19]

We interview branch executives at a random sample of 200 polling stations within 10 parliamentary constituencies in Southern Ghana.[20] Our two survey waves, 18 months apart, capture distinct points in the election cycle. The NPP won the December 2016 election and took power in 2017.[21] The first wave interviewed 1,140 respondents in January 2018, which coincided with the NPP's quadrennial branch-level elections to select new branch executives.[22] These executives

[19]Moreover, our analysis of the 2016 campaign – when the NPP was still in opposition – suggests how opposition parties incentivize brokers through promises of future rewards.

[20]More details on sampling are in the Online Appendix (SI.2).

[21]The NDC was in office since 2009.

[22]Broker selection is examined in a companion paper.

will be in their positions until after the next general election in December 2020. The first wave interviewed all aspirants (winners and losers) in these internal elections for the five positions at each branch. We also interviewed all incumbent chairs, organizers, and women's organizers – the three most important positions – regardless of whether they re-contested in 2018.[23] The second wave occurred just before the 2020 campaign, which began in August 2019 with the NPP's first parliamentary primaries to select 2020 candidates. We aimed to re-interview every respondent who had not already retired and consented to being re-contacted, reaching 1,001 (88%) respondents.[24]

4.2 Measuring major and minor patronage

The survey included a battery of questions on benefits received from the party. The first wave distinguished between compensation in two periods: the 2016 campaign itself (*"period 1"* below); and 2017, which represents the initial transitional period during which the NPP took office (*"period 2"*). These map to immediate pre- and post-election payments. The second wave instead identifies brokers' compensation over 2018 and 2019, the non-electoral period spanning from when the NPP was settled in office through the onset of the 2020 campaign (*"period 3"*). Each set of questions measures brokers' actual receipt of payments, not perceptions about possible payments. The questions include payments regardless of whether they are sourced from public resources or party leaders' private funds.[25]

Given that our outcome data is self-reported, there may be concerns of potential upward and downward bias in reporting.[26] Considering downward bias, discussions during our pilot suggested that branch executives feel very comfortable discussing payments. Indeed, Table 1 confirms that

[23] Our sample thus includes current branch executives at each polling station – those (re-)selected in 2018 – and all leaders as of the 2016 election (selected in 2014).

[24] We examine attrition on pg. SI.3.

[25] Indeed, virtually all Period 1 payments are from private sources.

[26] Self-reported data is the only viable means to collect comprehensive information across all categories of possible payments. For example, collecting administrative data at the bureaucrat level across the myriad public agencies that might employ brokers is virtually impossible. Beyond employment, most payments to brokers would never even be recorded.

brokers openly expect, discuss, and demand potential payments. To protect against potential boasting and upward bias, we asked detailed follow-up questions that required respondents to provide specific information about the major benefits they had received. Reassuringly, brokers' self-reports are not implausibly high: for example, our survey estimates that 21,625 public sector jobs were distributed to branch executives nationwide from 2017-2019, which is far below the total distributed through public employment schemes during the NPP's term.[27] This is consistent with the party distributing jobs both to brokers themselves and to ordinary supporters through those brokers.

Most payments are in-kind, not cash, and range in value. We distinguish between *major* and *minor* patronage. "Major patronage" includes temporary and permanent jobs, loans, skills training, and new vehicles (e.g., motorbike).[28] These are high value benefits that have the potential to transform a recipient's livelihood. "Minor patronage" includes petty cash, clothing or cloth, fuel, minor farming or business inputs (e.g., cutlasses), or electronics (e.g., a new cellphone).[29] Table 2 presents summary statistics on the share of brokers receiving each type of patronage in each period.

4.3 Measuring broker embeddedness: *connections up* to local elites

To measure upward ties to local elites and embeddedness within party networks, we test each branch leader's knowledge of the 13 most important political and bureaucratic elites in their district with power over state resources: the six constituency party executives, the local party elites directly above branch leaders in the machine;[30] and eight local officials who can best help brokers deliver

[27] The party claims to have distributed more than 250,000 jobs under three programs: the YEA and Forestry Commission (described above), and Nation Builders Corps (Modern Ghana 2020). Thousands more patronage jobs are available in the district governments (Driscoll 2017).

[28] Brokers could also receive government contracts, such as under the School Feeding Programme (see above).

[29] We code cash as "minor" because our respondents described they are rarely paid salaries or large quantities of cash. Instead, most cash reported represents token low-value handouts "dashed" by party leaders after meetings and other brief interactions. Pg. SI.5 validates that our "major" items are more economically consequential than those coded as "minor," linking payments to changes in respondents' economic conditions.

[30] These are the constituency party chair, secretary, treasurer, organizer, youth organizer, and women's organizer.

benefits to, and solve problems of, their clients.[31]

Respondents were asked to name the current occupant of each position and provide the last four digits of his/her personal phone number without asking anyone for help. Respondents knew these numbers either by heart or through looking on their phones.[32] This measures contacts that respondents already had (and presumably already use), not which names or numbers they hypothetically could get. Already knowing these names and numbers proves a broker's ability to directly contact an elite to request assistance for themselves or for a voter; while names and numbers are not the only conceivable means of contact, they serve as strong proxies for the presence of an existing connection. We assume that brokers are much more likely to have close social ties to elites that they know and already have established a direct line of communication with.[33]

We create a 25-item test of *connections up*, recording the percentage of items correctly identified, with names and numbers counting separately.[34] We measure this variable in both waves and also compute the change between waves to identify brokers actively developing elite ties over time. We operationalize this measure as the proportion of correct responses. Mean *connections up* in wave one is 0.22 (sd=0.15) and increased to 0.28 (sd=0.16) in wave two (see pg. SI.7).

4.4 Measuring performance

We measure electoral performance using 2012 and 2016 presidential results disaggregated by polling station. This is the same metric scholars argue party leaders use to observe broker performance (e.g., Larreguy et al. 2016, Rueda 2016); during our fieldwork, constituency-level party

[31] These are the Member of Parliament, mayor (DCE), city/town council chair (presiding member of the District Assembly), city/town councilor (District Assembly member), district head bureaucrat (District Coordinating Director), district engineer (who supervises public works spending), the district coordinator for the National Disaster Management Organization and the district's Youth Employment Agency coordinator (key sources of patronage employment).

[32] Nearly all respondents (96%) report owning a phone.

[33] Mobile phones are ubiquitous for government business in Ghana. Contact with local officials is highly personalized – these elites (even MPs and DCEs) answer their personal phones, rather than working through staff.

[34] We only tested for the MP's phone number, as MP names are widely known. We confirmed phone numbers in advance. Our coding rules account for additional phone numbers or possible nicknames (pg. SI.7).

leaders regularly demonstrated detailed knowledge of changes in polling station results as a means of evaluating the performance of local branches. Below, we identify stations with better-than-expected performance by examining the swing in presidential vote share between 2012 and 2016, controlling for either constituency fixed effects or the party's constituency-level vote swing. This allows us to focus on branches that performed especially well relative to their immediate area, partialling out overall trends and constituency-wide changes in party support unrelated to polling station-level broker efforts (e.g., changes in the parliamentary candidate between 2012 and 2016).[35] Consistent with their electoral victory, the average polling station-level NPP vote swing was $+5.9$ p.p., with minimum of -8.0 p.p. and maximum of $+21$ p.p.

5 Analysis

5.1 What do brokers receive?

Table 2 summarizes the type and timing of compensation. Consistent with existing literature on both ruling and opposition parties, brokers are rarely paid for labor inputs: the vast majority (77%) worked for free during the 2016 campaign (Period 1), with no upfront or contemporaneous payment. While 21% received minor benefits, less than 1% received any major benefit. This is despite being very active in the campaign: 92% engaged in house-to-house canvassing, 77% organized attendance at rallies; and 57% provided handouts (pg. SI.7). Yet campaign activity is uncorrelated with Period 1 payments (pg. SI.9), suggesting brokers worked in anticipation of future rewards.

Payments increased immediately after the election, once the NPP took power. In Period 2, 10% of respondents received major patronage. Yet at odds with theories that focus on the immediate pre- and post-election periods, post-election benefits still represent a minority of the total benefits. In Period 2, the vast majority (78%) of brokers again received no payment, and the high-value benefits

[35]The same NDC and NPP presidential and vice presidential candidates contested in 2012 and 2016 and there was otherwise no major partisan realignment. The NDC was the incumbent in both.

Table 2: Broker payments across the electoral cycle

	Period 1 (campaign)		Period 2 (election aftermath)		Period 3 (off-cycle)	
Variable	%	N	%	N	%	N
Paid major patronage (0,1)	0.9%	791	9.9%	791	25.2%	667
A job	0%	791	3.7%	791	12.7%	667
A loan	0.3%	791	0.6%	791	9.7%	667
Enrolled in training program	0%	791	5.7%	791	7.6%	667
A state contract	0%	791	0.6%	791	1.2%	667
A motorbike or bicycle	0.8%	791	0%	791	0.1%	667
Paid minor patronage (0,1)	21.4%	791	13.7%	791	25.3%	667
Petty cash	10.9%	791	7.3%	791	16.3%	667
Food	11.8%	791	7.7%	791	12.9%	667
Cloth	5.3%	791	2.7%	791	12%	667
Electronics (phone, etc)	0.4%	791	0.3%	791	1.6%	667
Farm/business inputs (fertilizer, etc)	–	–	0.1%	791	1.9%	667
Paid major patronage cumulatively to date (0,1)	0.9%	791	10.7%	791	33.1%	667
Paid minor patronage cumulatively to date (0,1)	21.4%	791	29.3%	791	48.4%	667
Not paid in this period (0,1)	77.4%	791	78.4%	791	55.6%	667
Not paid cumulatively to date (0,1)	77.4%	791	63%	791	33.9%	667

Restricted to those serving as of 2016 to allow consistent comparisons across time. Indented items are sub-components of the **bold** categories.

distributed shortly after the election comprise only 29% of the total major patronage distributed by the end of Period 3.

It is in the longer non-electoral period – 2018-2019 – that the majority of major patronage reached brokers. In Period 3, a sizable minority (25%) now received major benefits, while 25% also received more minor compensation. Jobs were the most common major patronage – more than one in ten brokers (13%) received a job. The large majority of jobs (87%) were temporary positions through the public employment schemes described above (e.g., YEA). In addition, roughly 10% received a loan, and 8% were enrolled in a skills training program meant to improve employment prospects. Scaling these figures up to 29,000 polling stations nationwide, this amounts to the party distributing 18,400 jobs, 14,000 loans, and 11,000 skills trainings in 2018-2019 – a substantial overall outlay. The party rewarded major patronage largely to distinct groups of brokers in Period 2 and Period 3; only 22 respondents (2%) received major payments in both periods. By the end of

Period 3, most brokers (66%) had received some type of benefit from the party.

5.2 Why do they think they receive it?

Which brokers does the party reward, and why? A first cut at these questions is to ask brokers about the labor contract that they perceive themselves to be working under. In wave two, we asked respondents what actions (if any) they could take to increase their chances of receiving compensation.[36] We code open-ended responses into a categorical variable in Table 3.

While nearly half of the brokers (49%) are resigned to think that no actions would improve their compensation, the remaining responses suggest a hybrid compensation system. A significant minority gave two common responses: (a) *perform better* – that is, by putting in more effort and/or attracting more voters to the party (20%); or (b) become more *embedded in the party* by developing closer personal connections up to local party leaders (19%). In terms of performance, brokers talked of the need to campaign more and bring in more votes. Typical answers about embeddedness mirror our *connections up* variable: e.g., "get closer to the top party officials."

Most importantly, the responses in Table 3 also correlate with when respondents report receiving payments. This strongly suggests that many branch executives believe the party operates a hybrid payment system similar to what we describe above. Table 4 regresses the responses in Table 3 on indicators for having received major patronage payments in either Period 2 (immediate post-election) or Period 3 (electoral off-cycle).[37] We find that respondents who received major patronage in Period 2 but not 3 are precisely those most likely to believe payments follow from effort or performance. Branch executives who received major patronage in Period 3 but not 2 are instead disproportionately those who say developing better ties to constituency elites will best increase

[36]The question was: *"Are there any actions you could take that you think would increase the amount of benefits you receive from the NPP? What are they?"*

[37]The models include constituency fixed effects to restrict comparisons to respondents serving under the same constituency executives and also include a series of individual- and branch-level controls described below. Standard errors are clustered by polling station branch.

Table 3: What could you do to improve your compensation?

Response	Percent	#	Example quotes
No action	**48.7**	**486**	"Nothing you do will help" "I don't know what else to do" "I think I am already doing the best I could"
Improve *connections up*	**18.84**	**188**	"By getting closer to top party executives" "By contacting the party leaders at the constituency level" "I have to be calling the MP, the constituency chairman more"
More effort	**11.52**	**115**	"To work hard for the party to maintain power" "If I work hard to win votes" "Campaigning for the party and assisting needy people"
Improve performance	**8.82**	**88**	"Gather more votes for the party" "By getting supporters for the party" "By doing my job very well so that more people will join the party"
Work stoppage	**2.81**	**28**	"Sit down strike" "During campaign season will not go on campaign" "We have to refuse to vote if they don't heed to our plight"
Protest party leadership	**2.71**	**28**	"I will vote for new constituency executives" "Campaign against the party executives and change them for new ones" "Voting against incompetent MP in the... primaries"
Defect to another party	**0.80**	**8**	"Vote the [NPP] out" "We will have to rally behind a competitor for them to see we mean business" "Tell them to come fulfill the promises made... or risk losing votes"
Other	**5.81**	**8**	
Total	100	998	

Table 4: Understanding of reasoning for payments on payments received

	Dependent variable:	
	Expect more pay if you improve *connections up* (0,1)	Expect more pay if more effort or performance (0,1)
Received major patronage in Period 2 but not Period 3 (0,1)	0.022	0.117*
	(0.050)	(0.060)
Received major patronage in Period 3 but not Period 2 (0,1)	0.079**	−0.014
	(0.037)	(0.032)
Constituency FEs	Y	Y
Indiv. controls	Y	Y
PS. controls	Y	Y
Observations	831	831
Adjusted R^2	0.088	0.107

† significant at $p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$. OLS; the DVs are indicators of common responses in Table 3, regressed on payments received. Standard errors clustered by polling station. Restricted to branch executives in their positions in Period 3.

one's compensation. These patterns also make clear that respondents see improving electoral performance and increasing connections to elites as distinct actions and reasons for payment.[38]

5.3 The hybrid system: the immediate post-election period

We now explore whether brokers' beliefs about why they are paid match the observed pattern of payments. We first investigate which broker attributes predict receiving major patronage immediately after the 2016 election (Period 2).[39] We expect payments in the immediate post-election period to be based on revealed performance, consistent with anecdotal evidence in existing literature and the perceptions of many of our respondents. We also assess two alternatives: that major patronage payments are a function of activism during the campaign (brokers' labor inputs) or *connections up* to local elites (brokers' embeddedness).

Table 5 displays OLS regressions in which an indicator for receiving major patronage is the

[38]For example, while many respondents who were paid in Period 2 readily volunteered that being better at campaign mobilization would lead to payment, none of the respondents paid in Period 3 said post-election activism (relational clientelism) would lead to more payments, even though this is brokers' primary task during this period.

[39]Separate analyses for the minor benefits in Table 2 are on pg. SI.9. Minor payments do not follow any discernible pattern in any time period.

dependent variable.[40] The unit of the analysis is each branch executive during the 2016 campaign. We include constituency-fixed effects to account for heterogeneity across constituencies in overall benefits available (pg. SI.13). We also include polling station- and individual-level controls, such as respondents' tenure in the party, education, family ties to elites, and demographics.[41] We cluster standard errors by polling station (branch), as this was our sampling unit.

Table 5: Major patronage payments immediately after the election

	Dependent variable:					
	Major patronage (2017)					
	(1)	(2)	(3)	(4)	(5)	(6)
NPP pres. vote swing at polling station 2012 to 2016	0.702**	0.556*		0.710**	0.687*	
	(0.321)	(0.310)		(0.358)	(0.353)	
NPP pres. vote swing at polling station 2012 to 2016 (raw votes)			0.001***			0.001**
			(0.0003)			(0.0005)
Campaign activity in 2016 (0,9)	0.007	0.004	0.010*	0.002	−0.009	0.007
	(0.005)	(0.005)	(0.006)	(0.013)	(0.013)	(0.014)
Connections up (%)	0.104	0.066	0.083	0.235	0.138	0.141
	(0.095)	(0.096)	(0.092)	(0.173)	(0.170)	(0.181)
NPP pres. vote swing at constituency 2012 to 2016		−1.468***			−1.302*	
		(0.528)			(0.709)	
Constituency FEs	Y	N	Y	Y	N	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y	Y	Y
Observations	722	722	700	184	184	179
Adjusted R^2	0.075	0.045	0.079	0.172	0.087	0.185

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. OLS regressions subset to brokers serving as of 2016. In columns 1-3, Standard errors are clustered by polling station. In columns 4-6, data is collapsed by polling station among sitting branch executives during 2016. Vote swings are calculated as 2016 vote share - 2012 vote share.

[40] We replicate Tables 5 and 6 using logistic regression on pgs. SI.12 and SI.16.

[41] At the polling station, we control for distance to the district capital (remoteness) and wealth. At the individual level, we control for age, gender, wealth, years in the NPP, years in the community, whether the broker is a local ethnic minority, whether they live outside the community, whether they are related to the traditional chief, related to a local politician (DCE or MP), related to a constituency party executive, related to their district assemblymember, work in the formal sector, and work as a petty trader.

Column 1 of Table 5 shows a positive association between NPP vote swing – a branch's relative performance compared to the rest of the constituency – and the likelihood of receiving major patronage. Column 2 shows similar results after replacing the constituency fixed effects with constituency swings in NPP vote share.[42] Column 3 replaces vote share with number of raw votes for the NPP, which is an alternative metric that parties may reward.[43] By contrast, across columns 1-3 we find no evidence that payments reflect brokers' inputs (campaign activity in 2016) or embeddedness (*connections up*).[44] Columns 4-6 show that these relationships also hold when responses are collapsed to the polling station (branch) level.[45]

The positive relationship between NPP vote swing and receiving major patronage is substantively large. Figure 1 plots the predicted probability of receiving major patronage in Period 2 against the vote swing at each branch. The dashed horizontal line indicates the average predicted probability of receiving major patronage (just less than 0.1). Moving from a polling station where the NPP vote swing was one standard deviation below the mean to one standard deviation above results in more than doubling the probability of receiving major patronage (from 5 p.p. to 12 p.p.). Overall, the party rewarded a small subset of brokers in the immediate post-election period for the best electoral performance.

5.4 The hybrid system: the electoral off-cycle

We next investigate which brokers receive major patronage in the years between elections when the NPP distributes the bulk of major payments (Table 2). Table 6 presents OLS regressions with an indicator for receiving major patronage in Period 3 as the dependent variable.[46] We include

[42]The results are robust to region fixed effects or controlling for vote share at the constituency level.

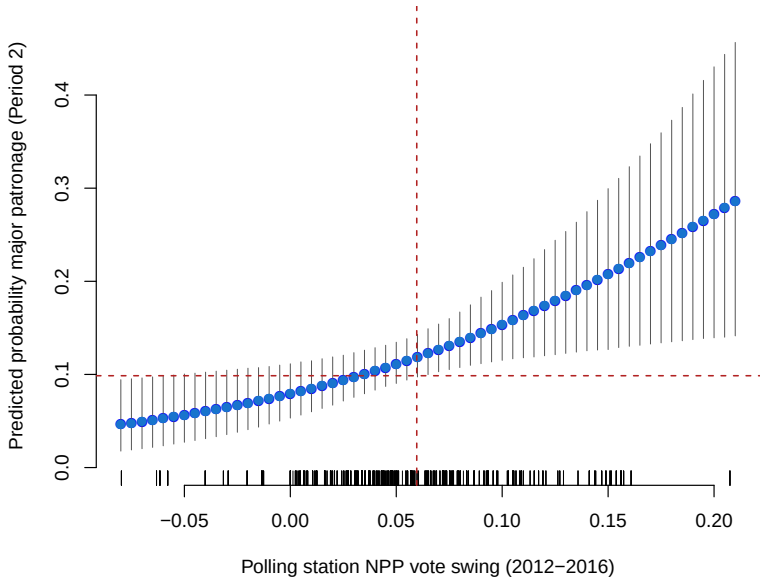
[43]We do not have 2012 parliamentary results at the polling station level. In practice, parliamentary and presidential vote shares are usually highly correlated.

[44]Campaign activity is an index of nine major actions (pg. SI.7).

[45]We also re-run the analyses in Table 5 dropping outliers on NPP vote swing. The results are robust (and in fact strengthen) with this restriction (pg. SI.15). These patterns also do not vary across different party positions within each branch (e.g., chairman vs. secretary).

[46]Similar analyses for minor patronage benefits are on pg. SI.9.

Figure 1: *Major patronage after the election (Period 2)*



Notes: Predicted probability of receiving major patronage in 2017 by polling station swing in NPP presidential vote share (2012 to 2016), with all covariates held at observed values. The horizontal line is the mean proportion receiving these benefits. The vertical line is the mean NPP vote swing.

constituency fixed effects and the same individual- and polling station-level controls as above, continuing to control for respondents' tenure in the party, education, family ties to elites, and other demographics. Standard errors remain clustered by polling station.

To test whether Period 3 payments reward brokers for their ties to local elites, Column 1 of Table 6 includes *connections up* measured in the wave one survey. This captures connections to local elites that brokers already had prior to receiving any payments in Period 3.[47] To test if major

[47]There is an endogeneity concern with instead using *connections up* from wave two to predict payments in Period 3: it is unclear whether connections in the second wave are a cause or outcome of payments received by the end of the second wave survey. Table 6 side-steps this concern by focusing on *connections up* that are temporally prior to Period 3. However, a placebo test (pg. SI.18) demonstrates that it is unlikely that *connections up* in wave two are an outcome of past payments, as would occur if brokers only developed upward ties because receiving benefits brought them into contact with new elites.

Table 6: Predictors of major patronage in the non-electoral period (2018-2019)

	Dependent variable:					
	Major patronage (2018-2019)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections up (Wave 1)	0.294**		0.322**			0.270*
	(0.114)		(0.115)			(0.115)
Connections up – politicians (Wave 1)		0.047				
		(0.098)				
Connections up – bureaucrats (Wave 1)		−0.028				
		(0.138)				
Connections up – const. execs. (Wave 1)		0.195†				
		(0.101)				
Broker up (Wave 1)	−0.072	−0.073†		−0.060		−0.081†
	(0.044)	(0.044)		(0.043)		(0.043)
Broker down (Wave 1)	0.088†	0.088†		0.085†		0.089†
	(0.045)	(0.046)		(0.046)		(0.046)
Broker up (Wave 2)					0.035	0.031
					(0.030)	(0.030)
Broker down (Wave 2)					0.103**	0.101**
					(0.039)	(0.038)
Campaign activity in 2016 (0,9)	0.011	0.011		0.015†	0.010	0.009
	(0.008)	(0.008)		(0.008)	(0.008)	(0.008)
NPP pres. vote swing at polling station 2012 to 2016	−0.048	−0.058	−0.117	0.123	0.092	−0.062
	(0.324)	(0.323)	(0.329)	(0.313)	(0.311)	(0.324)
Constituency FEs	Y	Y	Y	Y	Y	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y	Y	Y
Observations	844	844	863	844	844	844
Adjusted R^2	0.162	0.161	0.161	0.156	0.163	0.170

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors clustered by polling station. All models are OLS. The DV is an indicator for receiving major patronage in Period 3. Restricted to branch executives in their positions during Period 3.

payments are instead rewards for the effort brokers exert for the party (brokers' inputs), we also include our index of brokers' campaign activity in 2016 (conducted during Period 1), as well as indicators for engaging in two forms of post-election "relational clientelism" in the year after the election (during Period 2): whether branch executives were active connecting voters to district and party elites for benefits (*broker up*) or helped the party distribute benefits to voters (*broker down*).[48] In addition, we include the same measure of performance from Table 5 – polling station-level vote swing – to assess whether payments in Period 3 are awarded based on observed ability to deliver votes (brokers' outputs).

We find that payments in the electoral off-cycle are significantly predicted by brokers' embeddedness with local elites – which corresponds with what many brokers paid in this period believed (Table 4). In Column 1 of Table 6, moving from the 10th (0.04) to 90th (0.44) percentile of *connections up* predicts being 11.8 percentage points more likely to receive major benefits. Column 2 of Table 6 disaggregates *connections up* into connections to local politicians, bureaucrats, or constituency party executives. Only ties to local party elites are reliably associated with payments. Further analysis demonstrates that this relationship is primarily explained by the distribution of jobs to brokers (pg. SI.17).

By contrast, we find only limited evidence in Columns 1 and 2 that major payments in Period 3 are retrospective rewards for campaign work or post-election activism. While *broker down* – whether brokers help the party find voters to target with benefits – is also correlated with receiving payment, *broker up* – our measure of whether brokers help solve clients' problems by linking them to the party or government – is instead *negatively* correlated with payment. This latter result is at odds with brokers being systematically rewarded for their work. Campaign activism in 2016 is also not consistently correlated with payment and there is no evidence that payments in this period reward observed electoral performance, in direct contrast to Period 2. Column 4 shows that similar

[48] Summary statistics and correlations between these variables are on pg. SI.7. Overall, the respondents who engage in the most campaign activism are often different from those engaged in the most post-election brokerage activity.

relationships persist when *connections up* is not included in the model.

One potential concern is that *connections up* instead proxies for future electoral performance or current (as opposed to past) engagement in relational clientelism. It is not possible to perfectly anticipate future electoral performance. But the most reliable indicator of future performance available to local party leaders is past election performance. Past performance is uncorrelated with payment, including when *connections up* is not included (Column 4). To consider whether payments reward current activism, in Columns 5 and 6 we include measures of *broker up* and *broker down* collected in wave two. The evidence that brokers are rewarded for activism is again ambigiuous. While the *broker up* variable is uncorrelated with payments, *broker down* activism again predicts payment.

The positive association between *broker down* and major payments in both survey waves suggest that some payments that local party elites distribute in Period 3 reward activism, especially work that local party leaders have directly asked brokers to conduct on their behalf (e.g., identifying beneficiaries for a state welfare program). Consistent with the existing literature on relational clientelism (e.g., Auyero 2000, Zarazaga 2014) and our argument above, in additional tests we show that *connections up* predicts both *broker up* and *broker down* (pg. SI.19). Yet crucially, regardless of whether we control for *broker up* and *broker down*, *connections up* still positively and significantly predicts payments (Columns 1, 3, and 6). Moreover, in models similar to Column 6 of Table 6, there are also no statistically significant interactions between *connections up* and whether brokers are currently engaged in activity (*broker up* or *broker down*) (pg. SI.20). Together, these patterns suggest that the party deviates from purely rewarding brokers for their work in Period 3 and pays them based on upward ties to local elites.

There may also be a broader concern that the relationship between *connections up* and major payments in Period 3 is not due to brokers' network ties, but to some other characteristics correlated with *connections up*. All models in Table 6 already include individual-level demographic controls, such as the years each branch executive has been active in the party and whether they are a relative

Table 7: Predictors of change in receiving major patronage in non-electoral period (2018-2019)

	Dependent variable:		
	Δ in total major patronage (2018-2019)		
	First difference model		
	(1)	(2)	(3)
Δ in connections up	1.225***		1.318***
	(0.275)		(0.278)
Δ in connections up – politicians		0.063	
		(0.171)	
Δ in connections up – bureaucrats		0.913**	
		(0.282)	
Δ in connections up – const. execs.		0.487**	
		(0.160)	
Δ in broker up	0.057	0.061	
	(0.055)	(0.055)	
Δ in broker down	0.158*	0.155*	
	(0.062)	(0.062)	
Δ in assets	0.0001	−0.002	0.002
	(0.021)	(0.021)	(0.021)
Constant	0.470***	0.461***	0.451***
	(0.033)	(0.033)	(0.031)
Observations	929	927	929
Adjusted R^2	0.035	0.039	0.024

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors clustered by respondent. First difference models across waves; the DV is the change in the sum of major patronage benefits received. All time invariant covariates drop out.

of constituency party executives.[49] But there still could be unobserved characteristics that explain both *connections up* and Period 3 payments.

Table 7 addresses this possibility with first difference regressions. These models leverage the panel data to examine the impact of *changes in* branch executives' connections up between survey waves. The dependent variable now measures changes in receipt of major patronage benefits. The advantage of a first-difference model is that all demographic attributes, as well as any other time invariant confounders such as polling station or constituency characteristics, are controlled for because they remain constant over the two surveys. This allows us to isolate whether a branch executive developing more *connections up* between 2017 and 2019 increases her probability of being paid by the end of Period 3, irrespective of her other characteristics. Standard errors are now

[49]Table 6 is also robust to controlling for branch positions (e.g., chairman vs. secretary).

clustered at the individual level.

Table 7 finds that changes in *connections up* strongly predict receiving more major patronage. Positive changes in upward connections to both constituency party executives and local bureaucrats now predict positive changes in major benefits received.[50] Moreover, Columns 1 and 3 show that developing more upward connections predicts receiving more high value payments regardless of whether we control for changes in brokers' actual activity across the survey waves. In addition to being rewarded for existing levels of embeddedness in party networks (Table 6), the patterns in Table 7 suggest that brokers are also rewarded for actively developing new ties to local elites over time. There is again also evidence that the party separately distributes benefits to brokers who the party increasingly tasks with work – change in *broker down* activism is positive. But some benefits being distributed to reward increased activism is not inconsistent with a hybrid distribution system; importantly, Column 1 shows that even when controlling for any changes in activism, changes in *connections up* continue to predict payment.

6 Alternative arguments

We also consider four additional sets of alternative explanations. First, there is little evidence that brokers also receive alternative payments beyond those we capture on our survey, such as if brokers separately skimmed from benefits meant for voters or extracted rents from voters. Unlike in other contexts (e.g., Auerbach 2016), we encountered no discussion during fieldwork that brokers routinely charge fees to clients. Our panel also allows us to indirectly test for this possibility through changes in brokers' personal economic conditions. Once controlling for payments in Table 2, there are no additional economic returns to being a broker that might indicate unobserved streams of compensation (pg. SI.5).

[50] Sample sizes differ between Table 6 and Table 7 because of missingness on some controls. The results in Table 7 are robust to subsetting only to observations in Table 6.

Second, what we interpret as a strategic decision by local party elites to reward embeddedness could instead be non-strategic behavior. It may simply be easier for local party elites to distribute the goods they control to brokers to whom they are related or happen to be more socially proximate. This is unlikely to account for our results, however. We already control for whether each branch executive is related to a constituency party executive, their Member of Parliament, local mayor, or district assembly member. We find no evidence that these variables predict receiving major patronage during Period 3, when most high value benefits were distributed. This non-strategic view is also at odds with the clear evidence of strategic payments for performance in Period 2. Moreover, an alternative measure of proximity to party elites – the distance from each brokers' home to the constituency party office, which may proxy for how often a broker is simply in the presence of constituency party executives – is uncorrelated with access to patronage (pg. SI.21).

Third, there may be an additional logic at play alongside the dynamics we uncover. For example, variation in payments could be due to a brokers' ability to credibly threaten to defect to a rival party (Novaes 2018). If threats of defection explain payments, brokers with the lowest ability to defect should be paid least. Threats of defection are least credible in strongholds of the NPP, where the NDC only has a limited presence, compared to more ethnically diverse, politically competitive polling stations where both parties have robust organizations. Yet we find the same patterns in both types of areas, and an overall higher amount of patronage distributed to brokers in NPP stronghold regions where defection is least likely (pg. SI.13). Moreover, very few respondents (n=8) believe threats of defection would be a successful way to induce more payment (Table 3). Instead, receiving major patronage in Period 3 is systematically correlated with doing the opposite of trying to defect: drawing yourself *closer* to the party by developing more ties to party leaders (Table 7).

Last, and most broadly, it is possible to cast doubt on any other alternative accounts for the patterns above by returning to branch executives' own explanations for their compensation, as examined in Tables 3 and 4. Because the brokers themselves report the hybrid payment system we describe, it is only possible to believe other payment logics are operating instead if we believe our

respondents systematically misunderstood why they were being paid.

7 Conclusion

Using a panel survey of brokers in Ghana's ruling party, we show that the party compensates its grassroots agents with a range of payments across the electoral cycle. Consistent with existing literature, the party rewards a small subset of branch executives who performed well immediately after the election. But the large bulk of payments to branch executives are given years later, during the electoral off-cycle. In this non-electoral period grassroots agents who already have or who develop upward ties to local elites get rewarded. We argue that this is because of the decentralized way in which parties distribute payments. In practice, local party elites control payments to grassroots agents. These elites have an incentive to use patronage to consolidate their ties to brokers, expecting that brokers will then help the elites fulfill their private career goals. It is only through recognizing the private incentives of these mid-level party actors that we can fully understand broker payment systems within clientelist democracies.

While we expect our argument to extend to other machine parties, there are several scope conditions. First, our findings may not apply where brokers are pure free agents and party organizations simply do not exist outside of campaign periods (Novaes 2018). In these extreme situations, there is likely no means for party leaders to commit to compensating brokers other than through immediate, upfront payments during campaigns. Second, we recognize that payments to non-party brokers who never officially work for a party – such as chiefs or union leaders – may follow different logics (Holland and Palmer-Rubin 2015). Third, the NPP was an opposition party during the 2016 election campaign. It is possible that the level of compensation in direct electoral periods is higher in ruling parties that already have access to state resources. But, theoretically, we expect ruling parties to behave similarly. Given the difficulty of observing labor inputs, the ruling party should still defer most payments until after the election. In addition, because many of the patronage benefits available to the ruling party are both scarce relative to broker demand and have

revocable or short-term benefits, having already distributed some benefits in a prior term does not prevent the ruling party from holding out new payments as inducements.

Ultimately, our results have important normative implications for democracy in low- and middle-income countries. Scholars typically view patronage by party machines as bad for governance because its diverts and misallocates often scare public resources. Indeed, we estimate that in 2018-2019 alone, the NPP diverted more than 18,000 public sector jobs and 14,000 loans to its brokers. This may be just the tip of the iceberg: these brokers were active, in turn, securing benefits for voters. These practices can jeopardize the public social programs from which such benefits are often diverted, with significant implications for the study of state welfare provision in these contexts.

Yet, paradoxically, the machine's compensation of brokers may also have positive implications for democracy. If payments in the off-cycle have the (perhaps unintended) effect of discouraging brokers' and local elites' defection, they facilitate party stability (Muñoz and Dargent 2016). Party institutionalization is important for lowering electoral stakes, improving accountability, and allowing for peaceful alternations in power (Riedl 2014, Mainwaring 2018). By lengthening brokers' time horizons, the hybrid payment system might even allow a party to mobilize its workforce at *lower* aggregate cost to the public than in an alternative system in which brokers who can more credibly threaten to defect have more leverage to secure payments (Novaes 2018).

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Online Appendix (Supporting Information) for "Paying Party Brokers"

Contents

A Survey sampling procedure (pg. 13)

We surveyed all NPP branches at 200 polling stations in 10 parliamentary constituencies.[SI.1] Interviews for Wave 1 were conducted immediately after the branch elections in January and February 2018. Interviews for Wave 2 were with the same brokers and took place between July and August 2019. Of the 1,140 brokers interviewed in the first survey, we successfully re-interviewed 1,001 (88%).

The sample was selected in several stages. First, we restricted focus to five administrative regions of Southern Ghana. The five eligible regions – Ashanti, Greater Accra, Volta, Central and Eastern – cover both the main strongholds of each party and some of the country's most competitive swing areas.

Second, we randomly selected 10 parliamentary constituencies by stratifying all constituencies in each of these regions by two variables – electoral competition and urban status – to create six blocks. We measure electoral competition using results from the 2016 presidential election; constituencies with over 60% of the vote for the NPP (NDC) were coded as NPP (NDC) strongholds. The number of constituencies selected from each of six blocks was proportional to block size. The selected constituencies were as follows:

- Urban NPP stronghold (2): Manhyia South (Ashanti Region), Dome Kwabenya (Greater Accra Region)
- Urban NDC stronghold (1): Ho Central (Volta Region)
- Urban competitive (2): Ayawaso Central (Greater Accra Region), Bortianor Ngleshie Amanfrom (Greater Accra Region)
- Rural NPP stronghold (2): Assin South (Central Region), Atwima Mponua (Ashanti Region)
- Rural NDC stronghold (1): North Tongu (Volta Region)
- Rural competitive (2): Agona East (Central Region), Lower Manya Krobo (Eastern Region)

Third, we drew a random sample of 20 polling stations within each of the 10 constituencies. In the urban constituencies we first stratified on ethnic diversity and wealth, measured using community-level census data (from 2010), creating six blocks after dividing polling station into above- and below-median wealth and into three ethnic categories: homogenous (>80% from single group), diverse-polarized (<80% from single group, above median ethnic polarization), diverse-non-polarized (<80% from single group, below median ethnic polarization). The selection probability was again proportionate to block size. Within the rural constituencies we stratified

SI.1

These polling stations became 232 party branches starting from 2018 with the further division of some of the polling stations by the Electoral Commission.

polling stations on the ethnic diversity measures only, given the much more limited variation in census measures of wealth in rural areas.

B Attrition of respondents (pg. 14)

Table OA.1 displays the correlates of attrition. A total of 155 respondents attrited between the two survey waves. In column 1, we include polling station fixed effects. In column 2, we instead include constituency fixed effects, and polling station controls. The only individual-level variable that is correlated with attrition is whether the respondent was newly elected to a branch position in the NPP's intra-party elections in 2018. This is by default, as we did not attempt to re-interview wave one respondents who had already retired from party life leading into the 2018 internal branch elections.[SI.2] Importantly, attrition is not correlated with broker payments: brokers who received either major or small patronage in period 2 (immediately after the general election in 2016) were just as likely as any other respondents to remain in the sample. Attrition is also not correlated with any other demographic characteristics.

SI.2

These are the small set of respondents who were incumbent branch chairmen, women's organizers, or organizers during the 2016 election, but did not recontest their positions in 2018.

Table OA.1: Individual-level correlates of attrition

	Dependent variable:	
	Attrit (0,1)	
	(1)	(2)
Campaign index (0,9)	0.003	−0.0001
	(0.006)	(0.005)
Newly elected	−0.144***	−0.104***
	(0.027)	(0.024)
Age	0.001	0.001
	(0.001)	(0.001)
Female	−0.005	−0.005
	(0.026)	(0.025)
Relative of chief	−0.009	−0.014
	(0.029)	(0.026)
Relative of constituency executive	0.017	−0.013
	(0.054)	(0.048)
Relative of district assembly member	−0.037	−0.039
	(0.040)	(0.035)
Relative of MP/DCE	0.074	0.032
	(0.071)	(0.064)
Local ethnic minority	−0.011	0.0004
	(0.033)	(0.024)
Live outside polling station community	−0.051	−0.056
	(0.052)	(0.046)
Petty trader	0.025	0.021
	(0.039)	(0.035)
Work in formal sector	−0.009	0.008
	(0.029)	(0.027)
Education (secondary)	−0.012	−0.021
	(0.026)	(0.023)
Education (tertiary)	0.070	0.058
	(0.045)	(0.041)
Asset index	0.006	0.001
	(0.008)	(0.007)
Years active in NPP	0.001	0.001
	(0.002)	(0.001)
Years in community	−0.001	−0.001
	(0.001)	(0.001)
Major patronage (Period 2)	0.008	0.041
	(0.039)	(0.036)
Minor patronage (Period 2)	−0.006	−0.020
	(0.035)	(0.032)
Distance from PS to district capital (km)		0.001
		(0.002)
Community-level wealth		0.027
		(0.024)
Observations	1,125	1,125
R^2	0.246	0.067
Adjusted R^2	0.065	0.041
Note:	*p<0.1; **p<0.05; ***p<0.01	

C Ruling out skimming and rent extraction (pg. 15 and pg. 29)

Our analyses use two main measures of payments to branch leaders: the indicators for major and minor payments defined in Table 2. Tables OA.2 and OA.3 help validate that these measures provide a comprehensive account of broker payments. If they were not fully characterizing the payments being made to brokers, we should be able to detect the presence of others payments indirectly by observing changes across the survey waves in branch leaders' personal economic conditions.

We examine three changes in economic conditions: (i) changes between survey waves in each respondent's self-evaluation of their personal economic situation compared to the previous year ("pocketbook evaluation");[SI.3] (ii) changes between survey waves in each respondent's consumer confidence, measured as their likelihood of making a "big purchase" in the near future;[SI.4] and (iii) changes between survey waves in their score on our household asset index.[SI.5]

These three variables are the outcomes in Table OA.2, which leverages the fact that our survey sample includes all aspirants for branch leadership positions in the 2018 internal branch elections at each polling station in the sample. Columns 1, 3, and 5 restrict to all branch positions in which there was a contested election among competing aspirants (most positions went uncontested). With branch-position fixed effects, we find no differences in each measure of economic conditions between the winning and losing aspirants for the same exact positions, controlling for our two measures of patronage. This suggest there is no remaining economic return to having won a branch position not already captured in our two patronage variables. Columns 2, 4, and 6 show similar null results using branch fixed effects to compare winning and losing aspirant regardless of which specific position they contested.

Next, using the full sample of respondents, Table OA.3 shows that having received major patronage benefits at some point in the electoral cycle is strongly correlated with improvement in two of the three economic indicators (pocketbook evaluation and consumer confidence). By contrast, our minor patronage variable is not correlated with any measure of respondents' economic situation. This validates that our distinction between major and minor patronage (Table 2) captures

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SI.3 This question is: *"Compared to 1 year ago, is your household doing better economically, doing worse, or is it about the same?"*

SI.4 This question is: *"Sometimes people make big purchases, such as buying new equipment for their business or new roofing material for their home. How likely are you to make a big purchase like this in the next 6 months?"*

SI.5 This is the sum of a 10-item index of basic household assets.

substantively important differences in the value of these benefits. Table OA.3 also shows that brokerage activities between the two survey waves are uncorrelated with brokers' economic outlook once already controlling for our two main measures of payment. This again suggests that there are not major additional benefits from brokerage activity – such as if brokers skimmed from benefits meant for voters or charged voters fees – not already captured in our two measures.

Table OA.2: Economic returns to being a branch leader: winners vs. losers

	Dependent variable:					
	Δ in pocketbook evaluation		Δ in consumer confidence		Δ in household assets	
	(1)	(2)	(3)	(4)	(5)	(6)
Selected to branch position in 2018 (0,1)	0.119	0.044	0.123	−0.071	0.155	−0.027
	(0.206)	(0.098)	(0.267)	(0.101)	(0.232)	(0.126)
Received major patronage across Periods 1-3 (0,1)	−0.125	0.042	−0.277	0.091	−0.201*	−0.075
	(0.375)	(0.049)	(0.404)	(0.061)	(0.118)	(0.128)
Received minor patronage across Periods 1-3 (0,1)	−0.122	−0.039	−0.046	−0.035	−0.535***	−0.342***
	(0.269)	(0.054)	(0.351)	(0.057)	(0.122)	(0.120)
Branch-positions FEs	Y	N	Y	N	Y	N
Branch FEs	N	Y	N	Y	N	Y
Data subset:	Contested positions only	All contestants	Contested positions only	All contestants	Contested positions only	All contestants
Observations	147	983	147	983	147	983
Adjusted R^2	−0.034	0.094	0.010	0.125	0.204	0.086

Notes: † significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. OLS regressions with standard errors clustered by branch (polling station). Columns 1, 3, and 5 are subset to all aspiring branch leaders who contested for branch leadership positions with multiple aspirants in the 2018 intra-party elections; the "Selected to branch position" variable compares winners – those selected as brokers – to losers – those who failed to become brokers. Columns 2, 4, and 6 include all aspiring branch leaders seeking positions in 2018, regardless of whether the specific position they sought was contested.

Table OA.3: Economic returns to payments and brokerage activity

	Dependent variable:		
	Δ in pocketbook evaluation	Δ in consumer confidence	Δ in household assets
	(1)	(2)	(3)
Received major patronage across Periods 1-3 (0,1)	0.094**	0.096**	−0.009
	(0.043)	(0.046)	(0.105)
Received minor patronage across Periods 1-3 (0,1)	−0.023	−0.040	−0.242**
	(0.050)	(0.046)	(0.105)
Broker up (Wave 2)	−0.058	0.073	0.152
	(0.044)	(0.046)	(0.094)
Broker down (Wave 2)	0.080	−0.114**	−0.022
	(0.057)	(0.055)	(0.116)
Branch FEs	Y	Y	Y
Individual-level controls	Y	Y	Y
Observations	916	916	916
Adjusted R^2	0.036	0.113	0.055

Notes: † significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. OLS regressions with standard errors clustered by branch (polling station). Subset to all branch leaders in their positions during the Wave 2 survey.

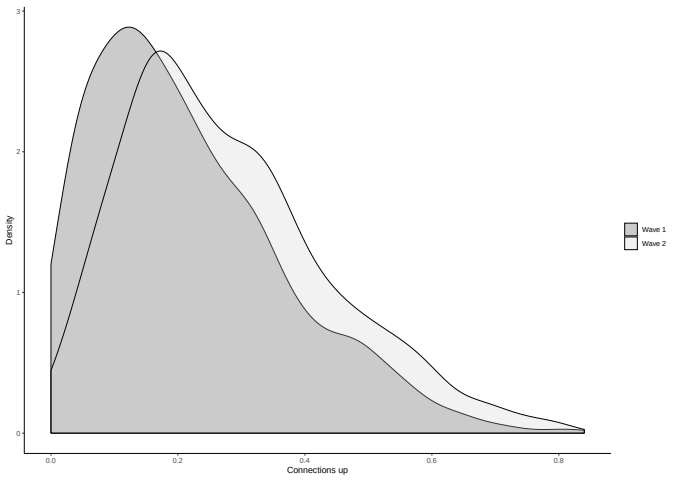
D Measuring *connections up* (pg. 16)

Our connections up variable tests respondents on the names and numbers of 13 public officials or local party elites. We ask respondents first if they can name the official (politician, bureaucrat or constituency party executive), and then to provide the last four digits of their phone number(s). Respondents could not go ask for help or look up names somewhere else – to indicate the presence of a real existing connection, this test measures whether they could immediately name officials and find numbers already saved in their phones.

We code correct answers for the items that comprise the *connections up* measure in two ways. First, responses are marked as correct if they match the name or one phone number from a list of these officials' names and contact information collected in each constituency by a team of research assistants immediately prior to the survey. This list was fully updated before the wave two survey. Second, to allow for the possibility that officials go by nicknames and/or have additional phone numbers, any responses are also marked as correct if 3 or more of the respondents quizzed about a particular official report that same nickname and/or alternative phone number.

Figure OA.2 displays the distribution of the *connections up* variable in wave one and wave two of the survey. The figure shows that on average, respondents had more upward ties in the second wave. Mean *connections* up was 22% in wave one and 28% in wave two. The standard deviation was 1.5 percent in wave one and 1.6 percent in wave two.

Figure OA.2: Distribution of connections up variable in each wave



E Campaign and brokerage activities of branch leaders (pgs. 17 and 26)

We use the survey to measure brokers' participation in both electoral and relational clientelism. In Table OA.4, *Campaign activity in 2016* sums activities conducted during the 2016 presidential and parliamentary campaigns. This is the main measure of campaign season activism in the paper.

Branch leaders on average performed about four of the nine activities listed (mean = 4.56); a majority reported that they canvassed, organized voters to attend rallies, and distributed handouts. We only measure campaign activity in the first wave of the survey, because this was nearest in time with the 2016 campaign.

Our measures of "broker up" and "broker down" are dichotomous variables that take a value of 1 when the respondent engages in any of the relevant activities. We collect data on these variables in both waves of the survey. The *broker up* variable measures two possible actions: helping citizens contact (i) party officials to discuss their problems and (ii) local government officials to discuss their problems. In wave one, 48% of respondents engaged in at least one of these activities. In wave two, 47% did. The *broker down* variable is composed of a single action: helping the party to identify recipients for government benefits in the community. In wave one, 31% of respondents engaged in this activity. In wave two, 21% of respondents did.

Overall, the respondents who engage in the most campaign activism are often different people from the respondents who engage in the most post-election brokerage activity. Table OA.5 presents pairwise correlations for the variables in Table OA.4.

Table OA.4: Summary of activities that branch leaders perform

Statistic	N	Mean	St. Dev.	Min	Max
Wave one					
Campaign activity in 2016 (0,9)	1,129	4.563	2.057	0	9
1. House-to-house canvassing	1,152	0.920	0.271	0	1
2. Organize people to attend rallies	1,150	0.774	0.418	0	1
3. Organize community events	1,149	0.664	0.473	0	1
4. Distribute handouts (food, cloth, cash, t-shirts, phone credit)	1,150	0.570	0.495	0.	1
5. Organize transport for voters on election day	1,150	0.544	0.498	0	1
6. Provide financial assistance to people	1,146	0.449	0.498	0	1
7. Coordinate with the chief on behalf of the party	1,143	0.302	0.459	0	1
8. Personally drive voters to polling stations on election day	1,146	0.183	0.387	0	1
9. Help people find jobs	1,148	0.136	0.343	0	1
Broker up (0,1)	1,152	0.482	0.500	0	1
1. Help citizens contact party to discuss their problems	1,152	0.475	0.500	0	1
2. Help citizens contact local govt. to discuss their problems	1,152	0.356	0.479	0	1
Broker down (0,1)	1,152	0.308	0.462	0	1
1. Help party identify local citizens to provide with benefits	1,152	0.308	0.462	0	1
Wave two					
Broker up (0,1)	997	0.469	0.499	0	1
1. Help citizens contact party to discuss their problems	997	0.423	0.494	0	1
2. Help citizens contact local govt. to discuss their problems	997	0.236	0.425	0	1
Broker down (0,1)	997	0.212	0.409	0	1
1. Help party identify local citizens to provide with benefits	997	0.212	0.409	0	1

Table OA.5: Pairwise correlations among broker activities

	Campaign activity in 2016	Broker up (wave one)	Broker down (wave one)	Broker up (wave two)	Broker down (wave two)
Campaign activity in 2016	1.00	0.36	0.18	0.11	0.10
Broker up (wave one)	0.36	1.00	0.68	0.16	0.08
Broker down (wave one)	0.18	0.68	1.00	0.09	0.04
Broker up (wave two)	0.11	0.16	0.09	1.00	0.23
Broker down (wave two)	0.10	0.08	0.04	0.23	1.00

F Campaign activity and campaign season payment (pg. 17)

If brokers were paid an upfront or contemporaneous salary for the campaign season activity, payments received in Period 1 – during the 2016 campaign – should be correlated with campaign activity. Table OA.6 shows that they are not. These regressions are subset to all branch leaders in their positions as of the 2016 campaign.

Table OA.6: Campaign activity and campaign payment: 2016 election

Outcome: campaign activity index (0,9)	1	2	3
Paid during 2016 campaign (0,1)	−0.088		
	(0.171)		
Paid major patronage during 2016 (0,1)		0.407	
		(0.303)	
Paid minor benefits during 2016 (0,1)		0.140	
		(0.151)	
Paid cash during 2016 (0,1)			−0.071
			(0.222)
Individual-level controls	Y	Y	Y
Branch-level controls	Y	Y	Y
Constituency FEs	Y	Y	Y
N	728	728	728
adj. R^2	0.214	0.214	0.214

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. OLS regression subset to branch executives serving as of the 2016 election. Standard errors in parentheses are clustered by polling station branch.

G Analyses for minor payments (pgs. 21 and 23)

Tables OA.7 and OA.8 repeat Tables 5 and 6 from the main text but switch the outcome variable to minor payments rather than major payments (see Table 2). Unlike for major patronage payments, minor payments in both periods follow no clear pattern. Minor payments in Period 2 did not reward polling station-level electoral performance. Minor payments in Period 3 did not reward well-connected brokers. We believe this is because the party does not exert much effort towards the strategic targeting of these low-value gifts and handouts. Instead, they are often simply given out to branch leaders as perfunctory tokens of appreciation at party gatherings and rallies. For example, unlike the targeting of valuable jobs and loans, it is common for constituency party leaders to "dash" a small amount of cash to brokers as "TnT" (travel and transport) or for "refreshment" (buying a meal) at the end of party events as a thank you for coming. This does not require any substantive relationship with the broker and is not explicitly meant to reward performance or loyalty.

Table OA.7: Minor patronage payments immediately after the election

	Dependent variable:		
	Minor patronage (2017)		
	(1)	(2)	(3)
NPP pres. vote swing at polling station 2012 to 2016 (%)	−0.289	0.001	
	(0.385)	(0.323)	
NPP pres. vote swing at polling station 2012 to 2016 (raw votes)			−0.0001
			(0.0004)
Campaign activity in 2016 (0,9)	−0.005	−0.008	−0.004
	(0.007)	(0.007)	(0.008)
Connections up (%)	0.072	0.023	0.027
	(0.101)	(0.100)	(0.101)
NPP pres. vote swing at constituency 2012 to 2016		1.077*	
		(0.632)	
Constituency FEs	Y	N	Y
Individual-level controls	Y	Y	Y
Polling station-level controls	Y	Y	Y
Observations	722	722	700
Adjusted R^2	0.054	0.002	0.066

Notes: † significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. OLS regression subset to branch executives serving as of the 2016 election (prior to the 2018 branch elections). Standard errors in parentheses are clustered by polling station branch in columns 1-3. The main explanatory variable in column 1-2 is the vote share swing for the NPP presidential candidate at each polling station, calculated as 2016 vote share - 2012 vote share. In column 3 this is instead the swing in raw votes.

Table OA.8: Predictors of minor patronage in the non-electoral period (2018-2019)

	Dependent variable:					
	Minor patronage (2018-2019)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections up	−0.066		−0.083			−0.095
	(0.108)		(0.106)			(0.105)
Connections up - politicians		−0.154^{+}				
		(0.083)				
Connections up - bureaucrats		0.163				
		(0.144)				
Connections up - const execs.		0.009				
		(0.084)				
Broker up (wave 1)	−0.020	−0.021		−0.023		−0.031
	(0.041)	(0.041)		(0.041)		(0.041)
Broker down (wave 1)	0.045	0.047		0.045		0.045
	(0.041)	(0.041)		(0.041)		(0.040)
Broker up (wave 2)					0.045	0.045
					(0.031)	(0.030)
Broker down (wave 2)					0.106*	0.109*
					(0.043)	(0.043)
Campaign activity in 2016 (0,9)	−0.004	−0.003		−0.005	−0.008	−0.006
	(0.008)	(0.008)		(0.008)	(0.008)	(0.008)
NPP pres. vote swing at polling station 2012 to 2016 (%)	0.055	0.060	0.144	0.016	−0.010	0.044
	(0.358)	(0.359)	(0.365)	(0.356)	(0.344)	(0.351)
Constituency FEs	Y	Y	Y	Y	Y	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y	Y	Y
Observations	844	844	863	844	844	844
Adjusted R^2	0.181	0.183	0.189	0.182	0.194	0.193

Notes: † significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors cluster by polling station (branch). OLS regressions in which the DV is a binary indicator for receiving minor patronage in Period 3.

H Replication of Table 5: Logit model (pg. 22)

Table OA.9 below replicates Table 5 columns 1-3 of the main paper, changing the OLS model to a logit model. The coefficients on the explanatory variables of interest remain statistically significant in the directions shown in the main paper. We do not replicate Table 5 columns 4-6 because in these models the DV is not dichotomous.

Table OA.9: Logistic models (replication of Table 5: cols 1-3)

	Dependent variable:		
	Major patronage (2017)		
	(1)	(2)	(3)
NPP pres. vote swing at polling station 2012 to 2016 (%)	9.220**	6.617*	
	(3.702)	(3.429)	
NPP pres. vote swing at polling stat 2012 to 2016 (raw votes)			0.011**
			(0.005)
Campaign activity in 2016 (0,9)	0.143*	0.075	0.181**
	(0.083)	(0.077)	(0.089)
Connections up (%)	1.346	0.735	1.288
	(0.980)	(0.939)	(1.029)
NPP pres. vote swing at constituency 2012 to 2016		−19.930***	
		(7.366)	
Constituency FEs	Y	N	Y
Individual-level controls	Y	Y	Y
Polling station-level controls	Y	Y	Y
Observations	722	722	700
Log Likelihood	−192.751	−208.245	−183.140
Note:			*p<0.1; **p<0.05; ***p<0.01

I Payments in stronghold vs. non-stronghold areas (pg. 22 and pg. 30)

Table OA.10 replicates Column 1 from Table 6 in the main text to examine how major patronage payments in the non-electoral period (Period 3) vary with the overall partisanship of each parliamentary constituency. Overall, significantly more major patronage payments were made in both NPP stronghold and competitive constituencies compared to NDC strongholds. This is consistent with there being significantly less patronage to distribute overall in opposition party areas, but inconsistent with an expectation that brokers extract payments based on their leverage to threaten defection.

Importantly, interaction terms in columns 2 and 4 show that the relationship between *connections up* and major patronage payments does not significantly vary with the partisanship of each constituency. More upwardly connected brokers still receive the same payments in core NPP stronghold constituencies as in more competitive areas, or in opposition areas. This is inconsistent with a threat of defection explaining these payments. Brokers in NPP stronghold areas are those with the least leverage to plausibly defect to the NDC, yet they receive the same pattern of payments.

Table OA.10: Major patronage in Period 3 interacted with constituency competitiveness

	Dependent variable:			
	big_pat_after2			
	(1)	(2)	(3)	(4)
Connections up (Wave 1)	0.345***	0.551**		
	(0.118)	(0.249)		
Connections up (Wave 2)			0.553***	0.628***
			(0.097)	(0.215)
NPP stronghold constituency	0.208***	0.278***	0.173***	0.198**
	(0.050)	(0.086)	(0.047)	(0.083)
Competitive constituency (0,1)	0.171***	0.206***	0.160***	0.181**
	(0.050)	(0.072)	(0.048)	(0.072)
Connections up (Wave 1) * NPP stronghold constituency		−0.323		
		(0.299)		
Connections up (Wave 1) * Competitive constituency (0,1)		−0.164		
		(0.270)		
Connections up (Wave 2) * NPP stronghold constituency (0,1)				−0.096
				(0.254)
Connections up (Wave 2) * Competitive constituency (0,1)				−0.086
				(0.241)
Urban constituency	0.027	0.027	0.031	0.030
	(0.053)	(0.053)	(0.048)	(0.048)
Observations	844	844	844	844
R^2	0.144	0.145	0.184	0.184
Adjusted R^2	0.115	0.115	0.157	0.155

Notes: † significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors cluster by polling station (branch). The omitted category is NDC stronghold constituency.

J Replication of Table 5 dropping data from outlier stations (pg. 23)

Table OA.11 replicates Table 5 of the main paper. In Table OA.11, we exclude data from stations that are outliers on NPP vote swing between the 2012 and 2016 elections (our main explanatory variable). Following the standard statistical definition, we define a station as being an outlier when the vote swing is 1.5 times larger or smaller than the median vote swing plus the interquartile range. A total of 15 stations are outliers on percent NPP vote swing, and 19 stations on the swing in raw NPP votes. The results are robust to these changes in model specification. The magnitudes of the coefficients on NPP vote swing are in fact larger than those we report in the main paper.

Table OA.11: Robustness check – OLS dropping outliers in vote swings

	Dependent variable:					
	Major patronage (2017)					
	(1)	(2)	(3)	(4)	(5)	(6)
NPP pres. vote swing at polling station 2012 to 2016 (%)	0.861**	0.822**		0.889*	1.008**	
	(0.424)	(0.400)		(0.470)	(0.447)	
NPP pres. vote swing at polling station 2012 to 2016 (raw votes)			0.002***			0.002***
			(0.001)			(0.001)
Campaign activity in 2016 (0,9)	0.008	0.002	0.010*	0.003	−0.013	0.012
	(0.006)	(0.006)	(0.006)	(0.014)	(0.013)	(0.015)
Connections up	0.100	0.071	0.086	0.246	0.173	0.070
	(0.102)	(0.103)	(0.097)	(0.193)	(0.187)	(0.197)
NPP pres. vote swing at constituency 2012 to 2016		−1.353**			−1.273*	
		(0.530)			(0.765)	
Constituency FEs	Y	N	Y	Y	N	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y	Y	Y
Observations	655	655	620	169	169	160
R^2	0.122	0.082	0.137	0.337	0.224	0.355
Adjusted R^2	0.080	0.050	0.093	0.198	0.113	0.211
Note:						*p<0.1; **p<0.05; ***p<0.01

K Replication of Table 6: logistic regression (pg. 22)

Table OA.12 below replicates Table 6 of the main paper, changing the OLS models to logit models. The coefficients on the explanatory variables of interest remain statistically significant in the directions shown in the main paper.

Table OA.12: Table 6: Logistic regression

	Dependent variable:					
	Major patronage (2018-2019)					
	(1)	(2)	(3)	(4)	(5)	(6)
Connections Up (Wave 1)	1.829**		2.040**			1.673*
	(0.679)		(0.655)			(0.682)
Connections up – politicians (Wave 1)		0.365				
		(0.576)				
Connections up – bureaucrats (Wave 1)		−0.135				
		(0.891)				
Connections up – const. execs. (Wave 1)		1.154*				
		(0.579)				
Broker up (Wave 1)	−0.429	−0.435		−0.362		−0.506+
	(0.278)	(0.278)		(0.275)		(0.281)
Broker down (Wave 1)	0.549+	0.545+		0.535+		0.567*
	(0.282)	(0.282)		(0.280)		(0.285)
Broker up (Wave 2)					0.263	0.236
					(0.198)	(0.200)
Broker down (Wave 2)					0.603**	0.604**
					(0.216)	(0.218)
Campaign activity in 2016 (0,9)	0.069	0.068		0.095+	0.067	0.060
	(0.052)	(0.052)		(0.051)	(0.049)	(0.052)
NPP pres. vote swing at polling station	−0.491	−0.558	−0.922	0.600	0.429	−0.520
2012 to 2016	(2.429)	(2.434)	(2.401)	(2.358)	(2.370)	(2.440)
Constituency FEs	Y	Y	Y	Y		
Individual-level controls	Y	Y	Y	Y		
Polling station-level controls	Y	Y	Y	Y		
Observations	844	844	863	844	844	844
Log Likelihood	−401.691	−401.243	−412.178	−405.331	−401.516	−396.428
Akaike Inf. Crit.	871.382	874.486	886.356	876.663	869.032	864.857

L Table 6 – Disaggregating major patronage: jobs, training, loans (pg. 26)

Table OA.13 below disaggregates the main components of major patronage –jobs, loans and skills training – and re-analyzes Table 6, columns 1 and 2. The results in Table OA.13 show that the positive correlation between pre-existing *connections up* and major patronage in Table 6 (column 1) for Period 3 is driven by the receipt of jobs. Moreover, ties to constituency executives (Table 6, column 2) are primarily rewarded with the receipt of jobs.

Table OA.13: Major patronage (2018-2019): Disaggregated by jobs, loans, training

	Dependent variable:					
	Job		Loan		Training	
	(1)	(2)	(3)	(4)	(5)	(6)
Connections up (Wave 1)	0.304**		−0.091		0.089	
	(0.100)		(0.066)		(0.068)	
Connections up – politicians (Wave 1)		0.062		−0.037		0.052
		(0.080)		(0.053)		(0.062)
Connections up – bureaucrats (Wave 1)		−0.076		−0.104		0.033
		(0.110)		(0.079)		(0.102)
Connections up – constituency execs. (Wave 1)		0.209*		0.003		0.012
		(0.082)		(0.061)		(0.068)
Broker up (Wave 1)	0.007	0.006	−0.064*	−0.065*	−0.017	−0.016
	(0.036)	(0.036)	(0.025)	(0.025)	(0.026)	(0.026)
Broker down (Wave 1)	0.045	0.045	0.045+	0.045+	0.029	0.029
	(0.039)	(0.039)	(0.024)	(0.023)	(0.029)	(0.029)
Campaign activity in 2016 (0,9)	0.004	0.004	0.0003	0.0002	0.006	0.006
	(0.006)	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)
NPP pres. vote swing at polling station	−0.186	−0.199	0.305	0.299	−0.450+	−0.449+
	(0.274)	(0.275)	(0.186)	(0.186)	(0.245)	(0.246)
Constituency FEs	Y	Y	Y	Y	Y	Y
Indiv. controls	Y	Y	Y	Y	Y	Y
PS. controls	Y	Y	Y	Y	Y	Y
Observations	844	844	844	844	844	844
Adjusted R^2	0.114	0.115	0.264	0.263	0.067	0.065

M Placebo test: past payments and future connections (pg. 24)

There could be concern that *connections up* is endogenous to payments already received. For example, perhaps brokers only develop connections to local elites because they had received a payment – e.g., a public sector job – that brings them into contact with new elites in the party or local government. To demonstrate that this is unlikely to be the main reason that *connections up* predicts Period 3 payments, we conduct a placebo test: in Table OA.14 we regress the change in *connections up* between the wave one and wave two surveys on major payments received in Period 2. Payments received in Period 2 occurred sometime in 2017, prior to the observation of *connections up* in wave two in 2019. If payments caused *connections up*, brokers who got major benefits, such as jobs, should become more connected by 2019 than they had been in 2017. We report estimates both with (Column 2) and without (Column 1) control variables. We find no evidence that *connections up* increases after brokers are paid, inconsistent with this alternative explanation.

Table OA.14: Placebo test: past payments and future connections

	Dependent variable:	
	Δ in *connections up* (wave one to wave two)	
	(1)	(2)
Major patronage in Period 2 (0,1)	0.013	0.016
	(0.015)	(0.013)
Constituency FEs	N	Y
Individual-level controls	N	Y
Polling station-level controls	N	Y
Observations	929	863
Adjusted R^2	0.038	0.101

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors clustered by polling station. All models are OLS. The DV is *connections up* (wave two) - *connections up* (wave one). Column 1 contains no controls. Column 2 contains the full set of controls mentioned in the main text, as well constituency fixed effects.

N *Connections up* predicts *broker up* and *broker down* (pg. 27)

In Table OA.15 we show that respondents' *connections up* in wave one predict their brokerage activity in both survey waves. The table regresses each broker activity measure on *connections up*, with the same controls and restricted to the same respondents as in Table 6 in the main text. However, *connections up* continues to predict payment in Period 3 in Table 6 even when controlling for brokerage activity.

Table OA.15: Broker activity on connections up among sample from Table 6

	Dependent variable:			
	Broker up (wave one)	Broker down (wave one)	Broker up (wave two)	Broker down (wave two)
	(1)	(2)	(3)	(4)
Connections up (Wave 1)	0.612***	0.295*	0.286*	0.221*
	(0.129)	(0.125)	(0.122)	(0.106)
Constituency FEs	Y	Y	Y	Y
Individual-level controls	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y
Observations	863	863	863	863
Adjusted R^2	0.138	0.077	0.135	0.102

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors clustered by polling station. All models are OLS. Restricted to the same respondents as Table 6 in the main text (branch executives in their positions during Period 3).

O Interaction between *connections up* and *broker up* or *broker down* (pg. 27)

Table OA.16 replicates column 6 of Table 6 in the main text, adding interaction terms between *connections up* (wave one) and *broker up* (wave two) and *broker down* (wave two). We find no statistically significant interaction. This suggests that brokers are paid in Period 3 on the basis of their existing upward ties to local elites irrespective of the degree of brokerage work they are currently doing for the party during Period 3.

Table OA.16: Interaction between *connections up* and current brokerage activity

	Dependent variable:	
	Major patronage (2018-2019)	
	(1)	(2)
Connections up (Wave 1)	0.348^{*}	0.250^{+}
	(0.157)	(0.129)
Broker up (Wave 2)	0.061	0.031
	(0.052)	(0.030)
Broker down (Wave 2)	0.101^{**}	0.082
	(0.038)	(0.072)
Connections up * Broker up	-0.140	
	(0.209)	
Connections up * Broker Down		0.080
		(0.260)
Constituency FEs	Y	Y
Individual-level controls	Y	Y
Polling station-level controls	Y	Y
Observations	844	844
Adjusted R^2	0.170	0.169

† significant at $p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Standard errors clustered by polling station. All models are OLS. Replicates the same model in Column 6 of Table 6 in the main text with the added interaction terms.

P Distance from polling station to district capital (pg. 30)

If *connections up* is simply a proxy for the branch leaders who were most often "hanging around" the party's constituency office or the local government office, then we should see that respondents who work at polling stations nearer to the district capital – where the party's constituency office and the local government are situated – are more likely to receive major patronage. Below we replicate Tables 5 and 6 of the main paper highlighting the coefficient for the variable that measures distance from the polling station to the district capital (a control in all our models). In all cases, this coefficient is negative and not statistically significant (see Tables OA.17 and OA.18 below).

Table OA.17: Table 5: coefficient for distance from polling station to district capital

	Dependent variable:					
	Major patronage (2017)					
	(1)	(2)	(3)	(4)	(5)	(6)
Distance between PS and district capital (km)	0.00004	−0.001	0.001	−0.0004	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	722	722	700	184	184	179
R^2	0.113	0.074	0.118	0.304	0.192	0.318
Adjusted R^2	0.075	0.045	0.079	0.172	0.087	0.185
Note:						*p<0.1; **p<0.05; ***p<0.01

Table OA.18: Table 6: coefficient for distance from polling station to district capital

	Dependent variable:					
	Major patronage (2018-2019)					
	(1)	(2)	(3)	(4)	(5)	(6)
Distance between PS and district capital (km)	−0.001	−0.001	−0.0003	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constituency FEs	Y	Y	Y	Y	Y	Y
Individual-level controls	Y	Y	Y	Y	Y	Y
Polling station-level controls	Y	Y	Y	Y	Y	Y
Observations	844	844	863	844	844	844
R^2	0.195	0.196	0.190	0.188	0.195	0.205
Adjusted R^2	0.162	0.161	0.161	0.156	0.163	0.170