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Christa N. Brunnschweiler and Samuel Kwabena Obeng

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Rewarding Allegiance: Political Alignment and Fiscal Outcomes in Local Government

Christa N. Brunnschweiler*and Samuel K. Obeng†

University of East Anglia University of Warwick

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Abstract

We examine how local governments' political alignment with central government affects subnational fiscal outcomes. In theory, alignment could be rewarded with more intergovernmental transfers, or swing voters in unaligned constituencies could be targeted instead. We analyze data from Ghana, which has a complex decentralized system that seeks to preclude political alignment effects. District Chief Executives (DCEs) are centrally-appointed local administrators loyal to the ruling party, while district Members of Parliament (MPs) may belong to another party. A formula for central transfer distribution aims to limit the influence of party politics. Using a new dataset for 1994-2018 we find that despite this system, districts with aligned MPs and DCE receive more transfers, have higher district expenditure, and more internally generated funds. However, it is the swing districts that benefit the most from term to term: the 'safer' districts see lower increases in fiscal outcomes relative to the (potential) 'swing' districts. We also show strong electoral cycle effects, with peaks in fiscal outcomes mid-term and in election years.

JEL codes: H7, D72, H87, O55

Keywords: fiscal federalism, political alignment, Ghana, panel regression

*Christa Brunnschweiler, University of East Anglia, School of Economics, Norwich NR4 7TJ, United Kingdom. E-mail: c.brunnschweiler@uea.ac.uk. Also affiliated with CBESS, University of East Anglia, and OxCarre, University of Oxford.

†Samuel Kwabena Obeng, University of Warwick, Department of Economics, Coventry CV4 7AL, United Kingdom. Email: samuel.obeng@warwick.ac.uk

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1 Introduction

Fiscal policy outcomes in decentralized systems are often influenced by political factors such as political alignment between the central and local governments, and electoral cycle pressures. Given politicians' primary aim of securing re-election, Lindbeck and Weibull (1987) proposed that intergovernmental transfers (i.e. fiscal transfers from the central to the local government level) would be targeted primarily at swing voters in order to convince them to cast their vote for the incumbent party candidate in the next election. Cox and McCubbins (1986) instead contended that transfers would aim at rewarding core supporters in constituencies that chose the incumbent party with a larger vote share. A sizeable empirical literature now exists on the political motivations behind intergovernmental transfers. The evidence generally, but not exclusively, supports the core-voter-targeting explanation for politically-motivated intergovernmental transfers.[1]

The present paper provides the first comprehensive analysis of how political factors affect a range of fiscal outcomes in a complex, developing-country context. Specifically, we look at Ghana and answer two related questions: how does political alignment influence subnational fiscal outcomes, including intergovernmental transfers, local expenditure and internally generated funds? Second, are there electoral cycle effects in local fiscal outcomes?

Ghana is a stable multi-party democracy with regular elections that are deemed free and fair. It has seen seven national-level elections and four peaceful changes in power between ruling parties since the return to democracy in 1992. The country has a decentralized system of government, with substantial powers delegated to the Metropolitan, Municipal and District Assemblies – what we call District Assemblies (DAs) for simplicity (see section 3 for more details). Crucially, Ghana's system adds a layer of complexity to the conventional political alignment setup, where one key local figure (e.g. a mayor of a municipality or a state governor) is either aligned or unaligned with the central government. Ghana's DA membership is made up of both locally-elected and centrally-appointed officials, in addition to the Member(s) of Parliament (MP) representing the local constituency.[2] The most powerful political appointee is the District Chief Executive (DCE), the head of the DA directly appointed by the President. DCEs are viewed as party cronies and owe their allegiance to the central government, whose policies they are expected to promote and for whom they should garner support among the

[1] The empirical evidence spans countries across the world, from the United States (Larcinese et al. 2006), to India (Rodden and Wilkinson 2004), Brazil (Brollo and Nannicini 2012), Italy (Bracco et al. 2015), and Poland (Kantorowicz and KpplTuryna 2019) to name a few recent contributions.

[2] Each district has at least one constituency. The more populous Municipal and Metropolitan districts have more than one constituency and MP.

district electorate (Ahwoi 2010; Ayee and Dickovick 2010; Mohammed 2015). This means that in principle, *all* districts are aligned with the central government to the same degree. Nevertheless, political differences can and do arise from the fact that MPs instead may be of an opposition party, and that DCEs and MPs are often at odds with each other.[3] Hence, in Ghana, a district shows political alignment by voting for the MP candidate(s) of the party that wins the national election.

All districts are heavily reliant on central government transfers to carry out their duties, and both the DCE – as the head of the DA – and the MP(s) are viewed by the general public as responsible for district-level policies. In a context where showing that one can 'get things done' is very important, MPs however have limited (public) financial means at their disposal to directly target their constituency, giving DCEs the upper hand when it comes to exploiting the possibilities of politically-motivated transfers. The Ghanaian system seeks to prevent such patronage by making the allocation of the main central transfer – the District Assembly Common Fund (DACF) – subject to a mathematical formula, approved annually by Parliament, that considers a district's population size and comparative development factors.[4] Yet, Banful (2011) finds evidence of political motivation in the relative size of transfers of DACF moneys, and of the weights given to the criteria in the formula: transfers tend to be targeted at swing districts, and the formula appears to be amended with this aim prior to national elections. However, it is worth noting that it is difficult to successfully identify and target particular voters and districts in a context where district-level voting patterns in national elections seldom persist for more than two electoral cycles – and no party has yet been in power at the central level for more than two consecutive terms.[5]

This paper looks beyond just the DACF and uses a unique, broad set of measures of district-level fiscal outcomes for the years 1994-2018, covering six national-level elections. We apply a series of fixed-effect panel estimations to analyze whether Ghana's complex system shows any evidence of political influences in intergovernmental transfers, despite the built-in hurdles to party favouritism. The peculiar political pressures and rivalries at the local constituency level would lead us to expect that, if anything, there is targeting of swing voters through

[3]Ghana has a multi-party system, but politics are dominated by the two largest parties, the New Patriotic Party (NPP) and the National Democratic Congress (NDC). All Presidents so far have been members of either of these two parties. The two parties are generally characterized as center-right and center-left, respectively, with only loose ethnic group identifications (see e.g. Boylan 2016). Note that elected District Assembly members run for office on a non-partisan platform, so only MPs have a clear political allegiance.

[4]There is an ongoing debate on whether the small share of the DACF transfers devoted to MPs' district development projects is unconstitutional. There are numerous calls for revising the current policy and having MPs focus on their core job of legislating at the national level, though it is recognized that this will necessitate a change in people's perceptions of MPs' responsibilities and the extent of their power (see Ahwoi 2010).

[5]Robinson and Torvik (2009) focus on the possibility that swing voters are severely punished, potentially to the point of disenfranchisement. There is no evidence of the use of such 'sticks' in Ghana.

increased transfers to (marginally) non-aligned districts. We first examine variations in district fiscal outcomes over the entire electoral cycle and show that there is a marked increase on average across districts and fiscal measures mid-term and in election years. We also find that districts that are aligned with the central government on average receive more grants, have higher expenditure and also higher internally-generated funds than non-aligned districts across the four-year electoral cycle – but not in election years.

A closer look at alignment effects from one year to the next shows that while being aligned is clearly associated with higher fiscal outcomes overall, there is no clear benefit for 'safe' or 'core' DAs with large voting margins in favor of the party in power. Instead, swing districts have seen higher fiscal outcomes. Using a time-diff-in-diff approach across terms, we find similar net results for alignment and for high voting margins. Combined with Ghana's two-term pattern for political parties in power so far, our findings overall imply a lot of fluctuation in local fiscal outcomes, meaning that few districts have systematically fiscally benefited (or suffered) from their political alignment.

There has been a remarkable process of municipal fragmentation in Ghana since the current Constitution was passed in 1992, which has led to a stepwise increase in the number of districts from 110 in 1994, to 216 at the end of our sample period. Our findings are broadly consistent when we vary the sample size, including only districts that have not been subject to fragmentation across the period of analysis, or districts with only one MP where political alignment is most clear-cut. We further seek to pinpoint causality by applying a regression discontinuity design (RDD), with qualitatively similar, though weaker, results.

Our results do not contradict the criticism of gerrymandering in the setting of new district boundaries during the course of the most recent rounds of municipal fragmentation, see for example Riedl and Dickovick (2014) and Mohammed (2015). These studies suggested that earlier fragmentation rounds instead sought primarily to create new districts that were fiscally viable, before considering possible electoral implications. At the same time, though, our results do also not suggest strong political alignment effects in the newly created districts, as the relatively volatile political allegiances in Ghana have so far tempered any attempts at gerrymandering.

The rest of the paper is structured as follows: Section 2 provides a brief literature review; Section 3 gives more details on the Ghanaian context; Section 4 presents the methodology and data; Section 5 discusses the results; and Section 7 draws conclusions.

2 Literature review

The modern debate on the decentralization of government goes back to Buchanan (1950), Musgrave (1959), and Oates (1972, 1977), who argued that decentralization leads to greater political participation, accountability, and administrative and fiscal efficiency. Critics of decentralization instead point out that it leads to soft budget constraints, macroeconomic instability, clientelism, and greater government size (e.g. Rodden 2006).

A vast literature has since developed on the merits and demerits of a decentralized system. One aspect that has received particular attention is the importance of intergovernmental transfers for the provision of public goods and for political competition at the local level. In theory, these transfers could be used to increase politicians' re-election chances, either by convincing swing voters (e.g. Lindbeck and Weibull 1987), or by rewarding core supporters (e.g. Cox and McCubbins 1986; and Dixit and Londregan 1996). *Political alignment* – i.e. whether the local politician is of the same party or coalition as the central government – is a central concept in this strand of the literature.

Our study contributes to the large body of evidence that seeks to estimate the impact of political alignment on central transfers. Empirically, most studies have found a positive effect of political alignment with the center on the size of intergovernmental transfers – especially discretionary grants – in line with the hypothesis of rewarding core supporters. Examples include Levitt and Snyder (1995) and Larcinese et al. (2006) for the U.S.; Arulampalam et al. (2009) and Rodden and Wilkinson (2004) for India; Brollo and Nannicini (2012) for Brazil; Bracco et al. (2015) for Italy, and Kantorowicz and KpplTuryna (2019) for Poland.[6] There is also evidence of electoral cycle effects in fiscal outcomes, with an increase in the expenditure and the budget deficit in election years which can differ across countries (.e.g, Shi and Svensson 2006), or which may be driven by party politics (e.g., Sakurai and Menezes-Filho 2011). The present paper examines a decentralized system in Africa over a period of twenty years and six election cycles, and finds evidence of electoral cycle effects, and of core-supporter reward not only in the size of central government transfers, but also in district expenditures and internally generated funds, which have not received much attention so far.

Although few contributions examine the effects of decentralization in Africa, we are not the first to do so. Mbate (2017) reviews the literature that shows how decentralization has spread throughout the continent and how it has affected governance.[7] Appiah-Agyekum et

[6] In related papers, Asher and Novosad (2017) look at the effect of political alignment on local economic growth in India, Borcan (2020) looks at the links between political alignment and electoral fraud in Romania, and Stoecker (2022) between political alignment and corruption in Ghana.

[7] Riedl and Dickovick (2014) instead look at how political party systems have affected decentralization in

al. (2013) present a qualitative analysis of how the Ghanaian decentralized political system influences the use of local government finance. More closely related to our paper, Miguel and Zaidi (2003) find evidence of 'patronage targeting' at the district level in Ghana's education spending between 1996 and 2000, applying a regression discontinuity design to a random sample of schools. Mogues and Benin (2012) use a panel dataset for Ghana from 1994-2004 and show that central government transfers crowd out locally-generated revenues, in spite of incentives for raising own funds that are built into the criteria for allocation of the DACF. Banful (2011) extends the same dataset to 1994-2005 to examine whether the formula for the allocation of DACF moneys eliminates politically-motivated targeting of transfers. In fixed-effect estimations, she finds that transfers follow the swing-voter hypothesis: districts with lower vote margins in the previous election receive relatively more transfers, and the criteria for funding allocation change in line with this prediction. Using a longer time period of official data than all previous contributions and a combination of empirical approaches, we instead find evidence that aligned districts are targeted in Ghana.

3 The local governance structure of Ghana

3.1 The institutional framework

Our focus is on Ghana, so it is worth describing the country's decentralized political and fiscal system in some detail before turning to the empirical analysis. Ghana has been a stable, multi-party presidential democracy since the new Constitution of 1992 signaled the end of the last military government. The new Constitution included a decentralized structure of government, with substantial powers delegated to sub-national entities; fiscal decentralization was added in 1994 to formalize central government transfers to local authorities.[8] In practice, the current decentralized governance system has four tiers below the center, operating – starting at the top of the hierarchy – at the regional, district, zonal, and Unit Committee levels. In this article, we concentrate on the District Assemblies (DAs), which act as the crucial links between regional and central governments above, and Zonal Councils, Unit Committees and the general population below.[9] The Constitution of Ghana specifies that the DAs are the highest political, legislating, budgeting, and planning authorities at the local level.[10]

Africa, and include Ghana in their case studies.

[8] Decentralization was further strengthened in 2010 under the Decentralization Policy Framework.

[9] The Regional Coordinating Councils (RCCs) have little real power beyond coordinating activities and strategies, while the two lowest levels are mainly responsible for carrying out at the local level the policies decided above, and for conveying concerns from the population to the higher government levels.

[10] Among their most important tasks are the preparation of annual district Development Plans, which should be subjected to public hearings to ensure alignment with local needs; and of annual budget estimates. Both

In order to carry out its plans, a District authority has three sources of revenue: central grants directed to the District Assemblies Common Fund (DACF); ceded revenue;[11] and internally generated funds (IGF) raised through local taxation, fees, fines, and charges. The DACF and ceded revenue are both central government transfers, but the DACF constitutes the main source of funding of district authorities. It has a constitutionally stipulated minimum share of central government revenue of at least 5%; it is distributed between DAs according to a formula approved annually by Parliament, and in turn its allocation by DAs must be approved by the central government.[12]

The DACF allocation formula is calculated as a weighted linear combination of four criteria, which adds up to 100%. The most important is the 'Equality' criterion, which ensures that each district benefits from a substantial amount of the DACF by providing an equal base sum to every district. The 'Need' criterion is targeted at bridging the gap between rich and poor districts. The 'Responsiveness' criterion serves as an incentive for districts to raise their own revenues, although the indicators used to measure own revenue generation have greatly varied over the years (Banful 2011). Finally, a measure of the intensity of use of public facilities in a district - 'Service Pressure' – is included in the formula to account for the implications of population density for public facilities. We control for district population and the basic education enrolment ratio in our regression estimations to take some of the main DACF allocation criteria into account.[13]

Although DAs can set local tax rates, the potential for fiscal revenue from local taxation is limited, as the most lucrative sources of taxation – income tax, sales tax, and import and export duties – go to the central Internal Revenue Service. Moreover, local tax collection is ineffective (Dickovick and Riedl 2010).[14] Instead, district authorities overwhelmingly rely on

require approval by a majority of District Assembly members. Development is prescribed to be pro-poor and cover basic infrastructure, the provision of municipal works and services, the management of human settlements and of the natural environment in the district (FES 2016). In particular, DAs are responsible for fire protection; the civil status register; the maintenance of a statistical office; education services including pre-school, primary, and junior secondary education; social welfare services including family welfare services and welfare homes; public health services including primary care and health protection; water and sanitation; refuse collection and disposal; self-help projects; cemeteries and crematoria; slaughterhouses; and parks and open spaces, sports and leisure facilities.

[11] Ceded revenue is redistributed to DAs by the Internal Revenue Service via the Ministry of Local Government and Rural Development. It includes some specialized funding sources (e.g. natural resource royalties).

[12] Since 1997, a small share of each district's DACF funds – around 4-5% – is allocated to the DA's MP(s). See the "Guidelines for Utilisation of 50% of the District Assemblies' Common Fund Contingency Factor Allocation to be Shared on Constituency Basis", Ministry of Local Government and Rural Development Ref. No. SCR/ADM.250/VOL.3, 18th November 1997.

[13] Note that the weight assigned to these criteria frequently varies, although the 'Equality' criterion has always maintained the largest weight. Banful (2011) argues that formula changes are politically motivated; on the flipside, the frequent changes in the DACF formula imply that districts cannot easily influence future grant allocations, especially since allocation formula details are only communicated with a two-year delay (see also Mogues and Benin 2012).

[14] There is one other potential source of revenue, which however has uneven usage across districts and time: revenue may come from outside the national framework, for example from the IMF/ World Bank's Heavily

central government transfers for their revenue, with grants and DACF funds combined making up on average over 80% of DAs' revenue sources.

Since the Constitution of 1992, Ghana has gone through four rounds of district fragmentation, which have successively increased the number of districts from 110 to 138 (after the creation of new districts in 2004), to 173 (2008), 216 (2012), to currently 254 (2018). In the early phases, fragmentation gave due consideration to the idea of economic viability of the new districts and the creation of effective local institutions; however, critics argue that since the 2000's, fragmentation has actually worsened central public spending inefficiencies and weakened local fiscal accountability (e.g., Mohammed 2015).[15]

The DAs' huge reliance on central government moneys to carry out their duties potentially opens up avenues for politically motivated transfers. To better assess this possibility, we next describe Ghana's local government politics in more detail.

3.2 Local government politics

A unique feature of local governance in Ghana is that membership of the District Assemblies is determined though a combination of centrally-made appointments and locally elected representatives. 70% of Assembly Members are elected; these elected members are also members of the Unit Committee in their local electoral area. The DA further includes the member(s) of parliament (MPs) representing the constituency(-ies) within the district; MPs are *ex officio* members with no voting right in general assembly meetings of DAs. Elections for DA members – but not MPs – are on a non-partisan basis; the elections are state-sponsored and conducted by the electoral commission. Finally, 30% of the DA members are directly appointed by the president, (theoretically) in consultation with traditional leaders and interest groups in the district.

Crucially, the appointed members include the District Chief Executive (DCE), who is the political-administrative head of the DA with the power to initiate, design and implement policies, and tasked with managing the district's resources (FES 2016; Debrah 2016). The approval of the government's DCE nominee depends on a two-thirds majority of the vote in the general DA. Those in favor of the system argue that it is necessary for the President to be given the opportunity to mobilize so-called competent and experienced individuals to complement elected

Indebted Poor Countries (HIPC) Initiative debt relief programme (FES 2016). Note that District Assemblies are not allowed to set deficit budgets, and any loans require prior approval by the Ministry of Finance. The Auditor General audits the annual accounts of DAs and presents a report to parliament.

[15]The motives behind the creation of new districts have also come under scrutiny, as the increase in constituencies and MPs that accompanies fragmentation has raised accusations of 'gerrymandering', i.e. the manipulation of constituency boundaries to favor one party (Riedl and Dickovick 2014; Mohammed 2015). While this strategy works sometimes in Ghana, our data show that newly created districts are no more loyal to one party over time than districts that have existed since 1992. Few districts in Ghana can truly be regarded as 'safe' for any political party for more than two electoral cycles.

assembly members, who may not always have technical knowledge of the issues (Debrah 2016). However, appointees tend to be seen as party cronies rather than technicians (Afrobarometer 2008; Ayee and Dickovick 2010; Mohammed 2015). In fact, DCEs are subject to "centripetal forces of central control" that pull their districts towards the central government (Ahwoi 2010: 7), and they are highly aware of being accountable to the President, who can "sack [them] at any time" (Ahwoi 2010: 15). The outcome of this mixed model of political appointees (heavily linked to the central government) and elected members (who may be aligned with the opposition) is 'administrative politicking': DCEs are often accused of breaking administrative rules, interfering with MPs' local political roles, distrusting civil servants, and generally contributing to chaotic local government (Debrah 2016).

DCEs and MPs frequently clash due to a peculiarity in the system mentioned above: MPs receive a share of a district's DACF for own projects and 'monitoring', and the allocation and disbursement of this share must be approved by the DCE.[16] Tensions between the two sides also arise from extreme partisanship and the desire to score political points; from personality conflicts; and from low transparency and trust – all of which are likely exacerbated by the appointee's often being the unsuccessful candidate in the last parliamentary race, especially in districts won by the opposition.[17] In fact, though influential, the DCE's position is precarious because it depends on presidential favor, and it is subject to a two-term limit. If the DCE has ambitions for a more secure and prominent political career, they will typically run for MP (Ahwoi 2010). Competition is always likely to be high in districts where there is differing party allegiance between DCE and MP(s), but if DCEs show an interest in the parliamentary seat, tensions arise even when both sides are in the same party (Boylan 2016; Debrah 2016).

In sum, no matter the outcome of the district-level parliamentary and presidential elections, the local DCE is always likely to owe allegiance to the party in power in the central government, and may have their own political career at heart during their agenda-setting and decision-making process. A district MP, on the other hand, may be aligned or unaligned with the ruling party. The decentralized system in Ghana therefore offers an interesting case study of politically motivated intergovernmental transfers and local government expenditure patterns.

[16] There are numerous reports of delays in approval and disbursement, or even appropriation by the DCE to undertake projects without the knowledge of the MP (see Boylan 2016; Debrah 2016). The Minister of Local Government and Rural Development and DACF Administrator are regularly called upon to intervene in cases of conflicts over disbursements of MPs' shares. In cases of "actual sabotage", the DACF Administrator can directly disburse the small part of an MP's DACF share that is allocated to 'monitoring and evaluation'. This advance is then deducted from the next quarterly DACF tranche (personal interview with a former DACF Administrator, Accra, May 2019).

[17] On the tensions and clashes within DAs, see Ayee (1999); Daddieh and Bob-Milliar (2012); Boylan (2016); Debrah (2016).

4 Data and Methodology

We first describe the methodology used to analyze electoral cycles and political alignment effects, before detailing the data used.

4.1 Electoral cycles

To examine the effects of electoral cycles on fiscal outcomes in Ghana, we look at systematic variation over time in local fiscal outcomes and explore the existence of electoral cycles using a panel fixed-effects estimator as follows:

$$lnFiscal_{fit} = \alpha + \sigma Election_{it} + \beta_i X_{it} + \mu_i + \epsilon_{it}. \tag{1}$$

$lnFiscal_{fit}$ refers to a vector of real per capita local government fiscal outcomes f (in natural logs) for district i in year t, including central government grants, internally generated funds, and total expenditure; $Election$ refers to the election year dummy; and X_{it} represents a vector of control variables, including the enrolment rate at the basic education level, and the total population in the DA, which are given in natural logarithms. The district fixed effects and the error terms are shown as μ_i and ϵ_{it}, respectively. We use robust standard errors clustered at the district level.

In a second step, we introduce dummy variables for one and two years before the election year, with the latter dummy variable coinciding with the second year after the previous election in the four-year term.[18] We also include an interaction term between the election year dummy and a dummy for political alignment between DAs and central governments (described below), to determine whether the effect of elections differs between aligned and unaligned districts. We expect a positive σ for the election year but it could be positive or negative for other years, because there are no strong priors regarding electoral cycles in a developing country context.

4.2 Political alignment

We next examine the effect of political alignment on local government fiscal outcomes in a fixed effects estimation framework. Our estimated equation is as follows:

[18] We do not include year dummies. A government's term of office covers a period of 4 years, and our electoral cycle dummies cover 3 of those four years, making year dummies redundant.

$$lnFiscal_{fit} = \tau + \rho Align_{it} + \gamma Margin_{it} + \eta(Align_{it} * Margin_{it}) + \beta_i X_{it} + \mu_i + \epsilon_{it} \quad (2)$$

where $lnFiscal_{fit}$ is the vector of real per capita local government fiscal outcomes f (in natural logs) for district i in year t, as above. Our variables of interest are $Align$ and $Margin$, which measure alignment and margin, respectively (described below). We include an interaction term of $Align * Margin$ to measure the interaction effect of these variables. X_{it} represents a vector of time variant control variables (i.e. the enrolment rate at the basic education level and total population) which are given in natural logarithms, μ_i represents the district fixed effect, and the error term is given as ϵ_{it}. We use robust standard errors clustered at the district level. Our coefficient of interest is ρ which measures our alignment effect; a positive coefficient would indicate core-supporter targeting.

4.3 Data description

In our main results, we make use of data for up to 216 districts in Ghana over the period 1994-2018 covering six elections in our full sample. In the robustness checks, we consider districts with one MP where alignment is easiest to assign, and a sub-sample of districts that have remained unchanged (*constant districts*) over the sample period to account for possible effects of municipal fragmentation. There were 41 constant DAs and 181 one MP DAs at the end of the sample period.

Our dependent variable(s) include the following district-level fiscal measures: central government grants, district expenditure, and internally generated funds (IGFs). All dependent variables are measured in real per capita terms and taken in natural logarithms. Data on all our dependent variables are sourced from the various issues of the districts' budget. Data for the period 1994-2004 are from Mogues and Benin (2012), data for 2005-2010 are from the Ministry of Local Government and Rural Development (MLGRD) in Ghana, and for 2011-2018 are compiled by the authors from the various issues of the individual district assemblies' composite budget for the years 2011-2020 by the Ministry of Finance and Economic Planning, Ghana.

As noted earlier, our political variables are the election dummies, $Align$ and $Margin$. We measure district alignment $Align$ by considering the political alignment between local government political agents and the center, with the DCE and MP as our local political agents. Given that DCEs are appointed by the central government, if the elected MP in the district and the central government belong to the same party, then the DCE and MP are automatically aligned with the central government. Hence, alignment is a dummy variable equal to 1 if the DCE and

MP are from the same party as the central government, and 0 otherwise. We emphasize here again that a district demonstrates alignment with the party that wins the national election by voting for its local parliamentary candidate.

We consider parliamentary election results, because parliamentary and presidential election results in Ghana are to a large extent identical. With the unit of observation for election results at the constituency level, we aggregate the parliamentary election results to the district level as constituencies are units within districts.[19] Ghana has a first-past-the-post electoral system, so a party is considered to have won a district if it captures a relative majority of the parliamentary vote share. For districts with more than one MP, alignment is determined using the difference between the average of the sum of votes for the parliamentary candidates of the winner of the national election and the average of the sum of votes of the parliamentary candidates of the loser of the national elections.

$Margin$ is measured as the difference between the percentage of vote share of the parliamentary candidate of the party that wins the national elections, and the percentage of vote share of the parliamentary candidate of the main opposition party that loses the national elections. We use the vote shares of NPP and NDC in determining vote margin, and assign winner or loser according to which of these two parties wins the national presidential elections. In other words, $Margin$ denotes the margin of victory, with a positive showing an aligned, and a negative margin an unaligned district.[20]

Our control variables are the total population of the residents in the district and the enrolment rate at the basic education level in the district. Total population is constructed from the census data and population projections for the districts by the Ghana Statistical Service (GSS). Enrolment rate is measured as the ratio of the sum of enroled pupils in basic education in a given year (creche, nursery, kindergaten, primary and junior high school levels; they are aged between 0-14 years) to the young population (population aged 0-14) in the district in the same year. Enrolment rate is our proxy for basic schooling, which DAs are responsible for providing. Data on the enrolment rate at the basic education level is sourced from the various rounds of the Ghana Annual Schools Census (Basic Schools Information) by the Ministry of Education (MOE), Ghana.

We present our descriptive statistics in Table 1. From the table, districts have relatively

[19]Banful (2011) adopts a similar approach to aggregating constituency-level election results to district-level results. She also notes that presidential and parliamentary results in Ghana are virtually the same, as candidates of the two major parties win in both the presidential and parliamentary elections held in any given district.

[20]Since Ghana is effectively a two-party state, assume two parties in an election, Party A and Party B. Assume further that there are 3 constituencies in district i at time t. Both parties field candidates for each constituency. Hence, we aggregate the percentage of votes obtained by all candidates of Party A and divide by 3 and do same for Party B. If Party A's presidential candidate wins the national elections, then we assign Party A as the winner and Party B as the loser, and construct $Margin$ and $Align$ as described.

higher levels of expenditure than revenue, suggesting they are likely to incur budget deficits on average. The mean central government grant received by the districts is higher than the mean internally generated funds of the districts. The latter is confirmed by the descriptive statistics of central government grant as share of total revenue and IGF as share of total revenue (Grant share and IGF share respectively). In particular, central government grants constitute 83.78% of local government total revenues on average, while local government IGFs make up approximately 16.70% of local government total revenues. The bigger share of central government grants to local government total revenue suggests local governments in Ghana have low levels of fiscal autonomy, and are largely dependent on central governments.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. dev	Min	Max
IGF	3,301	2039882	9118828	20.9	2.30E+08
Grants	3,269	9788712	1.94E+07	0	3.20E+08
Total revenue	3,285	1.18E+07	2.58E+07	86.42	4.50E+08
Total expenditure	2,845	1.17E+07	4.55E+07	110	1.50E+09
NDC_par	873	41.55415	19.65789	0	90.01
NPP_par	872	46.25414	16.83286	0	99.7
Enrolment rate	3,545	60.18422	38.5824	0	311.484
Population	3,793	142810	187188.7	21346	2100000
Number of MPs	3,795	1.440053	1.551872	1	13
Align	3,795	0.879315	0.325804	0	1
Unalign	3,795	0.118841	0.323644	0	1
Margin	1,022	2.887136	32.71193	-86.5	99.39999
Grant_share	3,267	0.837837	.150159	0	1
IGF_share	3,283	0.166915	0.169961	.00064	3.4545

Note: Descriptive statistics for all variables using the full sample of districts.

5 Results on the effects of political alignment on fiscal outcomes

5.1 Electoral cycles

The results for the electoral cycle effect of local government fiscal outcomes are given in Table 2. Columns 1-3 of Table 2 show results for central government grants; columns 4-6 show results for internally generated funds (IGFs); and columns 7-9 ahow results for total expenditure. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for one year and two years preceding the elections; and 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

The coefficient of the election year dummy, *Election*, is positive and statistically significant in almost all cases (except the baseline results for IGF). The results therefore show all local

government fiscal outcomes increase in election years compared to non-election years (i.e. the base category). The magnitudes of the coefficients range from 15-110 percent. In the baseline results, the effect size of the election year dummy is largest for total expenditure, which is driven by a higher central government grant allocation to local governments in election years. Interestingly, although not statistically significant, the coefficient of the election year dummy for IGF in the baseline regression is negative. Hence, it may be said that the predilection of central governments of all political ideologies to increase grant allocations to DAs is enhanced in election years, which drives a higher level of total local government spending. The finding of an increased central government grant allocation in election years is in line with the results of Banful (2011) and Fumey (2018) on Ghana, although the mentioned studies limit their measure of grants to the DACF. Ahwoi (2010) however notes that DAs face planning difficulties on account of such cyclical delays, particularly in DACF allocations, which create uncertainty and unreliability.

In the 'Cycle' columns, we find an interesting electoral cycle. First, the *Election* and $Election_{t-2}$ year dummies are positive, while the $Election_{t-1}$ year dummy is negative for all local government fiscal outcomes. Second, governments seem to be benevolent in the mid-term of their mandate as shown by the relatively higher levels of central government grant allocations in $Election_{t-2}$ compared with *Election* and $Election_{t-1}$, and local governments seem to complement such efforts by raising more IGF in the mid-term. The latter leads to relatively higher levels of local government total expenditure in the mid-term compared with the election years although the increase in expenditure is smaller relative to all other fiscal outcomes. Third, local government fiscal outcomes are lowest in the year preceding the elections as shown by the negative coefficient of the $Election_{t-1}$ year dummy, with IGFs being the lowest, followed by central government grants and total expenditure respectively.

The very low IGFs in the $Election_{t-1}$ year, relatively smaller increase in IGFs in the election year, and the very high levels of total expenditure in the election year suggest that local governments in Ghana adopt a combination of reduced taxes and increased spending close to and in election years. This is suggestive of a targeted use of fiscal policy at the local government level for electoral reasons (see Drazen, 2001).

Next, we include the alignment dummy and an interaction term of election year and the alignment dummy. The results are shown in the 'Mediate' columns of Table 2. The alignment dummy is positive and statistically significant for all fiscal outcomes, suggesting that aligned DAs receive more central government grants (i.e. core-supporter targeting), raise more IGFs, and have higher total expenditure relative to unaligned districts. In election years however,

Table 2: Electoral cycle effect on local government fiscal outcomes

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.149**	0.586***	1.101***	-0.0599	0.371***	1.103***	0.336***	0.777***	1.010***
	(0.0627)	(0.0592)	(0.265)	(0.0574)	(0.0532)	(0.257)	(0.0651)	(0.0694)	(0.253)
$Election_{t-1}$		-0.398***			-0.578***			-0.196**	
		(0.0714)			(0.0669)			(0.0914)	
$Election_{t-2}$		1.268***			1.359***			1.196***	
		(0.0651)			(0.0680)			(0.0868)	
Align			0.722***			0.918***			0.362*
			(0.221)			(0.220)			(0.204)
$Elect * Align$			-1.125***			-1.352***			-0.886***
			(0.334)			(0.320)			(0.323)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,012	3,012	3,012	3,043	3,043	3,043	2,740	2,740	2,740
R-squared	0.249	0.291	0.250	0.213	0.273	0.215	0.220	0.252	0.222

Note: Fixed effect estimations. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for one and two years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment. Columns 1-3 shows results for central government grants, columns 4-6 for internally generated funds (IGF), and columns 7-9 for district expenditure. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

aligned DAs have lower fiscal outcomes as shown by the negative coefficient of the $Elect * Align$ interaction term. Hence, while there may be room for core-supporter targeting within a government's term of office, the extent of such targeting decreases in election years. This suggests perhaps a shift towards accommodating swing-voter preferences given that governments may be confident of the support of their core supporters in the elections. Such switching is consistent with expected political behaviour of most rational governments in the lead-up to elections. Added to this, aligned DAs raise lower own revenues in election years as shown by the negative and statistically significant coefficient of the interaction term for IGF. Again, there is no doubt that raising lower revenues in election years might have been influenced by electoral interests and uncertainty in voting behaviour among core supporters. In the end, total expenditure is lower in election years for aligned DAs. We will next examine these political alignment effects in more detail.

5.2 Political alignment of local government fiscal outcomes

The results for political alignment are given in Table 3. We find a positive and statistically significant effect of alignment, $Align$, on all local government fiscal outcomes, consistent with the earlier results for the electoral cycle. The largest effect is on central government grants, showing evidence of core-supporter targeting. The coefficient of $Margin$ is negative and statistically significant for all fiscal outcomes, suggesting that the DAs with larger margins of alignment have lower fiscal outcomes. The coefficient of the $Align * Margin$ interaction term is positive, indicating that strongly aligned districts have higher fiscal outcomes; however, it is statistically insignificant. The net effect (combining the interacted and non-interacted terms) for alignment is positive, and negative for the voting margin.

Table 3: Political alignment of local government fiscal outcomes

	Grants	IGF	Expenditure
	1	2	3
$Align$	1.391***	1.275***	1.117**
	(0.510)	(0.466)	(0.493)
$Align * Margin$	0.0153	0.00815	0.0119
	(0.0231)	(0.0218)	(0.0236)
$Margin$	-0.0351***	-0.0301**	-0.0306**
	(0.0123)	(0.0117)	(0.0122)
Controls	Yes	Yes	Yes
Observations	691	702	688
R-squared	0.220	0.198	0.216

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

The coefficients for the control variables (not shown) indicate that districts with larger populations have lower fiscal outcomes, and those with higher school enrolment instead have higher fiscal outcomes. The coefficients are all significant, with the exception of school enrolment in the IGF specification.

In sum, while being aligned is likely to be associated with higher central government grant allocations year-on-year, swing districts with low vote margins are more likely to benefit from any central government targeting. Strongly aligned 'core' districts instead may not necessarily be the largest beneficiaries of transfers over time compared with DAs with swing allegiance. This may explain why only few DAs in Ghana show continuous support for a particular party for more than eight years (i.e., two electoral cycles). The latter is reflected in the national elections, where no party has ever been in power beyond two consecutive terms. Further, the results suggest that swing DAs raise relatively more own revenues compared with core supporter DAs, with the lower the IGF, the bigger the margin of alignment – consistent with theoretical expectations. Similarly, aligned DAs in general have relatively higher total expenditure, although this decreases the bigger the margin of alignment.

5.3 Robustness analysis

5.3.1 One-MP districts and constant districts

The results for districts with one-MP, where political alignment is most clear-cut, are given in Tables A1 and A3 of the Appendix, for electoral cycle and political alignment respectively. We find similar electoral cycle results: (i) grants, IGFs and total expenditure increase in election years and in the mid-term of a government's four-year term, but reduce in the year preceding the elections; (ii) aligned DAs have relatively higher grants, IGFs and total expenditure over the course of the electoral cycle; and (iii) aligned DAs have relatively lower levels of grants, IGFs and total expenditure in election years. However, none of the coefficients in the political alignment results in columns 1-3 of Table A3 for the one-MP DAs is statistically significant.

For the sub-sample of constant DAs, we find similar electoral cycle results (see Table A2 in the Appendix): (i) positive and statistically significant effects of the $Election$ and $Election_{t-2}$ year dummies but a negative effect of the $Election_{t-1}$ dummy; (ii) a positive effect of alignment; and (iii) a negative effect of the $Elect * Align$ interaction term. In Table A3, columns 4-6 of the Appendix, we confirm the positive and significant coefficient for $Align$ and significant negative coefficient for $Margin$ that we saw for the full sample. However, the magnitudes of the effects are larger for this small sample of districts that were never subjected to municipal fragmentation during our period of analysis, suggesting stronger swing-voter effects.

5.3.2 Regression discontinuity design - RDD

So far, results have shown strong links between political alignment and local fiscal outcomes in Ghana, but we cannot confidently claim that these links are causal. In a further robustness check, we more closely examine the average *causal* effect of political alignment on local government fiscal outcomes using a regression discontinuity design (RDD) approach. Our treatment and assignment variables are $Align$ and $Margin$, respectively. Our control function, $Align * Margin$, is a second-order polynomial in $Margin$ interacted with our treatment variable $Align$. We adopt the *continuity-based* Regression Discontinuity design as our identification strategy to determine the causal effect of political alignment on central government grants to local governments in Ghana. Our estimation is based on testable continuity assumptions (Cattaneo et al. 2018). We estimate the Average Treatment Effect (ATE) of political alignment based on the discontinuity in observed outcomes at the cut-off, at the zero threshold. Stated differently, the continuity approach assumes that in the absence of treatment, potential outcomes are changing smoothly across the threshold; treatment alone then produces a discontinuity. An RD design is particularly suitable in our case given that local governments in Ghana are relatively homogeneous in nature, having a similar administrative, budgetary, fiscal, political, and institutional structure. We assume triangular kernel weights with bandwidth selected using the Mean Square Error (MSE)-optimal bandwidth choice.

First, we carry out a graphical analysis to examine the density and distribution of our assignment variable and show evidence of discontinuity. We discuss a histogram and a density plot of Margin showing its distribution along the zero cut-off in Figure 1. We then plot the margin of alignment, on the horizontal axis and the fiscal outcome of each district on the vertical axis in Figure 2. Recall that the results derive from the continuity-based RD design proposed by Cattaneo et al. (2018), with MSE-optimal bandwidth choice. For easier interpretation of the plots, the margin of vote is restricted to the range [-40, 40], and estimates include the 95 per cent confidence intervals. We make use of 40 bins in all our plots. Figure 1 clearly shows that the margin of alignment (i.e. the margin of victory) is distributed around zero(0), with some districts barely aligned, other districts barely unaligned and more districts clearly won or lost. It also illustrates the discontinuity in margin of alignment with the density distribution along the cut-off of zero (0), clearly shown with a 95 per cent confidence interval. This justifies our use of margin as the assignment variable. Figure 2 shows the RD plot of DAs' fiscal outcomes in real per capita terms. There is clear discontinuity in all fiscal outcomes at the margin of alignment, with the distribution of outcomes along the cut-off of zero (0) shown with a 95 per cent confidence interval. Also evident is that – as we move away from the cut-off – unaligned

districts (on the left side of the cut-off) and aligned districts (on the right side) do not differ much in their fiscal outcomes. However, the estimation fit – denoted by the length of the vertical lines or 'whiskers' extending from the sample average points – is less precise among unaligned districts. The strength of any alignment effect is tested below.

The RD estimation results in Appendix Table A4 are statistically insignificant, suggesting that the alignment effect shown in the graphs is not very strong. The lack of statistically significant results here is probably due to the presence of 'noise' in the data, compounded by the relatively small number of observations in our sample. Given that the number of districts increased over the period of study due to the creation of new districts, our estimations are being affected by the addition of new districts and the dropout and/or split of existing districts. Hence, any political alignment effect that existed in the full sample is likely cancelled out by these major changes in district size and number (recall that the number of districts nearly doubled from 110 at the start of our period to 216 at the end in a multi-step fragmentation process), and consequently by the limited period of observation for many new districts. Finally, RDD itself thrives where the number of observations is large. The RDD estimates for the sub-sample of constant districts were larger but still statistically insignificant.

5.3.3 Time-differences-in-differences

To further investigate causality, we also make use of data for successive terms of office to determine the effect of *variations* in political alignment on changes in local government fiscal outcomes. Specifically, we consider the average of local government fiscal outcomes across successive terms of office of each government. Given that a term of office of a government covers a period of four years, we consider the average of fiscal outcomes over the entire four-year period. This allows us to account for any possible switching effects of alignment between any two election periods, an important consideration for Ghana where incumbency advantages hardly persist beyond any eight-year period (i.e. two electoral cycles). Intuitively, a diff-in-diff approach helps address possible omitted-variable biases in the case of the control variables and other fixed individual characteristics of the DAs. The approach is possible for Ghana as there are few by-elections within any four-year term period (a single term), limiting the switching effect of political alignment in a DA within a single term. Furthermore, the homogeneous nature of DAs and Ghana's national elections across DAs provide relatively stable electoral features from one term to another, hence reducing the possibility of a correlation between changes in electoral features and changes in alignment status. On the downside, due to fragmentation some districts (new or old) may only enter the full sample for one or two terms. This severely limits

the statistical power of our time-differences-in-differences estimations [21].

The results for our time-diff-in-diff estimations are given in Table A5. Given the focus on variations in political alignment across terms, the number of observations decreases substantially wrt to our main results above. Nevertheless, the results for grants in column 1 show that between any two terms of government, core-supporter DAs receive more central government grants. This is shown by the positive and statistically significant coefficient of $D.Margin$ for grants. Note that "grant" here is the average grant over the entire term of a government's four-year mandate. Hence, average grant receipts are likely to be higher between any two terms for aligned DAs, the bigger the margin of alignment. For IGF in column 2 of Table A5, we find that aligned DAs raise on average more revenues between any two terms, but less so the bigger the margin of alignment (though still positive in net terms). This is shown by the positive and statistically significant coefficient of $D.Align$ and the negative and statistically significant coefficient of $D.Align * Margin$. The results for total expenditure in column 3 of Table A5 show a negative and statistically significant coefficient for $D.Align * Margin$ but a positive and statistically significant coefficient for $D.Margin$. The net effect for the voting margin is negative: districts with larger voting margins for the ruling party see lower expenditures across terms.

Overall, we find some indication that DAs that are politically aligned with the central government have higher fiscal outcomes across terms than the unaligned DAs, consistent with our main year-on-year results shown in Table 3. Unlike our main results, however, the DAs with a higher electoral margin tend to have higher fiscal outcomes across terms, though the net effect of $Margin$ is mostly negative – i.e. 'core' districts see lower fiscal outcomes, consistent with our main results. It seems that strongly aligned districts do not systematically benefit across terms, which makes sense in the context of the volatile political allegiance of Ghana, where only few DAs maintain party allegiance for more than two four-year terms.

6 Conclusions

The present paper examines the effect of political alignment on subnational fiscal outcomes in Ghana, which has a complex system prone to peculiar political pressures at the local district level. We use a new dataset for Ghana on central government grants to local governments, district budgets with information on internally generated funds and total expenditures, and election outcomes spanning the years 1994-2018 and six national elections.

We find evidence of large electoral cycle effects: grant allocations, district expenditure and IGFs are highest in the mid-term of the government's four-year mandate; decrease in the year

[21] A similar approach has been used by Sol-Oll and Sorribas-Navarro (2008) for Spain.

preceding the next national election; and increase again in election years. On average across the electoral cycle, we find that districts that are aligned with the central government receive more grants, have higher expenditure and also higher internally-generated funds than non-aligned districts. However, in election years aligned districts have lower fiscal outcomes.

A closer look at alignment effects from one year to the next shows that while being aligned is clearly associated with higher fiscal outcomes overall, there is no clear benefit for 'safe' or 'core' DAs with large voting margins in favor of the party in power. Instead, swing districts have seen higher fiscal outcomes. Using a time-diff-in-diff approach across terms, we find similar net results for alignment and for high voting margins. Combined with Ghana's two-term pattern for political parties in power so far, our findings overall imply a lot of fluctuation in local fiscal outcomes, meaning that few districts have systematically fiscally benefited (or suffered) from their political alignment.

This may also have implications for the impact of municipal fragmentation in Ghana. There has been an ongoing process of municipal fragmentation since the current Constitution was adopted in 1992, which has led to an increase in the number of districts from 110 in 1994, to 216 at the end of our sample period. Interestingly, when we restrict our sample to only those districts that were never fragmented – our 'constant' district sample – we find similar year-on-year alignment effects to those in the full sample, but with larger coefficients. This suggests that despite worries of politically-motivated municipal fragmentation and gerrymandering in Ghana (see Riedl and Dickovick 2014; Mohammed 2015),[22] the process has (perhaps inadvertently) watered down any attempts at systematic, targeted intergovernmental transfers, and moreover done so more successfully than the obstacles to party favoritism that are built in to the decentralized system. Whether this persists in the future remains to be seen.

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[22] See Green (2010), Grossman and Lewis (2014); and Hassan (2016) for the theory that the creation of new districts is used as a form of patronage to reward or entice political support.

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Appendix

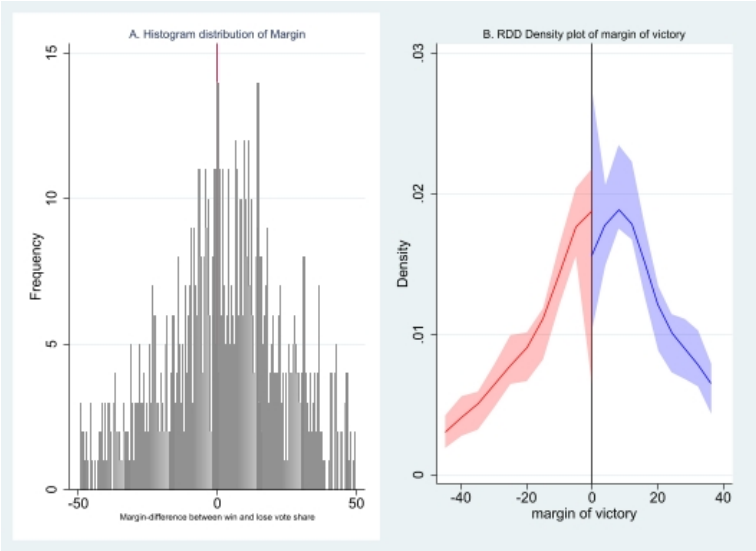

Figure 1: Histogragram distribution of Margin around zero and RD plot of Margin
Note: In Panel A, the histogram is constructed for margin in the range [-40, 40]. The central line splits the distribution at the cut-offpoint of zero(0). In Panel B, the central line splits the margin of alignment in the range [-40, 40] at the cut-off point of zero(0). The shaded lines are the 95 per cent confidence interval. Data used covers the period 1994-2018

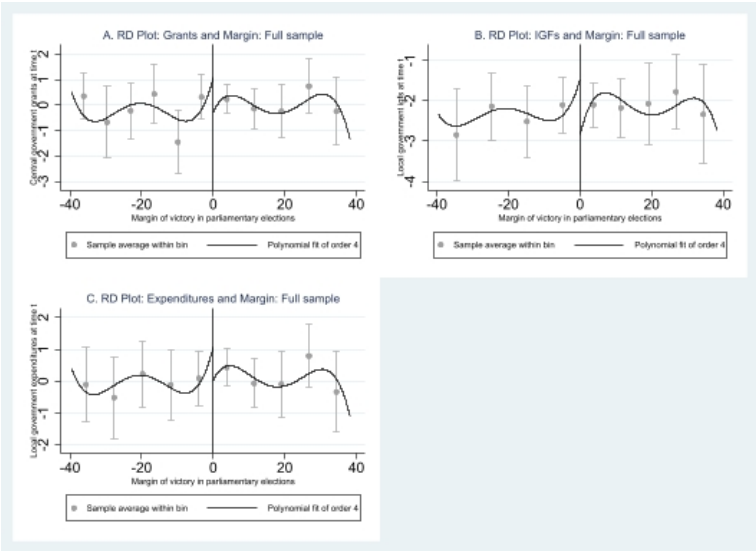

Figure 2: RD plot of fiscal outcomes and Margin
Note: Panel A represents Grants and Margin, Panel B represents IGF and Margin and Panel C represents Expenditure and Margin. Data used covers the period 1994-2018

Table A1: Electoral cycle effect of local government fiscal outcomes: One-MP districts

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.142*	0.517***	1.094***	-0.0691	0.286***	1.264***	0.349***	0.709***	0.957***
	(0.0765)	(0.0693)	(0.282)	(0.0725)	(0.0633)	(0.264)	(0.0831)	(0.0831)	(0.275)
$Election_{t-1}$		-0.405***			-0.591***			-0.192*	
		(0.0861)			(0.0804)			(0.112)	
$Election_{t-2}$		1.110***			1.167***			0.991***	
		(0.0802)			(0.0860)			(0.111)	
Alignment			0.676***			1.028***			0.235
			(0.243)			(0.238)			(0.230)
$Elect * Align$			-1.153***			-1.562***			-0.850***
			(0.331)			(0.304)			(0.327)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,406	2,406	2,406	2,429	2,429	2,429	2,154	2,154	2,154
R-squared	0.204	0.249	0.207	0.174	0.237	0.178	0.172	0.202	0.174

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for 1-year and 2-years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

Table A2: Electoral cycle effect of local government fiscal outcomes: Constant districts

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.104	0.775***	0.888*	-0.135	0.527***	0.717	0.339***	1.171***	0.675
	(0.0990)	(0.0925)	(0.498)	(0.0946)	(0.0858)	(0.444)	(0.111)	(0.105)	(0.460)
$Election_{t-1}$		-0.146			-0.287***			0.354**	
		(0.113)			(0.105)			(0.142)	
$Election_{t-2}$		1.749***			1.825***			1.802***	
		(0.0798)			(0.0791)			(0.112)	
Alignment			0.473			0.572**			0.104
			(0.343)			(0.278)			(0.273)
$Elect * Align$			-0.991			-1.043			-0.481
			(0.696)			(0.635)			(0.644)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	799	799	799	803	803	803	740	740	740
R-squared	0.235	0.284	0.236	0.211	0.275	0.213	0.200	0.241	0.201

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for 1-year and 2-years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

Table A3: Political alignment of local government fiscal outcomes-One-MP districts and Constant districts

	One-MP districts			Constant districts		
	Grants	IGF	Expenditure	Grants	IGF	Expenditure
	1	2	3	4	5	6
$Align$	0.586	0.530	0.343	2.132**	2.092**	2.144**
	(0.482)	(0.444)	(0.479)	(1.034)	(0.933)	(0.971)
$Align * Margin$	-0.0133	-0.0182	-0.0153	0.0323	0.0295	0.0309
	(0.0209)	(0.0200)	(0.0216)	(0.0408)	(0.0375)	(0.0402)
$Margin$	-0.00871	-0.00610	-0.00523	-0.0583**	-0.0563**	-0.0563**
	(0.0119)	(0.0113)	(0.0118)	(0.0241)	(0.0224)	(0.0236)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	565	571	557	201	202	204
R-squared	0.195	0.172	0.192	0.226	0.217	0.221

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

Table A4: RDD estimations for local government fiscal outcomes

	Grants	IGF	Expenditure
	1	2	3
RD_Estimate	0.160	-0.247	0.281
	(0.782)	(0.757)	(0.808)
Controls	Yes	Yes	Yes
Observations	691	702	688

Note: Estimations are done using the second-order polynomial. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capital terms. ***(**)(*) represent statistical significance at 1, 5, and 10 per cent levels respectively.

Table A5: Political alignment: Time-difference-in-difference estimation

	Grants	IGF	Expenditure
	1	2	3
$D.Align$	0.309	0.693**	0.432
	(0.274)	(0.269)	(0.312)
$D.Align * Margin$	-0.00890	-0.0113**	-0.0142*
	(0.00633)	(0.00542)	(0.00778)
$D.Margin$	0.00569*	0.00406	0.00860**
	(0.00341)	(0.00312)	(0.00412)
Controls	Yes	Yes	Yes
F-stats_d.align	1.27(0.261)	6.62(0.0105)	1.91(0.1678)
Observations	387	389	381
R-squared	0.454	0.327	0.380

Note: Estimations done with all variables in first-difference. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***(**)(*) represent statistical significant at 1, 5 and 10 per cent levels respectively.

Rewarding Allegiance: Political Alignment and Fiscal Outcomes in Local Government

Christa N. Brunnschweiler*and Samuel K. Obeng†

University of East Anglia University of Warwick

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Abstract

We examine how local governments' political alignment with central government affects subnational fiscal outcomes. In theory, alignment could be rewarded with more intergovernmental transfers, or swing voters in unaligned constituencies could be targeted instead. We analyze data from Ghana, which has a complex decentralized system that seeks to preclude political alignment effects. District Chief Executives (DCEs) are centrally-appointed local administrators loyal to the ruling party, while district Members of Parliament (MPs) may belong to another party. A formula for central transfer distribution aims to limit the influence of party politics. Using a new dataset for 1994-2018 we find that despite this system, districts with aligned MPs and DCE receive more transfers, have higher district expenditure, and more internally generated funds. However, it is the swing districts that benefit the most from term to term: the 'safer' districts see lower increases in fiscal outcomes relative to the (potential) 'swing' districts. We also show strong electoral cycle effects, with peaks in fiscal outcomes mid-term and in election years.

JEL codes: H7, D72, H87, O55

Keywords: fiscal federalism, political alignment, Ghana, panel regression

*Christa Brunnschweiler, University of East Anglia, School of Economics, Norwich NR4 7TJ, United Kingdom. E-mail: c.brunnschweiler@uea.ac.uk. Also affiliated with CBESS, University of East Anglia, and OxCarre, University of Oxford.

†Samuel Kwabena Obeng, University of Warwick, Department of Economics, Coventry CV4 7AL, United Kingdom. Email: samuel.obeng@warwick.ac.uk

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1 Introduction

Fiscal policy outcomes in decentralized systems are often influenced by political factors such as political alignment between the central and local governments, and electoral cycle pressures. Given politicians' primary aim of securing re-election, Lindbeck and Weibull (1987) proposed that intergovernmental transfers (i.e. fiscal transfers from the central to the local government level) would be targeted primarily at swing voters in order to convince them to cast their vote for the incumbent party candidate in the next election. Cox and McCubbins (1986) instead contended that transfers would aim at rewarding core supporters in constituencies that chose the incumbent party with a larger vote share. A sizeable empirical literature now exists on the political motivations behind intergovernmental transfers. The evidence generally, but not exclusively, supports the core-voter-targeting explanation for politically-motivated intergovernmental transfers.[1]

The present paper provides the first comprehensive analysis of how political factors affect a range of fiscal outcomes in a complex, developing-country context. Specifically, we look at Ghana and answer two related questions: how does political alignment influence subnational fiscal outcomes, including intergovernmental transfers, local expenditure and internally generated funds? Second, are there electoral cycle effects in local fiscal outcomes?

Ghana is a stable multi-party democracy with regular elections that are deemed free and fair. It has seen seven national-level elections and four peaceful changes in power between ruling parties since the return to democracy in 1992. The country has a decentralized system of government, with substantial powers delegated to the Metropolitan, Municipal and District Assemblies – what we call District Assemblies (DAs) for simplicity (see section 3 for more details). Crucially, Ghana's system adds a layer of complexity to the conventional political alignment setup, where one key local figure (e.g. a mayor of a municipality or a state governor) is either aligned or unaligned with the central government. Ghana's DA membership is made up of both locally-elected and centrally-appointed officials, in addition to the Member(s) of Parliament (MP) representing the local constituency.[2] The most powerful political appointee is the District Chief Executive (DCE), the head of the DA directly appointed by the President. DCEs are viewed as party cronies and owe their allegiance to the central government, whose policies they are expected to promote and for whom they should garner support among the

[1] The empirical evidence spans countries across the world, from the United States (Larcinese et al. 2006), to India (Rodden and Wilkinson 2004), Brazil (Brollo and Nannicini 2012), Italy (Bracco et al. 2015), and Poland (Kantorowicz and KpplTuryna 2019) to name a few recent contributions.

[2] Each district has at least one constituency. The more populous Municipal and Metropolitan districts have more than one constituency and MP.

district electorate (Ahwoi 2010; Ayee and Dickovick 2010; Mohammed 2015). This means that in principle, *all* districts are aligned with the central government to the same degree. Nevertheless, political differences can and do arise from the fact that MPs instead may be of an opposition party, and that DCEs and MPs are often at odds with each other.[3] Hence, in Ghana, a district shows political alignment by voting for the MP candidate(s) of the party that wins the national election.

All districts are heavily reliant on central government transfers to carry out their duties, and both the DCE – as the head of the DA – and the MP(s) are viewed by the general public as responsible for district-level policies. In a context where showing that one can 'get things done' is very important, MPs however have limited (public) financial means at their disposal to directly target their constituency, giving DCEs the upper hand when it comes to exploiting the possibilities of politically-motivated transfers. The Ghanaian system seeks to prevent such patronage by making the allocation of the main central transfer – the District Assembly Common Fund (DACF) – subject to a mathematical formula, approved annually by Parliament, that considers a district's population size and comparative development factors.[4] Yet, Banful (2011) finds evidence of political motivation in the relative size of transfers of DACF moneys, and of the weights given to the criteria in the formula: transfers tend to be targeted at swing districts, and the formula appears to be amended with this aim prior to national elections. However, it is worth noting that it is difficult to successfully identify and target particular voters and districts in a context where district-level voting patterns in national elections seldom persist for more than two electoral cycles – and no party has yet been in power at the central level for more than two consecutive terms.[5]

This paper looks beyond just the DACF and uses a unique, broad set of measures of district-level fiscal outcomes for the years 1994-2018, covering six national-level elections. We apply a series of fixed-effect panel estimations to analyze whether Ghana's complex system shows any evidence of political influences in intergovernmental transfers, despite the built-in hurdles to party favouritism. The peculiar political pressures and rivalries at the local constituency level would lead us to expect that, if anything, there is targeting of swing voters through

[3]Ghana has a multi-party system, but politics are dominated by the two largest parties, the New Patriotic Party (NPP) and the National Democratic Congress (NDC). All Presidents so far have been members of either of these two parties. The two parties are generally characterized as center-right and center-left, respectively, with only loose ethnic group identifications (see e.g. Boylan 2016). Note that elected District Assembly members run for office on a non-partisan platform, so only MPs have a clear political allegiance.

[4]There is an ongoing debate on whether the small share of the DACF transfers devoted to MPs' district development projects is unconstitutional. There are numerous calls for revising the current policy and having MPs focus on their core job of legislating at the national level, though it is recognized that this will necessitate a change in people's perceptions of MPs' responsibilities and the extent of their power (see Ahwoi 2010).

[5]Robinson and Torvik (2009) focus on the possibility that swing voters are severely punished, potentially to the point of disenfranchisement. There is no evidence of the use of such 'sticks' in Ghana.

increased transfers to (marginally) non-aligned districts. We first examine variations in district fiscal outcomes over the entire electoral cycle and show that there is a marked increase on average across districts and fiscal measures mid-term and in election years. We also find that districts that are aligned with the central government on average receive more grants, have higher expenditure and also higher internally-generated funds than non-aligned districts across the four-year electoral cycle – but not in election years.

A closer look at alignment effects from one year to the next shows that while being aligned is clearly associated with higher fiscal outcomes overall, there is no clear benefit for 'safe' or 'core' DAs with large voting margins in favor of the party in power. Instead, swing districts have seen higher fiscal outcomes. Using a time-diff-in-diff approach across terms, we find similar net results for alignment and for high voting margins. Combined with Ghana's two-term pattern for political parties in power so far, our findings overall imply a lot of fluctuation in local fiscal outcomes, meaning that few districts have systematically fiscally benefited (or suffered) from their political alignment.

There has been a remarkable process of municipal fragmentation in Ghana since the current Constitution was passed in 1992, which has led to a stepwise increase in the number of districts from 110 in 1994, to 216 at the end of our sample period. Our findings are broadly consistent when we vary the sample size, including only districts that have not been subject to fragmentation across the period of analysis, or districts with only one MP where political alignment is most clear-cut. We further seek to pinpoint causality by applying a regression discontinuity design (RDD), with qualitatively similar, though weaker, results.

Our results do not contradict the criticism of gerrymandering in the setting of new district boundaries during the course of the most recent rounds of municipal fragmentation, see for example Riedl and Dickovick (2014) and Mohammed (2015). These studies suggested that earlier fragmentation rounds instead sought primarily to create new districts that were fiscally viable, before considering possible electoral implications. At the same time, though, our results do also not suggest strong political alignment effects in the newly created districts, as the relatively volatile political allegiances in Ghana have so far tempered any attempts at gerrymandering.

The rest of the paper is structured as follows: Section 2 provides a brief literature review; Section 3 gives more details on the Ghanaian context; Section 4 presents the methodology and data; Section 5 discusses the results; and Section 7 draws conclusions.

2 Literature review

The modern debate on the decentralization of government goes back to Buchanan (1950), Musgrave (1959), and Oates (1972, 1977), who argued that decentralization leads to greater political participation, accountability, and administrative and fiscal efficiency. Critics of decentralization instead point out that it leads to soft budget constraints, macroeconomic instability, clientelism, and greater government size (e.g. Rodden 2006).

A vast literature has since developed on the merits and demerits of a decentralized system. One aspect that has received particular attention is the importance of intergovernmental transfers for the provision of public goods and for political competition at the local level. In theory, these transfers could be used to increase politicians' re-election chances, either by convincing swing voters (e.g. Lindbeck and Weibull 1987), or by rewarding core supporters (e.g. Cox and McCubbins 1986; and Dixit and Londregan 1996). *Political alignment* – i.e. whether the local politician is of the same party or coalition as the central government – is a central concept in this strand of the literature.

Our study contributes to the large body of evidence that seeks to estimate the impact of political alignment on central transfers. Empirically, most studies have found a positive effect of political alignment with the center on the size of intergovernmental transfers – especially discretionary grants – in line with the hypothesis of rewarding core supporters. Examples include Levitt and Snyder (1995) and Larcinese et al. (2006) for the U.S.; Arulampalam et al. (2009) and Rodden and Wilkinson (2004) for India; Brollo and Nannicini (2012) for Brazil; Bracco et al. (2015) for Italy, and Kantorowicz and KpplTuryna (2019) for Poland.[6] There is also evidence of electoral cycle effects in fiscal outcomes, with an increase in the expenditure and the budget deficit in election years which can differ across countries (.e.g, Shi and Svensson 2006), or which may be driven by party politics (e.g., Sakurai and Menezes-Filho 2011). The present paper examines a decentralized system in Africa over a period of twenty years and six election cycles, and finds evidence of electoral cycle effects, and of core-supporter reward not only in the size of central government transfers, but also in district expenditures and internally generated funds, which have not received much attention so far.

Although few contributions examine the effects of decentralization in Africa, we are not the first to do so. Mbate (2017) reviews the literature that shows how decentralization has spread throughout the continent and how it has affected governance.[7] Appiah-Agyekum et

[6] In related papers, Asher and Novosad (2017) look at the effect of political alignment on local economic growth in India, Borcan (2020) looks at the links between political alignment and electoral fraud in Romania, and Stoecker (2022) between political alignment and corruption in Ghana.

[7] Riedl and Dickovick (2014) instead look at how political party systems have affected decentralization in

al. (2013) present a qualitative analysis of how the Ghanaian decentralized political system influences the use of local government finance. More closely related to our paper, Miguel and Zaidi (2003) find evidence of 'patronage targeting' at the district level in Ghana's education spending between 1996 and 2000, applying a regression discontinuity design to a random sample of schools. Mogues and Benin (2012) use a panel dataset for Ghana from 1994-2004 and show that central government transfers crowd out locally-generated revenues, in spite of incentives for raising own funds that are built into the criteria for allocation of the DACF. Banful (2011) extends the same dataset to 1994-2005 to examine whether the formula for the allocation of DACF moneys eliminates politically-motivated targeting of transfers. In fixed-effect estimations, she finds that transfers follow the swing-voter hypothesis: districts with lower vote margins in the previous election receive relatively more transfers, and the criteria for funding allocation change in line with this prediction. Using a longer time period of official data than all previous contributions and a combination of empirical approaches, we instead find evidence that aligned districts are targeted in Ghana.

3 The local governance structure of Ghana

3.1 The institutional framework

Our focus is on Ghana, so it is worth describing the country's decentralized political and fiscal system in some detail before turning to the empirical analysis. Ghana has been a stable, multi-party presidential democracy since the new Constitution of 1992 signaled the end of the last military government. The new Constitution included a decentralized structure of government, with substantial powers delegated to sub-national entities; fiscal decentralization was added in 1994 to formalize central government transfers to local authorities.[8] In practice, the current decentralized governance system has four tiers below the center, operating – starting at the top of the hierarchy – at the regional, district, zonal, and Unit Committee levels. In this article, we concentrate on the District Assemblies (DAs), which act as the crucial links between regional and central governments above, and Zonal Councils, Unit Committees and the general population below.[9] The Constitution of Ghana specifies that the DAs are the highest political, legislating, budgeting, and planning authorities at the local level.[10]

Africa, and include Ghana in their case studies.

[8] Decentralization was further strengthened in 2010 under the Decentralization Policy Framework.

[9] The Regional Coordinating Councils (RCCs) have little real power beyond coordinating activities and strategies, while the two lowest levels are mainly responsible for carrying out at the local level the policies decided above, and for conveying concerns from the population to the higher government levels.

[10] Among their most important tasks are the preparation of annual district Development Plans, which should be subjected to public hearings to ensure alignment with local needs; and of annual budget estimates. Both

In order to carry out its plans, a District authority has three sources of revenue: central grants directed to the District Assemblies Common Fund (DACF); ceded revenue;[11] and internally generated funds (IGF) raised through local taxation, fees, fines, and charges. The DACF and ceded revenue are both central government transfers, but the DACF constitutes the main source of funding of district authorities. It has a constitutionally stipulated minimum share of central government revenue of at least 5%; it is distributed between DAs according to a formula approved annually by Parliament, and in turn its allocation by DAs must be approved by the central government.[12]

The DACF allocation formula is calculated as a weighted linear combination of four criteria, which adds up to 100%. The most important is the 'Equality' criterion, which ensures that each district benefits from a substantial amount of the DACF by providing an equal base sum to every district. The 'Need' criterion is targeted at bridging the gap between rich and poor districts. The 'Responsiveness' criterion serves as an incentive for districts to raise their own revenues, although the indicators used to measure own revenue generation have greatly varied over the years (Banful 2011). Finally, a measure of the intensity of use of public facilities in a district - 'Service Pressure' – is included in the formula to account for the implications of population density for public facilities. We control for district population and the basic education enrolment ratio in our regression estimations to take some of the main DACF allocation criteria into account.[13]

Although DAs can set local tax rates, the potential for fiscal revenue from local taxation is limited, as the most lucrative sources of taxation – income tax, sales tax, and import and export duties – go to the central Internal Revenue Service. Moreover, local tax collection is ineffective (Dickovick and Riedl 2010).[14] Instead, district authorities overwhelmingly rely on

require approval by a majority of District Assembly members. Development is prescribed to be pro-poor and cover basic infrastructure, the provision of municipal works and services, the management of human settlements and of the natural environment in the district (FES 2016). In particular, DAs are responsible for fire protection; the civil status register; the maintenance of a statistical office; education services including pre-school, primary, and junior secondary education; social welfare services including family welfare services and welfare homes; public health services including primary care and health protection; water and sanitation; refuse collection and disposal; self-help projects; cemeteries and crematoria; slaughterhouses; and parks and open spaces, sports and leisure facilities.

[11] Ceded revenue is redistributed to DAs by the Internal Revenue Service via the Ministry of Local Government and Rural Development. It includes some specialized funding sources (e.g. natural resource royalties).

[12] Since 1997, a small share of each district's DACF funds – around 4-5% – is allocated to the DA's MP(s). See the "Guidelines for Utilisation of 50% of the District Assemblies' Common Fund Contingency Factor Allocation to be Shared on Constituency Basis", Ministry of Local Government and Rural Development Ref. No. SCR/ADM.250/VOL.3, 18th November 1997.

[13] Note that the weight assigned to these criteria frequently varies, although the 'Equality' criterion has always maintained the largest weight. Banful (2011) argues that formula changes are politically motivated; on the flipside, the frequent changes in the DACF formula imply that districts cannot easily influence future grant allocations, especially since allocation formula details are only communicated with a two-year delay (see also Mogues and Benin 2012).

[14] There is one other potential source of revenue, which however has uneven usage across districts and time: revenue may come from outside the national framework, for example from the IMF/ World Bank's Heavily

central government transfers for their revenue, with grants and DACF funds combined making up on average over 80% of DAs' revenue sources.

Since the Constitution of 1992, Ghana has gone through four rounds of district fragmentation, which have successively increased the number of districts from 110 to 138 (after the creation of new districts in 2004), to 173 (2008), 216 (2012), to currently 254 (2018). In the early phases, fragmentation gave due consideration to the idea of economic viability of the new districts and the creation of effective local institutions; however, critics argue that since the 2000's, fragmentation has actually worsened central public spending inefficiencies and weakened local fiscal accountability (e.g., Mohammed 2015).[15]

The DAs' huge reliance on central government moneys to carry out their duties potentially opens up avenues for politically motivated transfers. To better assess this possibility, we next describe Ghana's local government politics in more detail.

3.2 Local government politics

A unique feature of local governance in Ghana is that membership of the District Assemblies is determined though a combination of centrally-made appointments and locally elected representatives. 70% of Assembly Members are elected; these elected members are also members of the Unit Committee in their local electoral area. The DA further includes the member(s) of parliament (MPs) representing the constituency(-ies) within the district; MPs are *ex officio* members with no voting right in general assembly meetings of DAs. Elections for DA members – but not MPs – are on a non-partisan basis; the elections are state-sponsored and conducted by the electoral commission. Finally, 30% of the DA members are directly appointed by the president, (theoretically) in consultation with traditional leaders and interest groups in the district.

Crucially, the appointed members include the District Chief Executive (DCE), who is the political-administrative head of the DA with the power to initiate, design and implement policies, and tasked with managing the district's resources (FES 2016; Debrah 2016). The approval of the government's DCE nominee depends on a two-thirds majority of the vote in the general DA. Those in favor of the system argue that it is necessary for the President to be given the opportunity to mobilize so-called competent and experienced individuals to complement elected

Indebted Poor Countries (HIPC) Initiative debt relief programme (FES 2016). Note that District Assemblies are not allowed to set deficit budgets, and any loans require prior approval by the Ministry of Finance. The Auditor General audits the annual accounts of DAs and presents a report to parliament.

[15]The motives behind the creation of new districts have also come under scrutiny, as the increase in constituencies and MPs that accompanies fragmentation has raised accusations of 'gerrymandering', i.e. the manipulation of constituency boundaries to favor one party (Riedl and Dickovick 2014; Mohammed 2015). While this strategy works sometimes in Ghana, our data show that newly created districts are no more loyal to one party over time than districts that have existed since 1992. Few districts in Ghana can truly be regarded as 'safe' for any political party for more than two electoral cycles.

assembly members, who may not always have technical knowledge of the issues (Debrah 2016). However, appointees tend to be seen as party cronies rather than technicians (Afrobarometer 2008; Ayee and Dickovick 2010; Mohammed 2015). In fact, DCEs are subject to "centripetal forces of central control" that pull their districts towards the central government (Ahwoi 2010: 7), and they are highly aware of being accountable to the President, who can "sack [them] at any time" (Ahwoi 2010: 15). The outcome of this mixed model of political appointees (heavily linked to the central government) and elected members (who may be aligned with the opposition) is 'administrative politicking': DCEs are often accused of breaking administrative rules, interfering with MPs' local political roles, distrusting civil servants, and generally contributing to chaotic local government (Debrah 2016).

DCEs and MPs frequently clash due to a peculiarity in the system mentioned above: MPs receive a share of a district's DACF for own projects and 'monitoring', and the allocation and disbursement of this share must be approved by the DCE.[16] Tensions between the two sides also arise from extreme partisanship and the desire to score political points; from personality conflicts; and from low transparency and trust – all of which are likely exacerbated by the appointee's often being the unsuccessful candidate in the last parliamentary race, especially in districts won by the opposition.[17] In fact, though influential, the DCE's position is precarious because it depends on presidential favor, and it is subject to a two-term limit. If the DCE has ambitions for a more secure and prominent political career, they will typically run for MP (Ahwoi 2010). Competition is always likely to be high in districts where there is differing party allegiance between DCE and MP(s), but if DCEs show an interest in the parliamentary seat, tensions arise even when both sides are in the same party (Boylan 2016; Debrah 2016).

In sum, no matter the outcome of the district-level parliamentary and presidential elections, the local DCE is always likely to owe allegiance to the party in power in the central government, and may have their own political career at heart during their agenda-setting and decision-making process. A district MP, on the other hand, may be aligned or unaligned with the ruling party. The decentralized system in Ghana therefore offers an interesting case study of politically motivated intergovernmental transfers and local government expenditure patterns.

[16] There are numerous reports of delays in approval and disbursement, or even appropriation by the DCE to undertake projects without the knowledge of the MP (see Boylan 2016; Debrah 2016). The Minister of Local Government and Rural Development and DACF Administrator are regularly called upon to intervene in cases of conflicts over disbursements of MPs' shares. In cases of "actual sabotage", the DACF Administrator can directly disburse the small part of an MP's DACF share that is allocated to 'monitoring and evaluation'. This advance is then deducted from the next quarterly DACF tranche (personal interview with a former DACF Administrator, Accra, May 2019).

[17] On the tensions and clashes within DAs, see Ayee (1999); Daddieh and Bob-Milliar (2012); Boylan (2016); Debrah (2016).

4 Data and Methodology

We first describe the methodology used to analyze electoral cycles and political alignment effects, before detailing the data used.

4.1 Electoral cycles

To examine the effects of electoral cycles on fiscal outcomes in Ghana, we look at systematic variation over time in local fiscal outcomes and explore the existence of electoral cycles using a panel fixed-effects estimator as follows:

$$lnFiscal_{fit} = \alpha + \sigma Election_{it} + \beta_i X_{it} + \mu_i + \epsilon_{it}. \tag{1}$$

$lnFiscal_{fit}$ refers to a vector of real per capita local government fiscal outcomes f (in natural logs) for district i in year t, including central government grants, internally generated funds, and total expenditure; $Election$ refers to the election year dummy; and X_{it} represents a vector of control variables, including the enrolment rate at the basic education level, and the total population in the DA, which are given in natural logarithms. The district fixed effects and the error terms are shown as μ_i and ϵ_{it}, respectively. We use robust standard errors clustered at the district level.

In a second step, we introduce dummy variables for one and two years before the election year, with the latter dummy variable coinciding with the second year after the previous election in the four-year term.[18] We also include an interaction term between the election year dummy and a dummy for political alignment between DAs and central governments (described below), to determine whether the effect of elections differs between aligned and unaligned districts. We expect a positive σ for the election year but it could be positive or negative for other years, because there are no strong priors regarding electoral cycles in a developing country context.

4.2 Political alignment

We next examine the effect of political alignment on local government fiscal outcomes in a fixed effects estimation framework. Our estimated equation is as follows:

[18] We do not include year dummies. A government's term of office covers a period of 4 years, and our electoral cycle dummies cover 3 of those four years, making year dummies redundant.

$$lnFiscal_{fit} = \tau + \rho Align_{it} + \gamma Margin_{it} + \eta(Align_{it} * Margin_{it}) + \beta_i X_{it} + \mu_i + \epsilon_{it} \quad (2)$$

where $lnFiscal_{fit}$ is the vector of real per capita local government fiscal outcomes f (in natural logs) for district i in year t, as above. Our variables of interest are $Align$ and $Margin$, which measure alignment and margin, respectively (described below). We include an interaction term of $Align * Margin$ to measure the interaction effect of these variables. X_{it} represents a vector of time variant control variables (i.e. the enrolment rate at the basic education level and total population) which are given in natural logarithms, μ_i represents the district fixed effect, and the error term is given as ϵ_{it}. We use robust standard errors clustered at the district level. Our coefficient of interest is ρ which measures our alignment effect; a positive coefficient would indicate core-supporter targeting.

4.3 Data description

In our main results, we make use of data for up to 216 districts in Ghana over the period 1994-2018 covering six elections in our full sample. In the robustness checks, we consider districts with one MP where alignment is easiest to assign, and a sub-sample of districts that have remained unchanged (*constant districts*) over the sample period to account for possible effects of municipal fragmentation. There were 41 constant DAs and 181 one MP DAs at the end of the sample period.

Our dependent variable(s) include the following district-level fiscal measures: central government grants, district expenditure, and internally generated funds (IGFs). All dependent variables are measured in real per capita terms and taken in natural logarithms. Data on all our dependent variables are sourced from the various issues of the districts' budget. Data for the period 1994-2004 are from Mogues and Benin (2012), data for 2005-2010 are from the Ministry of Local Government and Rural Development (MLGRD) in Ghana, and for 2011-2018 are compiled by the authors from the various issues of the individual district assemblies' composite budget for the years 2011-2020 by the Ministry of Finance and Economic Planning, Ghana.

As noted earlier, our political variables are the election dummies, $Align$ and $Margin$. We measure district alignment $Align$ by considering the political alignment between local government political agents and the center, with the DCE and MP as our local political agents. Given that DCEs are appointed by the central government, if the elected MP in the district and the central government belong to the same party, then the DCE and MP are automatically aligned with the central government. Hence, alignment is a dummy variable equal to 1 if the DCE and

MP are from the same party as the central government, and 0 otherwise. We emphasize here again that a district demonstrates alignment with the party that wins the national election by voting for its local parliamentary candidate.

We consider parliamentary election results, because parliamentary and presidential election results in Ghana are to a large extent identical. With the unit of observation for election results at the constituency level, we aggregate the parliamentary election results to the district level as constituencies are units within districts.[19] Ghana has a first-past-the-post electoral system, so a party is considered to have won a district if it captures a relative majority of the parliamentary vote share. For districts with more than one MP, alignment is determined using the difference between the average of the sum of votes for the parliamentary candidates of the winner of the national election and the average of the sum of votes of the parliamentary candidates of the loser of the national elections.

$Margin$ is measured as the difference between the percentage of vote share of the parliamentary candidate of the party that wins the national elections, and the percentage of vote share of the parliamentary candidate of the main opposition party that loses the national elections. We use the vote shares of NPP and NDC in determining vote margin, and assign winner or loser according to which of these two parties wins the national presidential elections. In other words, $Margin$ denotes the margin of victory, with a positive showing an aligned, and a negative margin an unaligned district.[20]

Our control variables are the total population of the residents in the district and the enrolment rate at the basic education level in the district. Total population is constructed from the census data and population projections for the districts by the Ghana Statistical Service (GSS). Enrolment rate is measured as the ratio of the sum of enroled pupils in basic education in a given year (creche, nursery, kindergaten, primary and junior high school levels; they are aged between 0-14 years) to the young population (population aged 0-14) in the district in the same year. Enrolment rate is our proxy for basic schooling, which DAs are responsible for providing. Data on the enrolment rate at the basic education level is sourced from the various rounds of the Ghana Annual Schools Census (Basic Schools Information) by the Ministry of Education (MOE), Ghana.

We present our descriptive statistics in Table 1. From the table, districts have relatively

[19]Banful (2011) adopts a similar approach to aggregating constituency-level election results to district-level results. She also notes that presidential and parliamentary results in Ghana are virtually the same, as candidates of the two major parties win in both the presidential and parliamentary elections held in any given district.

[20]Since Ghana is effectively a two-party state, assume two parties in an election, Party A and Party B. Assume further that there are 3 constituencies in district i at time t. Both parties field candidates for each constituency. Hence, we aggregate the percentage of votes obtained by all candidates of Party A and divide by 3 and do same for Party B. If Party A's presidential candidate wins the national elections, then we assign Party A as the winner and Party B as the loser, and construct $Margin$ and $Align$ as described.

higher levels of expenditure than revenue, suggesting they are likely to incur budget deficits on average. The mean central government grant received by the districts is higher than the mean internally generated funds of the districts. The latter is confirmed by the descriptive statistics of central government grant as share of total revenue and IGF as share of total revenue (Grant share and IGF share respectively). In particular, central government grants constitute 83.78% of local government total revenues on average, while local government IGFs make up approximately 16.70% of local government total revenues. The bigger share of central government grants to local government total revenue suggests local governments in Ghana have low levels of fiscal autonomy, and are largely dependent on central governments.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. dev	Min	Max
IGF	3,301	2039882	9118828	20.9	2.30E+08
Grants	3,269	9788712	1.94E+07	0	3.20E+08
Total revenue	3,285	1.18E+07	2.58E+07	86.42	4.50E+08
Total expenditure	2,845	1.17E+07	4.55E+07	110	1.50E+09
NDC_par	873	41.55415	19.65789	0	90.01
NPP_par	872	46.25414	16.83286	0	99.7
Enrolment rate	3,545	60.18422	38.5824	0	311.484
Population	3,793	142810	187188.7	21346	2100000
Number of MPs	3,795	1.440053	1.551872	1	13
Align	3,795	0.879315	0.325804	0	1
Unalign	3,795	0.118841	0.323644	0	1
Margin	1,022	2.887136	32.71193	-86.5	99.39999
Grant_share	3,267	0.837837	.150159	0	1
IGF_share	3,283	0.166915	0.169961	.00064	3.4545

Note: Descriptive statistics for all variables using the full sample of districts.

5 Results on the effects of political alignment on fiscal outcomes

5.1 Electoral cycles

The results for the electoral cycle effect of local government fiscal outcomes are given in Table 2. Columns 1-3 of Table 2 show results for central government grants; columns 4-6 show results for internally generated funds (IGFs); and columns 7-9 ahow results for total expenditure. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for one year and two years preceding the elections; and 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

The coefficient of the election year dummy, *Election*, is positive and statistically significant in almost all cases (except the baseline results for IGF). The results therefore show all local

government fiscal outcomes increase in election years compared to non-election years (i.e. the base category). The magnitudes of the coefficients range from 15-110 percent. In the baseline results, the effect size of the election year dummy is largest for total expenditure, which is driven by a higher central government grant allocation to local governments in election years. Interestingly, although not statistically significant, the coefficient of the election year dummy for IGF in the baseline regression is negative. Hence, it may be said that the predilection of central governments of all political ideologies to increase grant allocations to DAs is enhanced in election years, which drives a higher level of total local government spending. The finding of an increased central government grant allocation in election years is in line with the results of Banful (2011) and Fumey (2018) on Ghana, although the mentioned studies limit their measure of grants to the DACF. Ahwoi (2010) however notes that DAs face planning difficulties on account of such cyclical delays, particularly in DACF allocations, which create uncertainty and unreliability.

In the 'Cycle' columns, we find an interesting electoral cycle. First, the *Election* and $Election_{t-2}$ year dummies are positive, while the $Election_{t-1}$ year dummy is negative for all local government fiscal outcomes. Second, governments seem to be benevolent in the mid-term of their mandate as shown by the relatively higher levels of central government grant allocations in $Election_{t-2}$ compared with *Election* and $Election_{t-1}$, and local governments seem to complement such efforts by raising more IGF in the mid-term. The latter leads to relatively higher levels of local government total expenditure in the mid-term compared with the election years although the increase in expenditure is smaller relative to all other fiscal outcomes. Third, local government fiscal outcomes are lowest in the year preceding the elections as shown by the negative coefficient of the $Election_{t-1}$ year dummy, with IGFs being the lowest, followed by central government grants and total expenditure respectively.

The very low IGFs in the $Election_{t-1}$ year, relatively smaller increase in IGFs in the election year, and the very high levels of total expenditure in the election year suggest that local governments in Ghana adopt a combination of reduced taxes and increased spending close to and in election years. This is suggestive of a targeted use of fiscal policy at the local government level for electoral reasons (see Drazen, 2001).

Next, we include the alignment dummy and an interaction term of election year and the alignment dummy. The results are shown in the 'Mediate' columns of Table 2. The alignment dummy is positive and statistically significant for all fiscal outcomes, suggesting that aligned DAs receive more central government grants (i.e. core-supporter targeting), raise more IGFs, and have higher total expenditure relative to unaligned districts. In election years however,

Table 2: Electoral cycle effect on local government fiscal outcomes

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.149**	0.586***	1.101***	-0.0599	0.371***	1.103***	0.336***	0.777***	1.010***
	(0.0627)	(0.0592)	(0.265)	(0.0574)	(0.0532)	(0.257)	(0.0651)	(0.0694)	(0.253)
$Election_{t-1}$		-0.398***			-0.578***			-0.196**	
		(0.0714)			(0.0669)			(0.0914)	
$Election_{t-2}$		1.268***			1.359***			1.196***	
		(0.0651)			(0.0680)			(0.0868)	
Align			0.722***			0.918***			0.362*
			(0.221)			(0.220)			(0.204)
$Elect * Align$			-1.125***			-1.352***			-0.886***
			(0.334)			(0.320)			(0.323)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,012	3,012	3,012	3,043	3,043	3,043	2,740	2,740	2,740
R-squared	0.249	0.291	0.250	0.213	0.273	0.215	0.220	0.252	0.222

Note: Fixed effect estimations. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for one and two years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment. Columns 1-3 shows results for central government grants, columns 4-6 for internally generated funds (IGF), and columns 7-9 for district expenditure. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

aligned DAs have lower fiscal outcomes as shown by the negative coefficient of the $Elect * Align$ interaction term. Hence, while there may be room for core-supporter targeting within a government's term of office, the extent of such targeting decreases in election years. This suggests perhaps a shift towards accommodating swing-voter preferences given that governments may be confident of the support of their core supporters in the elections. Such switching is consistent with expected political behaviour of most rational governments in the lead-up to elections. Added to this, aligned DAs raise lower own revenues in election years as shown by the negative and statistically significant coefficient of the interaction term for IGF. Again, there is no doubt that raising lower revenues in election years might have been influenced by electoral interests and uncertainty in voting behaviour among core supporters. In the end, total expenditure is lower in election years for aligned DAs. We will next examine these political alignment effects in more detail.

5.2 Political alignment of local government fiscal outcomes

The results for political alignment are given in Table 3. We find a positive and statistically significant effect of alignment, $Align$, on all local government fiscal outcomes, consistent with the earlier results for the electoral cycle. The largest effect is on central government grants, showing evidence of core-supporter targeting. The coefficient of $Margin$ is negative and statistically significant for all fiscal outcomes, suggesting that the DAs with larger margins of alignment have lower fiscal outcomes. The coefficient of the $Align * Margin$ interaction term is positive, indicating that strongly aligned districts have higher fiscal outcomes; however, it is statistically insignificant. The net effect (combining the interacted and non-interacted terms) for alignment is positive, and negative for the voting margin.

Table 3: Political alignment of local government fiscal outcomes

	Grants	IGF	Expenditure
	1	2	3
$Align$	1.391***	1.275***	1.117**
	(0.510)	(0.466)	(0.493)
$Align * Margin$	0.0153	0.00815	0.0119
	(0.0231)	(0.0218)	(0.0236)
$Margin$	-0.0351***	-0.0301**	-0.0306**
	(0.0123)	(0.0117)	(0.0122)
Controls	Yes	Yes	Yes
Observations	691	702	688
R-squared	0.220	0.198	0.216

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

The coefficients for the control variables (not shown) indicate that districts with larger populations have lower fiscal outcomes, and those with higher school enrolment instead have higher fiscal outcomes. The coefficients are all significant, with the exception of school enrolment in the IGF specification.

In sum, while being aligned is likely to be associated with higher central government grant allocations year-on-year, swing districts with low vote margins are more likely to benefit from any central government targeting. Strongly aligned 'core' districts instead may not necessarily be the largest beneficiaries of transfers over time compared with DAs with swing allegiance. This may explain why only few DAs in Ghana show continuous support for a particular party for more than eight years (i.e., two electoral cycles). The latter is reflected in the national elections, where no party has ever been in power beyond two consecutive terms. Further, the results suggest that swing DAs raise relatively more own revenues compared with core supporter DAs, with the lower the IGF, the bigger the margin of alignment – consistent with theoretical expectations. Similarly, aligned DAs in general have relatively higher total expenditure, although this decreases the bigger the margin of alignment.

5.3 Robustness analysis

5.3.1 One-MP districts and constant districts

The results for districts with one-MP, where political alignment is most clear-cut, are given in Tables A1 and A3 of the Appendix, for electoral cycle and political alignment respectively. We find similar electoral cycle results: (i) grants, IGFs and total expenditure increase in election years and in the mid-term of a government's four-year term, but reduce in the year preceding the elections; (ii) aligned DAs have relatively higher grants, IGFs and total expenditure over the course of the electoral cycle; and (iii) aligned DAs have relatively lower levels of grants, IGFs and total expenditure in election years. However, none of the coefficients in the political alignment results in columns 1-3 of Table A3 for the one-MP DAs is statistically significant.

For the sub-sample of constant DAs, we find similar electoral cycle results (see Table A2 in the Appendix): (i) positive and statistically significant effects of the $Election$ and $Election_{t-2}$ year dummies but a negative effect of the $Election_{t-1}$ dummy; (ii) a positive effect of alignment; and (iii) a negative effect of the $Elect * Align$ interaction term. In Table A3, columns 4-6 of the Appendix, we confirm the positive and significant coefficient for $Align$ and significant negative coefficient for $Margin$ that we saw for the full sample. However, the magnitudes of the effects are larger for this small sample of districts that were never subjected to municipal fragmentation during our period of analysis, suggesting stronger swing-voter effects.

5.3.2 Regression discontinuity design - RDD

So far, results have shown strong links between political alignment and local fiscal outcomes in Ghana, but we cannot confidently claim that these links are causal. In a further robustness check, we more closely examine the average *causal* effect of political alignment on local government fiscal outcomes using a regression discontinuity design (RDD) approach. Our treatment and assignment variables are $Align$ and $Margin$, respectively. Our control function, $Align * Margin$, is a second-order polynomial in $Margin$ interacted with our treatment variable $Align$. We adopt the *continuity-based* Regression Discontinuity design as our identification strategy to determine the causal effect of political alignment on central government grants to local governments in Ghana. Our estimation is based on testable continuity assumptions (Cattaneo et al. 2018). We estimate the Average Treatment Effect (ATE) of political alignment based on the discontinuity in observed outcomes at the cut-off, at the zero threshold. Stated differently, the continuity approach assumes that in the absence of treatment, potential outcomes are changing smoothly across the threshold; treatment alone then produces a discontinuity. An RD design is particularly suitable in our case given that local governments in Ghana are relatively homogeneous in nature, having a similar administrative, budgetary, fiscal, political, and institutional structure. We assume triangular kernel weights with bandwidth selected using the Mean Square Error (MSE)-optimal bandwidth choice.

First, we carry out a graphical analysis to examine the density and distribution of our assignment variable and show evidence of discontinuity. We discuss a histogram and a density plot of Margin showing its distribution along the zero cut-off in Figure 1. We then plot the margin of alignment, on the horizontal axis and the fiscal outcome of each district on the vertical axis in Figure 2. Recall that the results derive from the continuity-based RD design proposed by Cattaneo et al. (2018), with MSE-optimal bandwidth choice. For easier interpretation of the plots, the margin of vote is restricted to the range [-40, 40], and estimates include the 95 per cent confidence intervals. We make use of 40 bins in all our plots. Figure 1 clearly shows that the margin of alignment (i.e. the margin of victory) is distributed around zero(0), with some districts barely aligned, other districts barely unaligned and more districts clearly won or lost. It also illustrates the discontinuity in margin of alignment with the density distribution along the cut-off of zero (0), clearly shown with a 95 per cent confidence interval. This justifies our use of margin as the assignment variable. Figure 2 shows the RD plot of DAs' fiscal outcomes in real per capita terms. There is clear discontinuity in all fiscal outcomes at the margin of alignment, with the distribution of outcomes along the cut-off of zero (0) shown with a 95 per cent confidence interval. Also evident is that – as we move away from the cut-off – unaligned

districts (on the left side of the cut-off) and aligned districts (on the right side) do not differ much in their fiscal outcomes. However, the estimation fit – denoted by the length of the vertical lines or 'whiskers' extending from the sample average points – is less precise among unaligned districts. The strength of any alignment effect is tested below.

The RD estimation results in Appendix Table A4 are statistically insignificant, suggesting that the alignment effect shown in the graphs is not very strong. The lack of statistically significant results here is probably due to the presence of 'noise' in the data, compounded by the relatively small number of observations in our sample. Given that the number of districts increased over the period of study due to the creation of new districts, our estimations are being affected by the addition of new districts and the dropout and/or split of existing districts. Hence, any political alignment effect that existed in the full sample is likely cancelled out by these major changes in district size and number (recall that the number of districts nearly doubled from 110 at the start of our period to 216 at the end in a multi-step fragmentation process), and consequently by the limited period of observation for many new districts. Finally, RDD itself thrives where the number of observations is large. The RDD estimates for the sub-sample of constant districts were larger but still statistically insignificant.

5.3.3 Time-differences-in-differences

To further investigate causality, we also make use of data for successive terms of office to determine the effect of *variations* in political alignment on changes in local government fiscal outcomes. Specifically, we consider the average of local government fiscal outcomes across successive terms of office of each government. Given that a term of office of a government covers a period of four years, we consider the average of fiscal outcomes over the entire four-year period. This allows us to account for any possible switching effects of alignment between any two election periods, an important consideration for Ghana where incumbency advantages hardly persist beyond any eight-year period (i.e. two electoral cycles). Intuitively, a diff-in-diff approach helps address possible omitted-variable biases in the case of the control variables and other fixed individual characteristics of the DAs. The approach is possible for Ghana as there are few by-elections within any four-year term period (a single term), limiting the switching effect of political alignment in a DA within a single term. Furthermore, the homogeneous nature of DAs and Ghana's national elections across DAs provide relatively stable electoral features from one term to another, hence reducing the possibility of a correlation between changes in electoral features and changes in alignment status. On the downside, due to fragmentation some districts (new or old) may only enter the full sample for one or two terms. This severely limits

the statistical power of our time-differences-in-differences estimations [21].

The results for our time-diff-in-diff estimations are given in Table A5. Given the focus on variations in political alignment across terms, the number of observations decreases substantially wrt to our main results above. Nevertheless, the results for grants in column 1 show that between any two terms of government, core-supporter DAs receive more central government grants. This is shown by the positive and statistically significant coefficient of $D.Margin$ for grants. Note that "grant" here is the average grant over the entire term of a government's four-year mandate. Hence, average grant receipts are likely to be higher between any two terms for aligned DAs, the bigger the margin of alignment. For IGF in column 2 of Table A5, we find that aligned DAs raise on average more revenues between any two terms, but less so the bigger the margin of alignment (though still positive in net terms). This is shown by the positive and statistically significant coefficient of $D.Align$ and the negative and statistically significant coefficient of $D.Align * Margin$. The results for total expenditure in column 3 of Table A5 show a negative and statistically significant coefficient for $D.Align * Margin$ but a positive and statistically significant coefficient for $D.Margin$. The net effect for the voting margin is negative: districts with larger voting margins for the ruling party see lower expenditures across terms.

Overall, we find some indication that DAs that are politically aligned with the central government have higher fiscal outcomes across terms than the unaligned DAs, consistent with our main year-on-year results shown in Table 3. Unlike our main results, however, the DAs with a higher electoral margin tend to have higher fiscal outcomes across terms, though the net effect of $Margin$ is mostly negative – i.e. 'core' districts see lower fiscal outcomes, consistent with our main results. It seems that strongly aligned districts do not systematically benefit across terms, which makes sense in the context of the volatile political allegiance of Ghana, where only few DAs maintain party allegiance for more than two four-year terms.

6 Conclusions

The present paper examines the effect of political alignment on subnational fiscal outcomes in Ghana, which has a complex system prone to peculiar political pressures at the local district level. We use a new dataset for Ghana on central government grants to local governments, district budgets with information on internally generated funds and total expenditures, and election outcomes spanning the years 1994-2018 and six national elections.

We find evidence of large electoral cycle effects: grant allocations, district expenditure and IGFs are highest in the mid-term of the government's four-year mandate; decrease in the year

[21] A similar approach has been used by Sol-Oll and Sorribas-Navarro (2008) for Spain.

preceding the next national election; and increase again in election years. On average across the electoral cycle, we find that districts that are aligned with the central government receive more grants, have higher expenditure and also higher internally-generated funds than non-aligned districts. However, in election years aligned districts have lower fiscal outcomes.

A closer look at alignment effects from one year to the next shows that while being aligned is clearly associated with higher fiscal outcomes overall, there is no clear benefit for 'safe' or 'core' DAs with large voting margins in favor of the party in power. Instead, swing districts have seen higher fiscal outcomes. Using a time-diff-in-diff approach across terms, we find similar net results for alignment and for high voting margins. Combined with Ghana's two-term pattern for political parties in power so far, our findings overall imply a lot of fluctuation in local fiscal outcomes, meaning that few districts have systematically fiscally benefited (or suffered) from their political alignment.

This may also have implications for the impact of municipal fragmentation in Ghana. There has been an ongoing process of municipal fragmentation since the current Constitution was adopted in 1992, which has led to an increase in the number of districts from 110 in 1994, to 216 at the end of our sample period. Interestingly, when we restrict our sample to only those districts that were never fragmented – our 'constant' district sample – we find similar year-on-year alignment effects to those in the full sample, but with larger coefficients. This suggests that despite worries of politically-motivated municipal fragmentation and gerrymandering in Ghana (see Riedl and Dickovick 2014; Mohammed 2015),[22] the process has (perhaps inadvertently) watered down any attempts at systematic, targeted intergovernmental transfers, and moreover done so more successfully than the obstacles to party favoritism that are built in to the decentralized system. Whether this persists in the future remains to be seen.

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[22] See Green (2010), Grossman and Lewis (2014); and Hassan (2016) for the theory that the creation of new districts is used as a form of patronage to reward or entice political support.

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Appendix

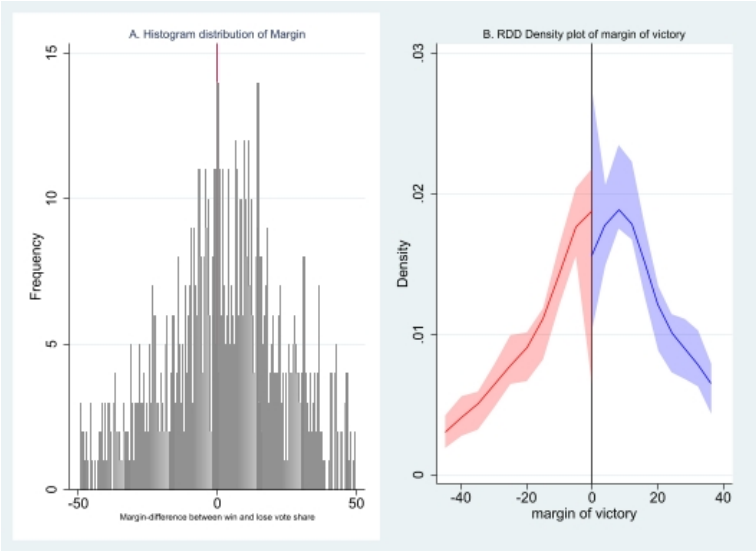

Figure 1: Histogragram distribution of Margin around zero and RD plot of Margin
Note: In Panel A, the histogram is constructed for margin in the range [-40, 40]. The central line splits the distribution at the cut-offpoint of zero(0). In Panel B, the central line splits the margin of alignment in the range [-40, 40] at the cut-off point of zero(0). The shaded lines are the 95 per cent confidence interval. Data used covers the period 1994-2018

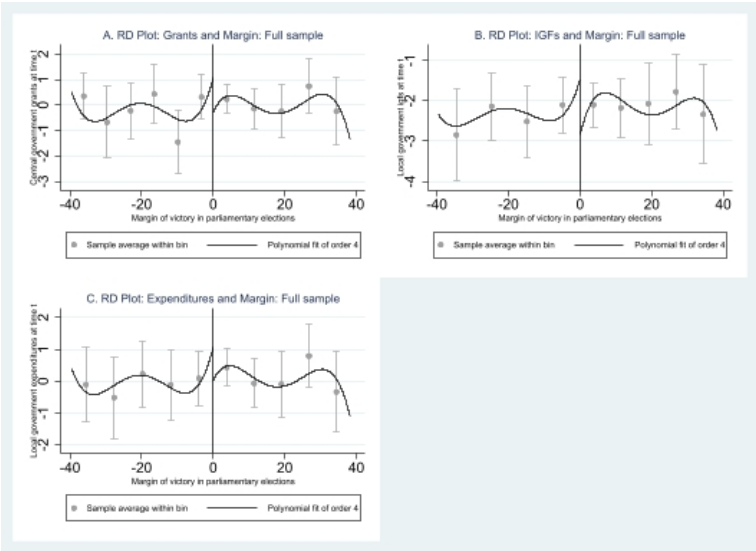

Figure 2: RD plot of fiscal outcomes and Margin
Note: Panel A represents Grants and Margin, Panel B represents IGF and Margin and Panel C represents Expenditure and Margin. Data used covers the period 1994-2018

Table A1: Electoral cycle effect of local government fiscal outcomes: One-MP districts

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.142*	0.517***	1.094***	-0.0691	0.286***	1.264***	0.349***	0.709***	0.957***
	(0.0765)	(0.0693)	(0.282)	(0.0725)	(0.0633)	(0.264)	(0.0831)	(0.0831)	(0.275)
$Election_{t-1}$		-0.405***			-0.591***			-0.192*	
		(0.0861)			(0.0804)			(0.112)	
$Election_{t-2}$		1.110***			1.167***			0.991***	
		(0.0802)			(0.0860)			(0.111)	
Alignment			0.676***			1.028***			0.235
			(0.243)			(0.238)			(0.230)
$Elect * Align$			-1.153***			-1.562***			-0.850***
			(0.331)			(0.304)			(0.327)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,406	2,406	2,406	2,429	2,429	2,429	2,154	2,154	2,154
R-squared	0.204	0.249	0.207	0.174	0.237	0.178	0.172	0.202	0.174

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for 1-year and 2-years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

Table A2: Electoral cycle effect of local government fiscal outcomes: Constant districts

	Grants			IGF			Expenditure		
	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate	Baseline	Cycle	Mediate
	1	2	3	4	5	6	7	8	9
Election	0.104	0.775***	0.888*	-0.135	0.527***	0.717	0.339***	1.171***	0.675
	(0.0990)	(0.0925)	(0.498)	(0.0946)	(0.0858)	(0.444)	(0.111)	(0.105)	(0.460)
$Election_{t-1}$		-0.146			-0.287***			0.354**	
		(0.113)			(0.105)			(0.142)	
$Election_{t-2}$		1.749***			1.825***			1.802***	
		(0.0798)			(0.0791)			(0.112)	
Alignment			0.473			0.572**			0.104
			(0.343)			(0.278)			(0.273)
$Elect * Align$			-0.991			-1.043			-0.481
			(0.696)			(0.635)			(0.644)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	799	799	799	803	803	803	740	740	740
R-squared	0.235	0.284	0.236	0.211	0.275	0.213	0.200	0.241	0.201

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively. 'Baseline' refers to the results with the Election year dummy only; 'Cycle' refers to the results with the election year dummy and dummies for 1-year and 2-years preceding the elections; 'Mediate' refers to the results with the election year dummy and the interaction of the election year dummy and alignment.

Table A3: Political alignment of local government fiscal outcomes-One-MP districts and Constant districts

	One-MP districts			Constant districts		
	Grants	IGF	Expenditure	Grants	IGF	Expenditure
	1	2	3	4	5	6
$Align$	0.586	0.530	0.343	2.132**	2.092**	2.144**
	(0.482)	(0.444)	(0.479)	(1.034)	(0.933)	(0.971)
$Align * Margin$	-0.0133	-0.0182	-0.0153	0.0323	0.0295	0.0309
	(0.0209)	(0.0200)	(0.0216)	(0.0408)	(0.0375)	(0.0402)
$Margin$	-0.00871	-0.00610	-0.00523	-0.0583**	-0.0563**	-0.0563**
	(0.0119)	(0.0113)	(0.0118)	(0.0241)	(0.0224)	(0.0236)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	565	571	557	201	202	204
R-squared	0.195	0.172	0.192	0.226	0.217	0.221

Note: Fixed effect estimations. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capita terms. ***, **, * represent statistical significance at 1, 5 and 10 per cent levels, respectively.

Table A4: RDD estimations for local government fiscal outcomes

	Grants	IGF	Expenditure
	1	2	3
RD_Estimate	0.160	-0.247	0.281
	(0.782)	(0.757)	(0.808)
Controls	Yes	Yes	Yes
Observations	691	702	688

Note: Estimations are done using the second-order polynomial. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variable is measured in real per capital terms. ***(**)(*) represent statistical significance at 1, 5, and 10 per cent levels respectively.

Table A5: Political alignment: Time-difference-in-difference estimation

	Grants	IGF	Expenditure
	1	2	3
$D.Align$	0.309	0.693**	0.432
	(0.274)	(0.269)	(0.312)
$D.Align * Margin$	-0.00890	-0.0113**	-0.0142*
	(0.00633)	(0.00542)	(0.00778)
$D.Margin$	0.00569*	0.00406	0.00860**
	(0.00341)	(0.00312)	(0.00412)
Controls	Yes	Yes	Yes
F-stats_d.align	1.27(0.261)	6.62(0.0105)	1.91(0.1678)
Observations	387	389	381
R-squared	0.454	0.327	0.380

Note: Estimations done with all variables in first-difference. All regressions include a constant term. Robust standard errors clustered at the district level are in parenthesis. The dependent variables are measured in real per capita terms. ***(**)(*) represent statistical significant at 1, 5 and 10 per cent levels respectively.