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# Regional cleavages in African politics: Persistent electoral blocs and territorial oppositions

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A B S T R A C T

Do socio-economic cleavages shape electoral dynamics in African countries? Previous individual-level and party systems research on African politics has de-emphasized socio-economic factors, contributing to the common view that ethnic cleavages and short-term ethnic alliances define politics both locally and nationally. Focusing on Kenya, Zambia, and Malawi, we draw on methods in electoral geography to offer a spatial analysis of geographic patterns in constituency-level electoral returns over three decades that reveals the existence of persistent *regional* voting blocs that, in their temporal stability and multiethnic character, are not well explained by prevailing theory. The anomalies open the door to a reinterpretation national electoral structure and dynamics in the three countries that takes the geographic clustering of the persistent voting blocs as a clue to their etiology. We propose an interpretation that focuses on core-periphery cleavages in national electorates, following Lipset and Rokkan's (1967) classic model of territorial oppositions in countries undergoing political and economic integration and modernization. DHS data and proxies for regional economic activity support this interpretation. Socio-economic cleavages of the type explored in comparative political economy literatures on spatial inequality and territorial politics may be more salient in African electoral politics than previously thought.

## 1. Introduction

This paper advances a comparative and macroscopic analysis of regional voting patterns in African countries. Using comparative and longitudinal data, and electoral geography methods little used in African studies, we document the existence of persistent regional electoral blocs in three countries that are often taken as exemplars of fluidity, rather than stability, in electoral voting patterns – Kenya, Zambia, and Malawi. We argue that the observed patterns are not well accounted for in existing theory, and that the discrepancies open the door to an alternative, and more encompassing, interpretation of structure and cleavage in electoral dynamics.

Most studies of electoral politics in African countries since the 1990s have been focused either on individual-level voter (or politician) behavior within localities, or on national-level political systems. The former has stressed the large extent to which ethnic identity predicts individual-level vote choice, and the latter has been concerned with low levels of party and party system institutionalization. The two literatures tend to converge around an emphasis on ethnicity as the main socio-political cleavage in most African countries, and to emphasize the weak institutionalization and shifting nature of electoral coalitions enabled by a lack of permanent political interests.

Departing from most existing work on African electoral politics, this paper shifts the analytic scale from the micro-level to the meso-level of regionally-clustered groups of electoral constituencies. We also shift the focus away from political parties themselves, and instead track geographic voting patterns in the electorate that persist independent of party labels. Using a spatial analysis of voting outcomes in presidential elections in Kenya, Zambia, and Malawi since 1990, we identify multiethnic regional voting blocs that persist across elections in each country. The analysis detects a structural feature of national voting that has not been highlighted in earlier work – a singular, geographically-defined line of regional cleavage between two main electoral blocs. Although the present paper does not test a causal theory of bloc etiology, we argue that the observed patterns of spatial clustering and cleavage are isomorphic to those identified by Lipset and Rokkan (1967) in their classic study of core-periphery oppositions that can emerge in the course of state building and national economic development. In Lipset & Rokkan's theorization, territorial oppositions arise from spatial-sectoral competition, persistent regional economic and social inequalities, and regional tensions associated with processes of national economic integration. Our empirical results are consistent with such a reading for the three African countries we study. Dynamics of territorial opposition in these three countries exhibit strong and persistent lines of regional

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competition and cleavage between economically-leading, predominantly agricultural regions, or between dynamic export-producing regions and poorer peripheries. We offer descriptive empirics and short case histories to support this interpretation.

The main contribution of the paper is to connect the analysis of African elections to broader theories of regional cleavage in national politics. Economic geography, spatial economic inequalities, and regionalism arising from economic interests appear to contribute to the over-time structuration of electoral cleavage in these countries to a greater extent that previous theories of electoral dynamics have allowed. We show that the persistent patterns in electoral geography that we identify cannot be "read off" an underlying ethnic geography, or attributed at the regional and national levels to mechanisms associated with ethnic diversity or the retail politics of ethnic clientelism.

As far as we know, this is the first spatial analysis of geographic voting patterns in African countries that combines electoral data both cross-nationally and over-time. We use electoral-geography methods and a new, georeferenced dataset on constituency-level electoral outcomes across 15 presidential elections to identify persistent regional voting blocs in each of three countries. Using these data, we develop new empirical strategies for identifying regional persistent voting blocs. To describe economic differentiation and inequality across the predominantly-rural voting blocs, we aggregate georeferenced survey data from nine country-year DHS survey rounds (612,000 persons)[1] to the electoral constituency and electoral bloc level for all three countries. The surveys provide household and individual-level indicators of socioeconomic status, as well as self-reported ethnicity data. Nighttime luminosity data provide a proxy measure of regional levels of economic development. This empirical strategy allows us to map stable geographic voting patterns over persistent patterns of uneven economic development. The data provide support for linking electoral geography to economic geography, and interpreting the electoral cleavages we identify as expressions of regional tensions arising from uneven development.

Part I situates the analysis with respect to past work on ethnicity and ethno-regionalism in African election studies, and advances an alternative understanding of electoral dynamics at the meso- and national levels. We frame an interpretation that takes persistent regional electoral blocs as the expression of territorial politics arising from regional economic differentiation. Part II uses electoral-geography methods and constituency-level electoral outcomes to identify the presence of persistent, regional voting blocs in each of three countries. Part III uses geocoded micro data to show that the persistent electoral blocs are multiethnic and regionally-cleaved in ways that are not fully accounted for in existing theories of ethnic clientelism. Part IV turns to political economy works on territorial politics to argue that electoral cleavages in Kenya, Zambia, and Malawi can be understood as expressions of core-periphery oppositions that emerge in the course of national economic development. We build our case on descriptive statistics that capture regional economic differentiation and inequalities, and thumbnail case studies that track histories of regional oppositions in national politics. A supplementary Appendix contains details on data, method, and statistical results, as well as supplementary data analysis.

## 2. Territorial politics in African countries: shifting the analytic focus to the regional level

Many studies of electoral dynamics in African countries, especially since the return to multiparty politics in the 1990s, have been cast either at the individual level or in terms of party-system aggregates. Studies of

African politics that use micro-data to analyze voters' or politicians' behaviour have generally not been concerned with spatial correlates of vote choice (except at the polling-station level), or the spatial clustering of constituencies within subnational regions. Work in the parties and party system literature is more explicit in recognizing that ethnic groups are geographically-clustered within and across constituencies, and much work describes voting patterns as ethno-regional. Yet this work commonly points to ethnic identity, rather than economic or economic geography factors, as the source of cleavage in African politics.[2] Where scholars have seen stability in voting patterns, it is often attributed either to co-ethnicity or to incumbent parties' strategic use of patronage politics to build multiethnic coalitions that do not outlast their incumbency.[3]

Mainstream theories of electoral dynamics in Africa countries have developed largely independently of systematic consideration of economic geography.[4] Existing work usually does not utilize information about regional economic geography in interpreting voting patterns or electoral dynamics, other than consideration of the urban-rural divide.[5] The term "region" or "ethno-region" is often invoked informally in both literatures – sometimes using ethnicity and region as proxies for each other,[6] sometimes using the term ethno-region to refer to particular administrative units,[7] sometimes using "ethno-regional group" as a synonym for ethnic group,[8] and sometimes taking the opposite track by distinguishing between geographic (region) and cultural (ethnic) phenomena.[9] It is rare to find the concept of "region" used in a theoretically motivated way.

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[2] See Kuenzi and Lambright (2001), Rakner et al. (2007), Ferree (2010), Elischer (2013); Arriola (2013), Weghorst & Bernhard, (2014); Horowitz (2019). Although some scholars do distance themselves from the theoretical baggage (causal etiology) associated with the concept of "ethnicity" by defining ethnic voting at the individual level as a non-specific form of utilitarian voting, or as a form of voting based on local interests, the same work often refers to more substantive theories of ethnic voting to generalize, contextualize, or argue for the significance of micro-level findings.

[3] Elischer (2019, 5–6, 29), Erdmann (2004). Aggregation of votes from the local to the national level is often thought to happen via coalitions of ethnic elites who form short-lived "coalitions of convenience" (Horowitz, 1985) based on elites' strategic political calculations, rather than on shared programmatic or policy interests (Arriola, 2013).

[4] In the empirical literature on voting behavior and party systems, arguments stressing ethnic identity as cultural driver of politics have rarely controlled for the explicitly geographic aspects of voting patterns across "rural" regions and districts of African countries. Studies rarely include regional dummy variables, identify spatial correlations across districts, or consider regional variables (other than the urban-rural distinction), or administrative-unit effects. Those that do control for spatial clustering, economic geography, or administrative-unit effects often acknowledge that ethnic and regional (or economic) drivers can be difficult to disentangle empirically, given the limitations of existing data. Some studies find that adding dummies for administrative units into regression models, or accounting for micro-level spatial clustering (segregation) of ethnic groups (e.g. within constituencies), weakens the statistical significance of the correlation between ethnicity and vote choice (Basedau et al., 2019, 475; Long & Gibson, 2015; Harris & Posner, 2019; Ejdemyr et al., 2018, 1132), and inequality (Alesina et al., 2016). See also Bratton and Kimenyi (2008); Ishiyama (2012); Ferree (2012); Ichino and Nathan (2013); Bleck and Nicolas van de Walle (2018).

[5] Some influential studies of urban-rural dynamics are Bates (1981), Resnick (2014), Conroy-Krutz (2006), Harding (2020), and Nathan (2019). Azam (2008) and Bates (2018) track interplay of urban-rural and regional dynamics.

[6] Archibong (2018, 327). Okafor (2013, 2) defines ethno-regional cleavages as "primordial."

[7] Kasara (2007, 2017).

[8] Posner (2004a).

[9] Erdmann (2004), Scarritt and Mozaffar (1999), Mozaffar et al. (2003), Posner (2004b), Kaspin (1995). Some explicitly distinguish between politically-salient aggregates such as "northern Malawi" or "Kenya Coast," on the one hand, and ethnic identities, on the other.

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[1] For data sources and analysis, see the Supplementary Appendix.

In this analysis, we invoke the economic-geography meaning of "region," conceptualized in terms of distinctive sectoral profiles of regions (such as mining, pastoral, or export-crop producing, or commercial food crop producing regions) and distinctions between richer and poorer, or economically-leading and economically-lagging, regions of a country. Comparative political economy theories of regional cleavages in national politics suggest that regional economic structure (wealth, occupational structure, industry mix), and regional economic position within the national economy may strongly influence the substance of politics and electoral dynamics.[10] This is particularly so in countries with high levels of economic inequality across subnational regions, and strongly territorial systems of political representation (Beramendi, 2012; McCann, 2020; Rickard, 2018; Rodden, 2019; Rogers, 2016). Co-existence of persistent regional inequalities and distinctive regional economies is likely to give rise to regionally-specific and potentially divergent preferences over sectoral policy, redistribution, and growth strategies. Because African countries exhibit some of the world's highest levels of inequality across subnational regions, and because most African countries' electoral systems are based on territorial representation, there is reason to suspect such regional effects to be visible in politics.[11]

Theories of regional political cleavage in countries in the throes of national economic and political integration are particularly relevant to the present study. In a classic conceptualization, Lipset and Rokkan (1967) propose a typology of "territorial oppositions" arising from uneven regional development, core-periphery tensions, and power struggles over political consolidation and the growth of national bureaucracy.[12] Similar models grounded in theories of the political-economic tensions that arise in the course of state-building are found in the work of Bensel (1984) for the US, Agnew (1996, 1997) for Italy, Hechter (2017 [1975]) for the UK, Diaz-Cayeros (2006) for Mexico, and Gibson (2013) for Argentina and West (2005) for Turkey.

Here, we draw on this work to suggest the plausibility of a theory of regional economic cleavage in African electoral politics that is more consistent, we argue, with the patterns of persistent electoral cleavage that we observe in constituency-level electoral data from Kenya, Zambia, and Malawi than theories of cleavage that focus on ethnicity alone. We do so by proposing that patterns of regional clustering observed across the three countries are isomorphic to those identified by Lipset & Rokkan (1967: 41–43) in their typology of "territorial oppositions" in countries undergoing state-building and national economic integration. They conceptualize these as taking the form of competition between (a.) economically advanced areas and "backward peripheries"; (b.) the capital and areas of economic growth in the provinces; or (c.) rival centers of political control.[13] We suggest the three forms of territorial opposition can be discerned in patterns of electoral cleavage and

bloc polarization that we identify in Kenya, Zambia, and Malawi, respectively. Descriptive statistics that depict economic inequalities and heterogeneity across blocs, combined with country case studies drawing on large secondary literatures, provide support for this interpretation.

One important implication of this study is that patterns of political cleavage in African countries may be more similar to those observed in other countries marked by core-periphery and regional economic cleavages than previous work has suggested. A focus on regional economic interests in African countries steers analysis toward the generic forms of politics that are observed in regionally-unequal countries in other parts of the world (Rogers, 2016). In African countries, these may co-exist or interact with ethnic politics, but are not reducible to the micro-level exchanges of votes for jobs or neighborhood-level "club goods" that are featured in theories of ethnic clientelism.

## 3. Persistent electoral blocs in three countries

A tradition in electoral geography draws on social cleavage theory to explore regional and territorial oppositions in national electoral systems. We do so here, following Agnew (1996) on Italy, West (2005) on Turkey, Osei-Kwame and Taylor (1984) on Ghana, Harbers (2017) on Mexico and others.[14] We use electoral geography and spatial statistics to identify persistent patterns of *regional* clustering in elections in Kenya, Zambia, and Malawi. We show that the clustering patterns observed are not reducible to ethnic geography, or generated by transient, patronage-based ethnic coalitions.

A general tendency in political science is to track geographic structure and cleavage in electorates by tracking the distribution of a particular political *party's* vote. Bloc voting is commonly defined as "bloc voting for party A," thus eliding the distinction between a party's base and an "underlying social cleavage" in the electorate.[15] One of our methodological innovations here is to focus on underlying social cleavages in the electorate (rather than political parties' voter bases) by identifying electorally-distinctive constituency blocs that persist over time, from one election to the next. We identify geographic clustering of constituencies that support a given party in election 1, and ask if that same geographic cluster of constituencies "sticks together" when voting in election 2, even if the electoral bloc votes for a different *party* each time.[16] Where constituencies "stick together" by returning high vote shares for a common candidate in a series of national elections, we designate the constituency cluster as a "persistent electoral bloc."

### 3.1. Country cases and case selection

The three countries here – Kenya, Zambia, and Malawi – feature prominently in the political science literature on electoral dynamics in Africa. They are useful for exploratory electoral geography research for

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[10] See Gourevitch (1979) and Bornschier (2009) for literature reviews. See also Bolton and Rowland (1997), Beramendi and Rogers (2015), and Rovny (2015).

[11] This reflects high levels of dependence on natural-resource based activities, including agriculture and mining, and the highly uneven spatial distribution of productive economic sectors (which often have an enclave character), arable land, and access to transport infrastructure, and populations. Kanbur and Venables (2005), Lessmann and Seidel (2017), Shimeles and Nabassaga (2018), and Boone and Simson (2019).

[12] References to Lipset and Rokkan (1967) have been a cornerstone of comparative politics works on European party systems, welfare regimes, and varieties of capitalism for decades. Complementary conceptions of core-periphery relations between leading and lagging regions are found in Caramani (2004), Massetti and Schakel (2015), and Henderson et al. (2013).

[13] In their model, ideology and organization are necessary to translate economic cleavages and tensions into politics. The work of political mobilization and agenda-setting is often done by political parties, producer groups, religious organizations, and other forms of associational life. Cultural or ethnic identities are not sufficient, on their own, for the emergence or persistence of regional or territorial oppositions in national politics.

[14] See also Flint (1998) and O'Loughlin (2002), O'Loughlin, Michael, and Talbot (1996a), O'Loughlin, Michael, and Talbot (1996), and West (2005). Recent work on the US and the UK underscores the salience of regional inequalities in structuring electoral dynamics in many post-industrial societies (e. g. Grumbach, Hacker, and Pierson, 2021; Johnston et al., 2017; Rodden, 2019).

[15] See Schinava (2017) and West (2005, 503) on this distinction in the work of Lipset & Rokkan and Kitschelt (1992).

[16] In basing the analysis on electoral constituencies, we opted for the lowest available and comparable unit of analysis for presidential election results. In the case of Kenya, Malawi, and Zambia, we were able to locate presidential constituency-level voting data for most elections, while such data are generally not available at lower levels of aggregation (such as wards). The alternative to constituencies would have been a higher level of aggregation such as districts or region/province. However, these units are not comparable across countries. Moreover, constituencies in most African countries, including the three in our sample, are meaningful political units. The SMD electoral systems make constituencies important units for political mobilization and party organization (Boone & Wahman, 2015).

four main reasons. (i) Together, they have inspired much in political scientists' basic understanding of the modal African party system. (ii) All are commonly regarded as countries characterized by high levels of electoral and partisan volatility. Although levels of party-nationalization have been relatively low (Wahman, 2017), such patterns have typically been attributed to high salience of ethnicity in politics (e.g. Arriola, 2013; Elischer, 2019; Horowitz, 2015; Rakner et al., 2007; Rakner & Svåsand, 2004). (iii) All three are marked by the high levels of regional economic differentiation and inequality that characterize African countries in general.[17] (iv) All have an unbroken history of multiparty electoral competition since the early 1990s, and have published disaggregated presidential election data for this period. They therefore enable robust electoral geography methods that are widely used in studies of other parts of the world.

The cases share some institutional features that facilitate a spatial reading of electoral results that are not present in all African countries. Most notably, all have presidential systems in which presidential candidates are elected on a plurality basis from a single national constituency.[18] Members of parliament are elected in concurrent elections in single member districts under a first-past-the-post rule. And like most African countries, all share the institutional feature of centralization of the national political system, with strong central control over resources and decision making. Capture of the presidency is the most significant asset in political competition, largely due to the high salience of the presidency in the allocation of resources for patronage and to foster economic development. Nevertheless, we cannot exclude the possibility that some of our results may be less generalizable to more proportional electoral systems.[19]

### 3.2. Data and method: Identifying persistent electoral blocs

Our analysis makes use of a new geo-referenced dataset of constituency-level presidential election results for 15 presidential elections held in Kenya, Zambia, and Malawi in the period 1991 to 2016. The electoral data allow us to track post-1990 voting patterns aggregated from the constituency level in each country.[20] We use basic tools in the electoral geography tool-kit – the Global and Local Moran's I measures of spatial association – to detect geographic patterns in constituency-level electoral results.[21]

The Global Moran's I ranges from −1.0 to 1.0. Positive and significant values mean that geographic support for the leading parties in each election is not dispersed uniformly or randomly (i.e., not distributed with uniform heterogeneity). Large and positive Global Moran's I values indicate a high degree of spatial autocorrelation, and thus considerable geographic clustering in the vote. For the four leading parties in each election in Kenya, Zambia, and Malawi, Global Moran's I values are high, positive, and statistically-significant, with average country scores ranging from 0.70-0.75.[22] This indicates high levels of spatial clustering in constituency-level results across elections in all three countries (See Appendix Table A1.). Across all three, rising Global Moran's I values over time suggests that regionalization of the vote has been on an

upward trend since 2000.

To identify persistent electoral blocs, we used the Local Moran's I to detect specific geographic areas of spatial autocorrelation in constituency results for each election, as per methods developed in Anselin, (1995). These are employed recently in Harbers and Ingram (2019a, 2019b), 73-6). We began by calculating vote shares per constituency in each presidential election in Kenya, Malawi, and Zambia since 1990, and then calculated a Local Moran's I statistic for each party's vote share in every constituency.[23] This statistic is then standardized to z-scores, which are used to identify statistically-significant clustering (using 5% significance level as a cut-off) across constituencies. We focused on clusters of similar, high vote shares (winning by a plurality) for the same winning party (i.e. positive spatial autocorrelation) in one particular election. At least three contiguous constituencies with statistically-significant spatial clustering in their vote shares constitute a "bloc." When these results are mapped for a particular election, the strong regional clustering in electoral results that is picked up in the Global Moran's I is revealed in geographic blocs of localized (regionalized) support for candidate (or party) A, B, or C in a given election.

Next, we determine *persistency* in the geographic clustering of constituencies over time by comparing the constituency make-up of each electoral bloc from one election to the next, counting the number of times a particular constituency is part of a given electoral bloc.[24] We are interested in the constituencies that tend to "stick together" as a bloc over time, even if the bloc votes for a different party in each election.[25] This procedure is described in Appendices 1.1 through 2.7.[26] A *persistent electoral bloc* is a statistically significant geographic cluster of three or more constituencies that vote together ("stick together") in at least two-thirds of the presidential elections since 1990. See the Appendices for the sensitivity of the blocs to using various coding rules.

Fig. 1 displays the persistent electoral blocs so identified in Kenya, Malawi, and Zambia.

Table 1 provides an example of the Central persistent electoral bloc in Kenya. It shows that the constituencies in the bloc stick together over time (with 5 splitting off in 2002 but then returning to the bloc), even though they have coalesced behind the banner of a different party in each election: from DP, to NARC, to PNU, to TNA/Jubilee. The voting pattern in the table, defined in terms of partisan affiliation of constituencies, would look fluid and highly unstable. Our analysis, by contrast, is focused on geographic clusters, and it underscores continuity over time. Except in 1992, when the constituencies of the bloc were split, they constitute a cohesive bloc.

Across all three countries, the constituencies that comprise the persistent electoral blocs account for about 50–60% of the national vote in each election since 1990.[27] Fig. 2(a–c) offers an overview of the size of the persistent blocs, both in terms of number of constituencies, share of the national electorate, and weight of each persistent bloc relative to the others (See AppendixTable A5). The largest persistent blocs are Central in

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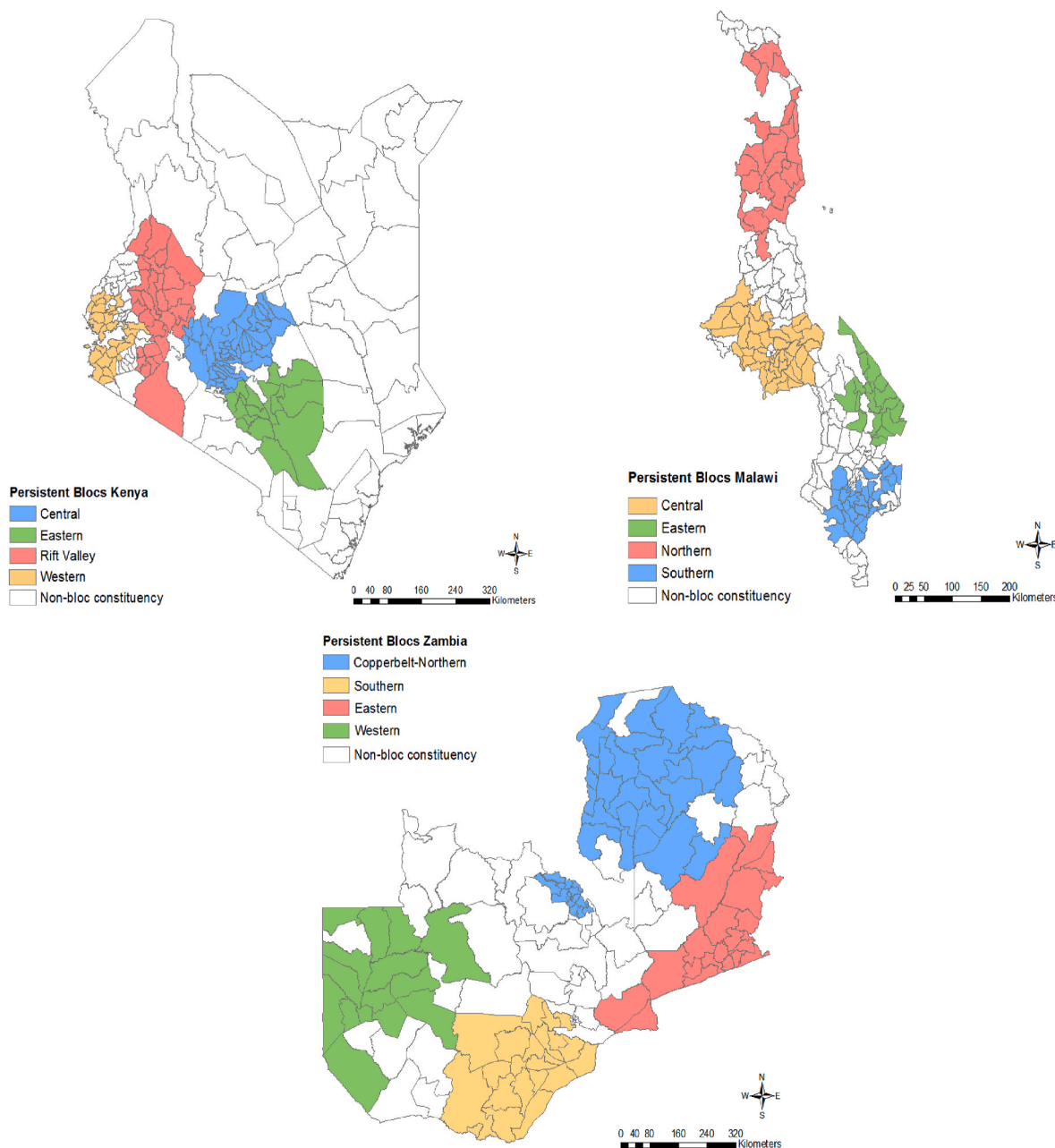[17] See Kanbur and Venables (2005), Shimeles and Nabassaga (2018). On these three, see Appendix Table A7.

[18] The 2010 Kenyan constitution requires that the winning presidential candidate wins at least 25% of the vote in at least half of the 47 counties.

[19] Indeed, such systems, although uncommon in Africa, tend to be associated with higher levels of party nationalization (Wahman, 2017).

[20] The elections are Kenya: 1992, 1997, 2002, 2007, 2013; Malawi: 1999, 2004, 2009, 2014; and Zambia: 1991, 1996, 2001, 2006, 2011, 2016. See Appendix 1.0 and 1.1. Nation-wide polling-station data and voter exit poll data does not exist for any election in our sample.

[21] It summarizes the Local Moran's I, which we calculate below for each constituency. See O'Loughlin (1993) and Appendix 2.4.

[22] Regional clustering levels are thus comparable to those observed in Italy in the early 1990s (Shin & Agnew, 2007).

[23] See Anselin (1995, 2005), O'Loughlin et al. (1996a, 1996b). Spatial autocorrelation is an exploratory tool. Results need to be interpreted in combination with substantive knowledge. See Appendix 2.4.

[24] The focus on geographic clusters or "electoral blocs*," not political parties*.

[25] There are cases in which a "persistent electoral bloc" follows one individual candidate across several elections, even as s/he sheds one party label for another. For example, Kenya's Raila Odinga has retained his regional following over several electoral cycles under different party banners, as has Uhuru Kenyatta.

[26] Appendix 1.1 addresses unit and constituency boundary changes. Calculations for Kenya are based on the 2007 constituency shapefile, which had 44 constituencies. Splits raised the count to 51 constituencies in 2013.

[27] The share of *constituencies* that are bloc members, as an average across the elections in each country, is 54% in Kenya, 69% in Zambia, and 59% in Malawi.

**Fig. 1.** Electoral Constituencies and Persistent Electoral Blocs *Notes*: The persistent electoral blocs (incl. neighbors) are composed of constituencies that constitute statistically significant (at 5% level) clusters of winning vote shares for parties in presidential elections in at least 66% of the elections in our dataset. The constituency boundaries are Kenya 1997– 2013, Malawi 1999–2014, Zambia 1991–2011.

Kenya, Copperbelt-Northern in Zambia, which we consider to be one persistent bloc,[28] and Central in Malawi, with 25%, 33%, and 23% vote share of the national electorate (averaging across elections), respectively. The bloc vote shares of the national electorate are fairly stable over time.[29] For the presidential winner's vote share and vote margin for each election and bloc in our three countries, see Appendix Table A4.

A substantial share of the national vote in all three countries comes from non-bloc constituencies.[30] Capital city constituencies are, in general, non-bloc constituencies (Horowitz, 2019; Resnick, 2014).[31] In the capital cities, winning parties' vote margins tend to be low, and rival and competitive constituencies are often adjacent to each other, making them "non-clusters" by definition. In this study, non-bloc constituencies *outside the capital city* are referred to as "rural non-bloc constituencies" for convenience, even though some contain important secondary cities. Like the capital city non-bloc constituencies, rural non-bloc constituencies tend to vote in non-similar ways to adjacent constituencies (i.e., for different

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[28] We consider the Copperbelt and Northern a single persistent bloc, following precedent in the Zambia politics literature in depicting these as an integrated region on the basis of either socio-economic unity (Bratton, 1980; Larmer & Fraser, 2007; Macola, 2010, 96 inter ali,; Bates, 2018; Gould, 2010, 46; Kim, 2017), a unifying Bemba language (Lindemann, 1847, 2011), or observed political cooperation (Elischer, 2013, 211, Posner, 2004a, Bates, 2018, 104). We understand these as complementary conceptualizations of regional coherence.
[29] Fluctuations are likely a function of registration levels, turn-out, and campaign effectiveness.

[30] These account on average for 45.3% of all votes in Kenya, 31% in Zambia, and 38% in Malawi.
[31] See Appendix 2.7 on the urban constituencies and their vote share.

**Table 1**
Winning parties in Central, Kenya.

| Year of Election | | | | | |
|---|---|---|---|---|---|
| | 1992 | 1997 | 2002 | 2007 | 2013 |
| Winning party in constituency | | | | | |
| (ODM/CORD) | 0 | 0 | 0 | 0 | 1 |
| (TNA/Jubilee) | 0 | 0 | 0 | 0 | 50 |
| DP | 16 | 42 | 0 | 0 | 0 |
| FORD(A) | 16 | 0 | 0 | 0 | 0 |
| KANU | 0 | 1 | 5 | 0 | 0 |
| NARC | 0 | 0 | 33 | 0 | 0 |
| ODM | 0 | 0 | 0 | 1 | 0 |
| PNU | 0 | 0 | 0 | 43 | 0 |
| Total | 32 | 43 | 38 | 44 | 51 |

*Notes:* The persistent electoral blocs (incl. neighbors) are identified based on the *plurality*.

parties, or for the same one with very different vote shares) or to "swing" from one incumbent to the next over time (see Appendix Figure A3).[32]

## 4. Ethnicity, blocs, and cross- and multi-ethnic coalitions

The observed electoral geography cannot be read simply as the aggregate expression of difference in ethnic identities. Similarly, the observed electoral blocs represent multi-ethnic alliances and cannot be explained as the contingent product of incumbent patronage alone.

### 4.1. Ethnic composition of blocs

We followed a method employed in earlier political science work to analyze the ethnic make-up of the constituencies that comprise the persistent electoral blocs. We used individual recodes of several rounds of georeferenced DHS individual surveys for all three countries, utilizing all nine DHS country-year rounds, to aggregate data on respondents' self-reported ethnicity to the constituency level.[33] The DHS data includes responses from 21,000 households in Kenya, 36,000 households in Malawi, and 15,600 households in Zambia (See Appendix 3.0.).

Fig. 3a-c describes the ethnic make-up of the constituencies within each electoral bloc. It reports the between-constituency average ethnic share for each bloc's largest ethnic group[34] (on the x-axis) and the share of all the bloc's constituencies in which the bloc's largest group is in plurality (on the y-axis). Dotted vertical lines denote the national average for all constituencies in each country. Fig. 3 shows that there is considerable variation in the extent of ethnic homogeneity of the blocs.[35] Nine of the thirteen are multiethnic. The only mono-ethnic blocs, in the sense that a single ethnic group is in the plurality in all constituencies and that this same group constitutes a majority in the average constituency within the bloc, are Central and Eastern in Malawi, and Eastern in Kenya. These three "monoethnic" blocs appear in the upper right corner of each panel of Fig. 3. Although Zambia's Copperbelt also has the same ethic plurality in every constituency (Bemba), the average constituency in the bloc is only 39% Bemba.
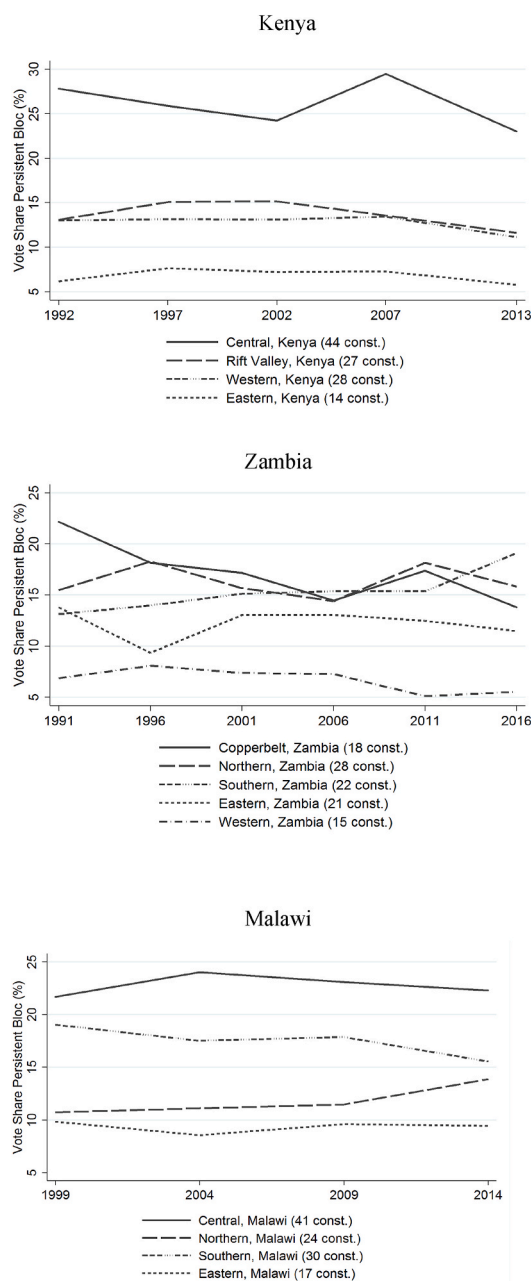
The electorally most important electoral blocs – including Central in Kenya, Southern in Malawi, and Copperbelt Zambia – are all multiethnic or ethnically heterogeneous. In all other blocs, at least two different ethnic groups are the plurality group in at least one bloc constituency. Malawi's Southern bloc consists of 5 different ethnic groups,



Fig. 2. (a–c): Persistent blocs' share of the national vote over time Notes: Numbers in parentheses in the legend indicate the number of constituencies per persistent electoral bloc.

Zambia's Eastern 7 different groups,[36] and Kenya's Central 4 different groups. We also find that constituencies in most of our persistent blocs are, on average, less ethnically homogeneous than the national average for constituencies.[37]

Figs. 4–6 show that the electoral blocs are not simple artefacts of "ethnic homeland voting." We constructed spatial clusters of the largest ethnic groups for each country using the constituency-level DHS ethnicity data and Moran's I statistics. We overlaid these "ethnic blocs" onto the voting blocs to determine the extent to the latter map onto ethnic homelands (See also Appendix 5.).

These figures demonstrate that the persistent electoral blocs are not

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[32] Earlier work has understood "swing districts" as constituencies without ethnic co-ethnic candidates (e.g. Horowitz, 2015; Jablonski, 2014). See also Weghorst and Lindberg (2013) and Wahman and Boone (2018).

[33] See Jablonski (2014), Beiser-McGrath et al. (2021), Fetzer & Kyburz, (forthcoming), and Appendix 3.0.

[34] That is, as an average of all the bloc's constituencies.

[35] For transparency, we present the data from the Copperbelt and Northern constitutive parts of the Copperbelt-Northern bloc separately.

[36] As observed by Posner (2004b).

[37] See Appendix Figure A2.

**Fig. 3.** Multiethnicity of Persistent Blocs *Notes*: Figure displays constituency-average ethnic composition across constituencies within permanent voting blocs. Ethnicity is calculated using individual recodes of multiple DHS rounds. Vertical reference lines indicate the national average ethnic share for the largest ethnic group in all constituencies.

simple geographic proxies for ethnic blocs. This is particularly true for some important blocs like Central in Kenya, Eastern in Zambia, and Southern in Malawi.

The color scheme in Figs. 4–6 denotes three types of constituencies. Darkest blue donates members of both the "ethnic bloc" and the electoral bloc. Medium blue indicates constituencies in the electoral bloc, but not the ethnic bloc. Lightest blue are members of the ethnic bloc, but not the electoral bloc The across-country average overlap between the persistent voting blocs and the ethnic blocs is 62% by the number of constituencies (i.e. 62% of the colored constituencies in Figs. 4–6 are colored dark blue), and 64% by population. The poor overlap is due mostly to the fact that the voting blocs are *larger* than the ethnic blocs (i. e. as show by the number of medium blue constituencies in Figs. 4–6). Some ethnic bloc constituencies lie outside of the electoral blocs (i.e. the lightest blue) (See Appendix 5.). Meanwhile, not all spatially clustered groups (i.e., contiguous clusters of three or more constituencies with the same ethnic majority) form persistent electoral blocs. For example, the constituencies composed predominantly of Ngoni in Malawi, Lunda in Zambia, Mijikenda in Kenya, and Somali in Kenya do not coalesce as persistent electoral blocs.

### 4.2. Blocs and coalitions in national elections

Relations between blocs, and between blocs and non-blocs, structure national elections. Appendix Table A6 describes national results for each of the 15 elections in our sample in terms of the share of the presidential winner's vote that can be attributed to each of the persistent electoral blocs, to the capital-city non-bloc constituencies, and to the rural non-

bloc constituencies. A general pattern emerges. In Kenya and Zambia, the largest persistent electoral blocs have combined with non-blocs to form coalitions that win national elections.[38] In Malawi, each of the two largest blocs aligns with a different, smaller bloc to form a national coalition. In each country, elections are marked by a clear and persistent opposition between two polarized blocs: Central versus Western in Kenya,[39] Copperbelt-Northern versus Southern in Zambia, and Central versus Southern in Malawi. The exceptions to this pattern are found in Kenya (2002) and Zambia 1991, when broad-based national opposition alliances overturned the long-time incumbents of the one-party era.

Analysis of winning coalitions reveals patterns in the constituency-level data that set our findings apart from earlier work on coalitions and cleavages in national electorates under multipartism. Influential work by Arriola (2013) and Elischer (2019) depicts incumbent ethnic blocs forging transient, opportunistic alliances with non-coethnics to produce "catch all parties." Our data suggest a characterization of coalitions and cleavage that differs in several regards. First, almost all the persistent electoral blocs, including the dominant blocs that provide the voter bases for national incumbents, are multiethnic. The multiethnicity of these persistent blocs is downplayed and undertheorized in existing work. Second, the constituencies most likely to be drawn into unstable alliances with blocs providing the voter base for the national incumbent are the

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[38] In Kenya prior to 2002, the winning coalition was composed of the Rift bloc plus non bloc constituencies; after that, it was the Central bloc plus non bloc constituencies.

[39] In 1992 and 1997 in Kenya, three blocs were poised against each other: Central, Western, and Rift. In these years, the relationship between the Western and Central blocs could be described as a "non-alliance," rather than an "opposition."
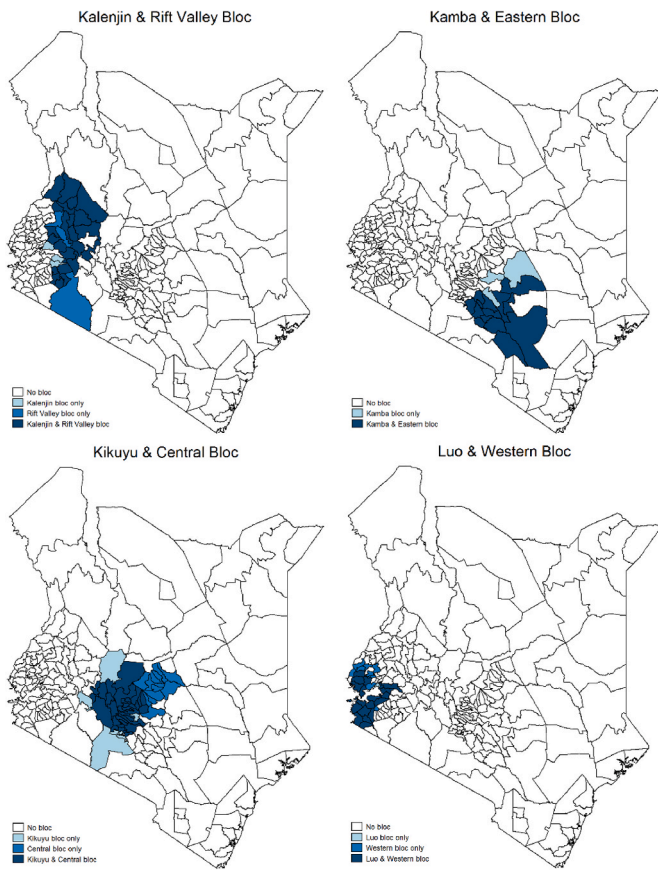
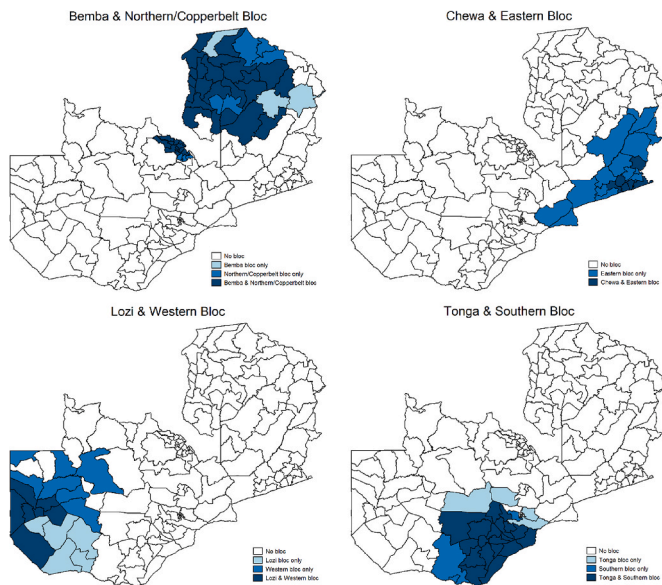**Fig. 4.** Comparison of ethnic and electoral blocs in Kenya.



**Fig. 5.** Comparison of ethnic and electoral blocs in Zambia.



**Fig. 6.** Comparison of Ethnic and Electoral Blocs in Malawi. *Note:*The maps overlay persistent electoral blocs and ethnic blocs. The ethnic blocs are composed of constituencies that constitute statistically significant (at 5% level) clusters of an ethnic group (by population share) and the ethnic group being the largest group in that constituency. We use the following constituency boundaries (shapefiles): Kenya 1997–2007. Zambia 1991–2011, Malawi 1999–2014.

and the Western bloc in Zambia. Persistent electoral blocs that are based on neither co-ethnicity, nor incumbent patronage are not described or explained in existing work.[40] Finally and most importantly, our analysis reveals a phenomenon not detected in the earlier work: a persistent, geographically-defined, dominant line of cleavage in each national electorate – the polarization between two rival blocs.

*non-bloc constituencies* (Appendix Figure A3). Winning catch-all parties do not really catch *all* – there are in fact stable, enduring cleavages in the national electorates. Thirdly, our data identify persistent, multiethnic electoral blocs that are *not* held together by the patronage of an incumbent president, such as the Western bloc in Kenya, the Northern bloc in Malawi,
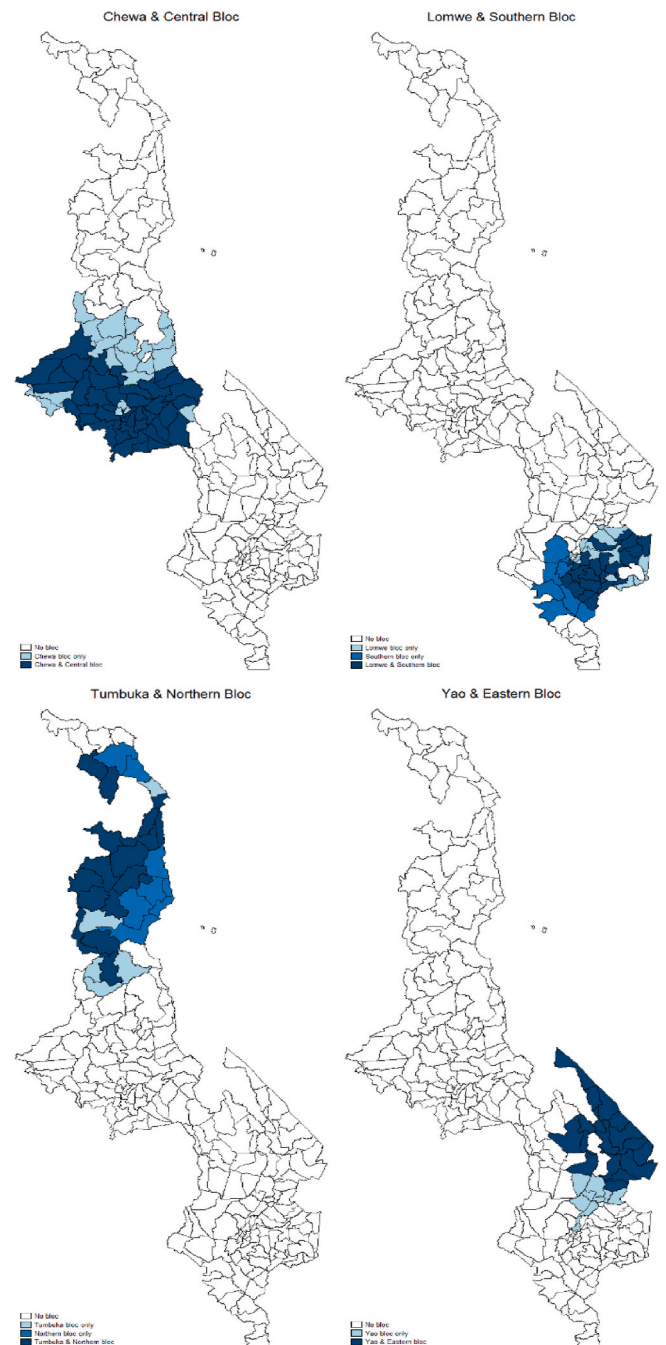
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[40] We reject as circular reasoning the argument that voting alignment across geographically-proximate ethnic groups is itself evidence of shared ethnic kinship, cultural similarity, or "membership in the same family tree."

## 5. Interpretation: Persistent blocs and territorial oppositions

We have identified persistent patterns of spatial clustering at the regional level in Kenya, Zambia, and Malawi, and established that many of these blocs are persistent and multiethnic in ways that fall outside of existing theory. The analysis of coalition patterns in national electorates suggests that in each country, elections since the 1990s have been marked mainly by a persistent opposition between two blocs: Central versus Western in Kenya,[41] Copperbelt-Northern versus Southern in Zambia,[42] and Central versus Southern in Malawi. It is an important task for future research to explain these fully, and to draw out their full implications for understanding drivers of electoral politics and ethnic mobilization.

In this section, we begin this work by proposing that the observed patterns of regional clustering are isomorphic to those identified by Lipset & Rokkan (1967: 41–43) in their analysis of "territorial oppositions" in countries undergoing state-building and national economic integration.

The countries featured here fit well within the scope conditions for such an analysis: they are postcolonial, developing countries in which governments have sought for the last six decades to centralize state power, extend the administrative apparatus of the state across the national territory, and build national economies. All exhibit strong regional inequalities and stark regional economic differentiation. Under these conditions, following Lipset & Rokkan and comparative studies of the political effects of regional economic inequality and divergence in other parts of the world, we can expect regional tensions and core-periphery oppositions to arise from two slow-changing features of national economies. The first is spatial-sectoral differentiation (e.g. tobacco-producing regions as distinct from maize-producing regions or mining regions).[43] This is associated with regional differentiation in modes and levels of integration into the national economy, as well as differences in market institutions, producer organizations and networks, and growth rates. It also may generate regionally-specific preferences around sectoral policy, issue salience, and expectations of government. The second is regional economic inequalities, which are exacerbated by forces of agglomeration that favor leading regions, and often give rise to competing regional preferences for pro-growth versus pro-redistribution policy orientations at the national level (Beramendi, 2012) and to divergent preferences over the territorial structure of government (e.g. levels of regional autonomy). Region-specific interests, organizations, and experiences may overlap with and gain meaning from ethnic identities, create new ethnic identities that displace or layer-onto pre-existing ones, or create new regional identities.

Lipset & Rokkan proposed a typology of regional or core-periphery oppositions in modernizing countries that is useful for present purposes: leveraging it here advances the argument that patterns of regional cleavage observed in African countries are not unique to these settings. They conceptualized territorial oppositions as taking the form of competition between (a.) economically advanced areas and "backward peripheries"; (b.) the capital and areas of economic growth in the provinces; or (c.) rival centers of political control. We argue that these different forms of regional competition can be discerned in patterns of electoral cleavage and bloc polarization in Kenya, Zambia, and Malawi, respectively.

In this section, we provide support for this interpretation by presenting descriptive statistics that depict economic heterogeneity across blocs, along with country case studies that draw on large secondary literatures on each country. Fig. 7a–c captures some of the most revealing contrasts in terms of levels of economic prosperity across the persistent electoral blocs in each country.[44] The figures summarize descriptive statistics presented in Appendix Table A7, which compares the blocs of each country in terms of household- and individual-level welfare indicators extracted from the DHS survey data, population data, and night-time luminosity data (a rough proxy for total wealth or level of economic development).[45]

A scatterplot for each country depicts the blocs with respect to each other in terms of their total population, total nighttime luminosity, and average adult education levels (a measure of advantage in potential for economic mobility and opportunity). A large circle in the upper right quadrant of one of the panels is a bloc with a larger population, higher average educational attainment, and greater total luminosity than the others. A small circle in the lower left quadrant is a bloc that lies at the other extreme. Capital city non-bloc constituencies are also located in figures, offering a visual representation of the very wide urban-rural economic inequalities that exist in each country. The other non-bloc constituencies ("rural non-blocs") are included in the scatterplots as a residual category.

The extent of economic advantage of the dominant, multiethnic, persistent electoral blocs – Central bloc in Kenya, Copperbelt-Northern in Zambia, and Southern in Malawi, is clear. Blue highlighting denotes these dominant blocs in Figs. 4c–7a. Yellow highlighting denotes the electoral blocs persistently opposed to these – Western bloc in Kenya, Southern in Zambia, and Central in Malawi.

In the thumbnail case studies below, we interpret these regional oppositions captured in the blue and yellow highlighting as embedded in decades-long patterns of sectoral differentiation and regional economic hierarchy, following the theorizations of regional political cleavages in developing economies advanced in the work of Lipset and Rokkan (1967), Bensel (1984), and others. The case studies argue that these juxtapositions define the main axis of regional cleavage in national politics in each country. The remaining persistent electoral blocs (those without color highlighting) are unstably aligned with one or the other opposing bloc. Conceptualizing these as "swing" blocs (Bensel, 1984) captures some of what has been described as volatility in existing work on African party systems. Our analysis refines earlier interpretations by emphasizing the internal, over-time cohesion of these electoral blocs, their economic standing relative to other blocs, and their pattern of over-time alignment.

### 5.1. Kenya: "Competition between advanced areas and poorer periphery."

Bloc competition and alignment in Kenya appears to fit the classic pattern of territorial opposition that pits a country's economically advanced areas against politically mobilized parts of the poorer periphery. Spatial inequalities are highest in Kenya of the three countries in this study. There is a steep concentration of national wealth and economic production in the Central persistent electoral bloc, which is adjacent to, but does not include, Nairobi. It forms a powerhouse which, together with Nairobi, appears to contribute about 60% of Kenya's GNP (Wankuru, 2019), and has been at the leading edge of Kenya's economic development since the 1920s. Smallholder export-crop production –

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[41] In 1992 and 1997 in Kenya, three blocs were poised against each other: Central, Western, and Rift. In these years, the relationship between the Western and Central blocs could be described as a "non-alliance," rather than an "opposition."

[42] Copperbelt-Northern and Southern were only aligned in the early days of MMD in opposition to the regional dominance of Eastern.

[43] Kim (2017, 2020) and Bates (1989, 2018) show how sectorally-targeted policy plays to regionally-specific sectoral interests in Zambia and Kenya. See also Kasara (2007, 163), Lieberman Evan and McClendon (2012).

[44] This is consistent with findings that Houle, Park, Paul, and Kenny (2019) and Alesina et al. (2016) who describe as ethnic inequality. They note that their findings pertain to geographic units.

[45] See the data sources in the notes to Appendix Table A7, as well as Appendix 3.0 and 4.0. On night time luminosity, Pinkovskiy, Sala-i-Martin, and Xavier (2016).

## (a) Kenya



## (b) Zambia



## (c) Malawi
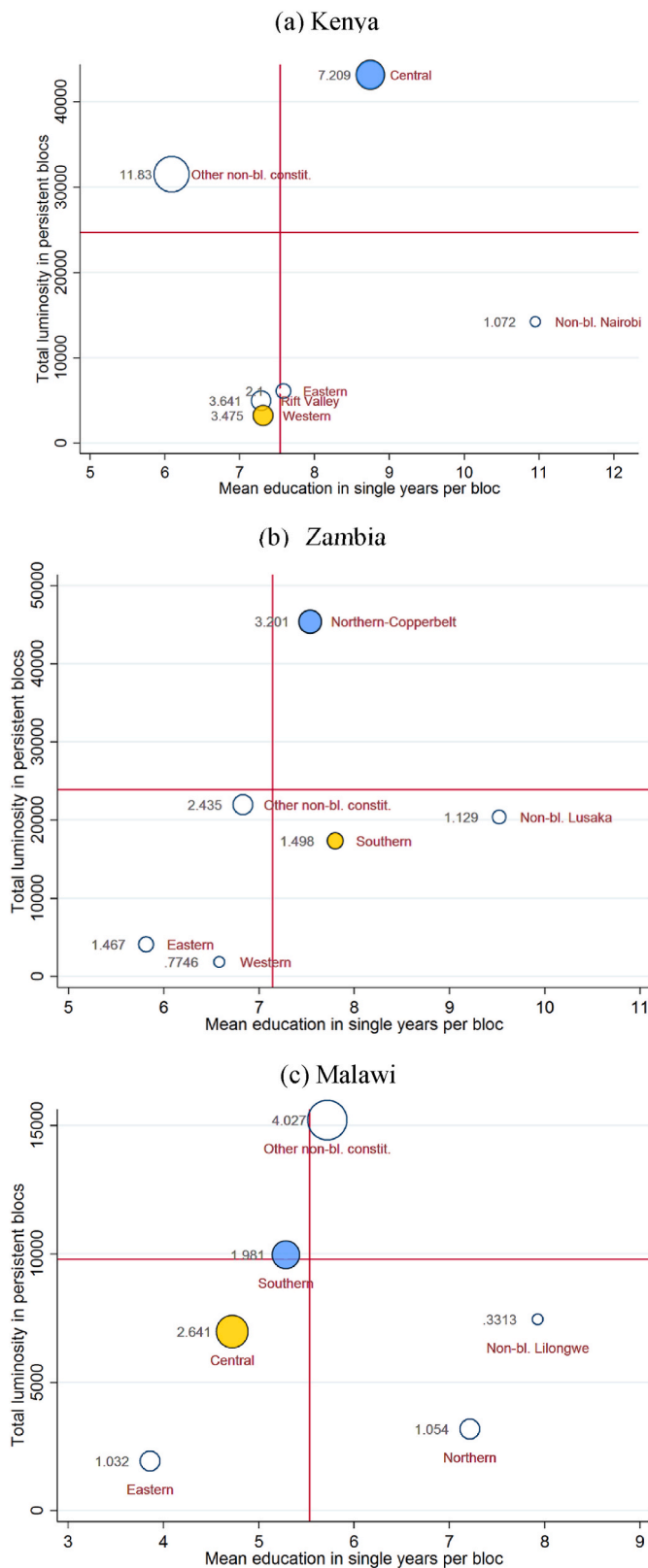


**Fig. 7.** a–c: Luminosity, Education, and Population across Persistent Blocs
*Notes*: Luminosity is the sum of luminosity per bloc. Mean education is the average years of education an individual of 15–49 years of age received (DHS). The circles indicate the total population of each bloc; numbers next to them are bloc population in millions. The horizontal line indicates the mean luminosity of all blocs. The vertical line indicates the average years education of all adult respondents in the DHS data.

coffee, tea, pyrethrum – was the economic base of most households in the Central district and many in Embu, and Meru from the 1950s to the 2000s. This created a broad base of prosperity that boosted living standards and education levels relative to the rest of Kenya (Fig. 7a and Appendix Table A7).

The Central bloc is also the politically-dominant bloc. It led the nationalist struggle (both the radical and moderate wings). It was the electoral stronghold of the country's founding president, who ruled for almost two decades, and has been the electoral base of the country's multiethnic "Mt. Kenya" ruling clique for 40 of the 60 years since independence. The Central electoral bloc is the sending-region of Kenya's internal diaspora of "black colonists" who are often resented in less advantaged regions (Oucho, 2002).

Fig. 4a casts the other persistent electoral blocs' disadvantages in stark relief. The Western electoral bloc, [46] a politically distinctive electoral bloc since the 1950s, is a labor-sending region. Household livelihoods have been reliant on subsistence agriculture, wage labor, and labor out-migration since the 1940s. As Appendix Table A7 reports, the Western bloc's disadvantage vis-à-vis Central bloc is reflected in DHS asset scores (which are 25% lower), and household access to electricity (9.4% vs. Central's 32.2%). Of the 20 poorest electoral constituencies in Kenya in 2008, 14 are in the provinces corresponding to the Western persistent bloc.[47]

The axis of policy competition dividing these two is redistribution, consonant with a type of territorial cleavage that is visible in other countries exhibiting strong core-periphery tensions (Hechter, 2017 [1975]; Beramendi, 2012). The stereotype in Kenyan political discourse of the Kikuyu of Central Province as pro-growth and "capitalist," and of the Luo of Western Kenya as pro-redistribution and "socialist" (or pro-worker), captures the popular understanding of economic opposition (Lonsdale, 2012). Each persistent electoral bloc extends beyond a singular ethnic stronghold to include adjacent non-coethnic constituencies with similar sectoral production and inequality profiles.

A secondary axis of territorial opposition divides the Central persistent electoral bloc from the Rift Valley bloc, whose constituencies represent Kenya's largest concentrations of small- and medium- scale commercial food-crop producers (maize producers). The differences in sectoral profiles run along a rich-region, poorer-region cleavage (Fig. 7a and Appendix Table A7). This regional opposition is also structured around distributive politics, but in this case, what is at stake is policies and politics governing distribution of access to state land. Rift constituencies resent the central-government sponsored in-migration of land-seeking settlers from Central province and have rallied behind this cause since the 1950s. Collective consciousness of regional disadvantage crystallized in the 1950s around "Kalenjin" as a confederal ethno-political identity (Bates, 1989; Lynch, 2011).

With the Eastern persistent electoral bloc as a swing bloc, Kenya's geopolitical space is indeed complexly structured. Since 2000, the Central persistent bloc has allied with non-bloc constituencies to form winning majorities at the national level. Some of these dynamics are consistent with descriptions of Kenya's party politics as volatile, but an alternative interpretation that both captures and theorizes the observed structuration is that of a classic core-periphery competition between "an advanced area and poorer peripheries." It is animated by ethnic politics and reproduced in part ethnic voting at the micro-level, but ethnicity itself does not account for persistent bloc cohesion, cleavage, or polarization.

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[46] Nyanza and Western Provinces, under Kenya's pre-2010 territorial divisions.

[47] That is, 10 in the then Nyanza Province and 4 in Western Province. Elischer (2013, 231).

*5.2. Zambia: "Center versus area of growth in the provinces."*

Zambia's economic geography is defined by the line-of-rail connecting the Copperbelt, Lusaka, and Southern. This has formed the spinal column of the national economy since the 1920s. The two producer poles are Copperbelt-Northern (mining) and Southern (commercial agriculture, especially maize production). The persistent electoral blocs and the pattern of polarization they exhibit map onto this underlying economic structure. Fig. 7b refers to this relationship by highlighting these two polarized blocs – Copperbelt-Northern and Southern – in blue and yellow, respectively.

The driver of the national economy is the Copperbelt mining industry. It accounted for 64% of exports in 2015 and 80% in 2018. Its advantages in terms of level of economic development are captured in Fig. 7b.[48] Northern Province is a labor-sending region that has been linked symbiotically to the Copperbelt, a labor-absorbing region, since the 1920s. In 1957, 70% of all taxable males in Kasama District of Northern Province were in wage labor, mostly on the Copperbelt (Bratton, 1980, 42). This pattern has persisted over time. Remittances of Copperbelt wages have long sustained households in the overwhelmingly rural, poor, and subsistence-crop producing Northern Province. Circular migration promoted the spread of the Bemba language and indeed the spread of Bemba identity across Zambia's north and northeast region (Sishuwa, 2016, 30; Bates, 2018).

The Copperbelt-Northern electoral bloc led the nationalist struggle for independence in the 1950s, and the Copperbelt and most of Northern Province have voted together since then. The statist modernization project of the ruling party, UNIP, in the 1970s and 1980s came at the expense of *both* the Copperbelt (Bratton, 1980, pp. 193-5, 198; Bates, 2018, pp. 96–101) and the commercial farmers of Southern. To bring about the return to multipartism in 1991, these two producer regions allied together to overthrow UNIP. Since then, Copperbelt + Northern bloc has remained the predominant regional player in national politics. National power has resided in the coalition that can command both the Copperbelt-North and the capital city of Lusaka, which together comprise 40% of the national vote. Five out of six elections since 1992 have featured this alliance.

The Southern persistent electoral bloc is anchored in Zambia's leading agricultural region and its richest predominantly-rural province. This is clear in the descriptive statistics presented in Fig. 7b and Appendix Table A7. Luminosity per capita is quadruple that of the other two predominantly rural electoral blocs. Household electrification rates and average education level are triple, as least, of what they are in the Eastern and Western persistent electoral blocs. Politically, the Southern persistent electoral bloc has been juxtaposed to the urban-industrial core of the national economy along a line of cleavage that has run through Zambian electoral politics since the 1960s. In the early days of UNIP, Southern province became the epicenter of opposition politics through the African National Congress (Bates, 2018; Macola, 2010; Momba, 1985; Sitko, 2008). Divergent preferences for more statist-populist as opposed to more pro-agriculture and pro-business generate an axis of policy cleavage around issues of taxation, redistribution to urban poor, and maize policy (taxes, subsidies, marketing arrangements, export restrictions) (Fraser, 2017; Kim, 2017; Larmer & Fraser, 2007).

Structurally, the enduring territorial opposition between Southern on the one hand, and Copperbelt-Northern and Lusaka on the other hand, is evocative of what Lipset & Rokkan (1967, 41) defined as a classic tension dividing the economic core of the national economy (Lusaka plus Copperbelt) from a growth area in the provinces (Southern). This resonates with the urban-rural, or industry-agriculture, tension evoked in some scholarly literature on Zambia (Bates, 1976; Resnick, 2014), but most earlier interpretations gain their analytic power by emphasizing the weight of *urban interests*. Our analysis

highlights the economic geography and electoral geography correlates of the other side – the predominantly rural side – of this dyad. Ethnic politics as theorized by Horowitz (1985), even when ethnicity's "variable geometry" across units and scales in Zambia's institutional grid is factored in (Posner, 2005), does not predict or provide a theory of such a pattern of political-electoral cleavage and polarization.[49] Lipset & Rokkan's theorization of a particular type of core-periphery tension that puts a secondary or minor producer region on the defensive does so.

Zambia's Eastern and Western persistent blocs are strongly disadvantaged regions, as captured in Fig. 7b. They do not figure into national economic geography as leading producer regions with distinctive sectoral profiles. Since 2000, Eastern has been sporadically incorporated as a secondary partner in coalitions formed along the Copperbelt-Northern to Lusaka axis (Bates, 2018). As Posner (2004b, 541) suggested, membership in the same administrative province (being part of "a common entity"), rather than ethnic affinity, appears to be the salient factor in accounting for the political cohesiveness of this electoral bloc. Political cohesiveness of the Western persistent bloc seems attributable to the memory of historical statehood anchored in an ethnic-political identity, and by its on-going quest to recover some political autonomy (Sishuwa, 2016). It has aligned with the oppositional Southern bloc since the 2000s.

*5.3. Malawi: "Competition between rival political centers."*

Malawi's persistent electoral blocs map onto an economic landscape polarized around two administrative regions, Central and Southern, both centered on urban agglomerations, comprising export-oriented agricultural sectors, and of roughly similar population size and territorial extent relative to the other blocs. These are depicted in yellow and blue, respectively, in Fig. 7c (see also Appendix Table A7). Malawi's territorial cleavages evoke what Lipset & Rokkan (1967, 41) described as "competition between potential centers of political control." The two regions are very different in terms in of levels of urbanization, sectoral composition, agrarian structure, and demands for state support for the agrarian sector. These differences fuel rivalry over the control of state power and its uses.

The Southern electoral bloc is anchored in Shire Highlands districts that contain Malawi's colonial commercial and administrative capital cities, Blantyre and Zomba, much of private business, and a peasant-worker stratum linked to small plots of land and engaging in wage and tenant labor on large-scale corporate- and expatriate-owned tea plantations. Its origins, in terms of economic geography and sectoral make-up, lie in the colonial era. So does the region's on-going history of rural radicalism around demands for higher pay and land access, and its ethnically-composite character, with the strong presence of in-migrants from elsewhere in southern African and ethnically-mixed cities, towns, and tenant villages on estate land (Chinigò, 2016).

The Central electoral bloc, by contrast, is anchored in a regional political economy built mostly after independence, erected as a power base to rival Southern by Kamuzu Banda and his MCP ruling party. Banda-era growth strategy concentrated on developing a tobacco estate sector of large and medium-scale holdings in the Central region, along with an infrastructure of tobacco marketing and producer organizations that grounded the ruling party. He promoted "Chewa" ethnic identity as a regional identity and as the essence of Malawian-ness. Under Banda the tobacco sector became the source of Malawi's wealth, producing 60% of exports and 70% of foreign exchange in 1990.

Malawi's 1994 election ended Banda's 30-year rule and brought to power a coalition based in the Southern bloc, which ruled Malawi from 1994 to 2020. Its economic interests as a region diverged from those of the *ancien régime*. The new government systematically dismantled the

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[48] See note 28.

[49] While some scholars stress ethnic logics in Zambian elections (Posner, 2005), others see ethnicity as almost taboo (Fraser, 2017).

tobacco-estate based political and economic hegemony of Central Region by liberalizing tobacco production and marketing, starting in 1994. Liberalization also eroded the parastatal sector that had been economic base of the Banda-aligned elite.

Regional, sectoral, and partisan cleavages aligned along the Central-Southern cleavage from the early 1990s to 2020, tracing division between the economic and political heartland of the Banda regime and the sectorally-distinct, more economically and socially diverse, class-conscious, and anti-MCP South. Kaspin (1995) and Kalipeni (1997) have seen ethnicity in Malawi as a proxy for regionalism, and Ferree and Horowitz (2010) described regionalism is a distinct force in Malawian politics. This resonates with the argument we are developing here. Leveraging Lipset & Rokkan, we suggest that what is observed in Malawi is not *sui generis* – it is one of a few canonical types of territorial opposition that may arise in the course of national political and economic integration.

Malawi's two other persistent electoral blocs are both smaller, poorer, and less urban. (See Fig. 7c and Appendix Table A7.) They play the role of swing regions. Much of the Northern bloc is coterminous with a traditionally economically-marginal, labor-exporting, low-population-density, and subsistence-agriculture based region.[50] Kaspin (1995, 618) identified the source of the Northern region's political unity as "30 years of marginalization under Banda's rule," a fact owing as much to the region's historic profile as a labor-exporting region as its ethnic-outside profile. The Eastern electoral bloc split from Southern in 2005, and in 2014 fielded its own presidential candidate. (In 2020, however, the Eastern bloc aligned again with Southern, accentuating the tripolar structure of Malawian politics.)

## 6. Conclusion

We interpret the persistent electoral blocs we have identified using electoral geography methods as evidence of *regional* cleavage patterns in national electoral politics. Persistent electoral blocs map onto the uneven geography of regions, and onto the hierarchical positioning of these regions in terms of wealth, distribution of productive assets, productive capacity, and sectoral divisions of labor within national economies. Territorial politics and regional tensions may and do co-exist with micro-level ethnic clientelism and meso-level patronage politics to build electoral coalitions. In this sense, our analysis encompasses much of what is emphasized in earlier work. Yet our analysis offers an alternative theorization of structure in national voting patterns that is more consistent with the spatial clustering patterns observed in our constituency-level data than a great deal of existing theory, which identifies culturo-ethnic identity and non-economic issues as the basic sources of cleavage in national politics.

Observed patterns of bloc persistence and coalescing in presidential elections in Kenya, Zambia, and Malawi suggest that sectional economic interests and regional competition may be more politically-salient in these countries than much existing work has implied. Looking beyond the three countries featured here, the generally high levels of spatial inequality and strong patterns of regional economic differentiation characteristic of most African countries should lead us to expect that regional cleavages will be politically salient in most of them, even if the salience of regional cleavages varies cross-nationally.

Our research suggests that robust theories of cohesive political action in African countries may require analysis of the geographic *overlapping* of regional socio-economic differentiation, collective identities, and political organization. Politically-salient ethnic identities in Kenya, Zambia, and Malawi often coincide with, and indeed may themselves coalesce around, cleavages rooted in economic geography and regional interests. This seems clearest for "composite" ethnic identities that have coalesced in the course of competition against other regional groups in the national political arena, such as Kalenjin, Luyha, Bemba, and Chewa. This logic would lead us to expect that such ethnic identities are themselves a result of strategic coalition-building across groups with shared, regionally-defined political projects and interests.[51] If correct, we would expect to see in most African countries the kind of persistent, regional, multi-ethnic electoral blocs that our analysis has identified.

## Declaration of competing interest

## Acknowledgements

## Appendix

### 1. Electoral Data

Electoral data are collected from the electoral commissions of the three countries. Election results for 14 out of the 16 elections are presidential results. Presidential election data are especially beneficial compared to parliamentary data when numerous candidates contest elections as independents or on "briefcase party" tickets (very small parties with minimal national appeal). In such cases it is hard to make inferences about the way in which individual constituencies line up within national political coalitions. Although it would be preferable to use presidential results for all elections, the Malawi Electoral Commission (MEC) did not release constituency-level presidential results until 2009. We therefore use parliamentary results in the earlier (1999 and 2004) elections. We believe that these are a reasonable approximation of presidential election results because they took place before independent candidates started to become a prominent factor in parliamentary competition. Correlating the parliamentary and presidential election results at the district-level, the average correlation for larger presidential parties (receiving more than 10% of the national vote) is 0.99

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[50] The North is a long-time "exporter" of skilled labor to the rest of Malawi (exemplified by teachers and civil servants), stereotyped as Northern intellectuals. This registers in the DHS data in Fig. 4c. See Posner (2004b, 536).
[51] See Posner (2017) on "new" ethnic identities.

in 1994, 0.99 in 1999, and 0.87 in 2004. To build the blocs, we added the MCP and AFORD vote shares in 1999 as these were in a presidential coalition. Similarly we added up the votes for the Malawi Democratic Party, Malawi Forum for Unity and Development, Movement for Genuine Democratic Change, National Unity Party, People's Progressive Movement, People's Transformation Party, and Republican Party in the 2004 election as they were all part of the Mgwirizano presidential coalition. We excluded the 1994 Malawi election as we were unable to find a high-resolution constituency map of the constituency boundaries used in the founding election for Malawi (the boundaries were changed before the 1999 election).

### 1.1 Georeferencing election data

The electoral data was georeferenced using constituency shapefiles. Persistent blocs depicted in Fig. 1 are based in the Kenya 1997–2007 constituency shapefile, the Zambia 1991–2011 shapefile, and the Malawi 1999–2014 shapefile. When identifying the blocs, it is necessary to account for changes in constituency delineation between 1992 and 2007 in Kenya, between 2007 and 2013 in Kenya, and between 2011 and 2016 in Zambia. There is no change in constituency boundaries in Malawi after 1999 until 2014. Since we count the number of times (elections) a constituency was part of an electoral bloc (i.e., was part of one of the clusters the Local Moran's I identified as such across several elections), we have to track the constituencies over time.

To do so, we use the following protocol, analyzing the evolution of clusters over time. First, if a constituency keeps the same name from one election to the next, we treat it as the same constituency. Second, we track the constituencies that split into 2 (or more) constituencies. Since we keep the constituency shapefile we are using to depict persistent electoral blocs constant (the main constituency shapefile as indicated above), we have to decide whether the split-up constituencies should be included or excluded in the calculation of persistent bloc membership. A split constituency is included if both of the new units cross the relevant thresholds of the local Moran's I and the plurality, and are thus both part of the electoral bloc. If a constituency splits in two, and one new unit crosses both thresholds while the other does not, we include the original constituency in the bloc if the larger of the new units (in terms of voters) voted along with the electoral bloc. If not, we do not include either of the new units in the persistent bloc count. (An alternative would be to count the original constituency as in or out of the bloc based on local Moran's I and the plurality vote of all voters in the combined new units – ie., ignore the split and average across the two new units.)

Third, we use a geographic approximation method for constituencies that change boundaries in other ways. For Kenya boundary changes between 2007 and 2013, we use the Kenya 2013 shapefile to actually observe boundary changes that are different from the type described above. We calculate the share of each new constituency's area that lies within the bloc's boundaries, and count those constituencies as members of the bloc when more than half of their territory falls within the bloc. This allows us to incorporate electoral results from Kenya (2013) and the Zambia 2016 into our panel data.

For Kenya, the number of 2013 constituencies added to the electoral blocs by geographic approximation – that is, laying the electoral bloc shapefiles based on the 1997–2007 constituencies over the 2013 constituencies – is as follows (the number of constituencies in the blocs that matched on the basis of the constituency names is in parentheses): Central: 14 (+40) = 54 total in 2013; Rift Valley: 18 (+20) = 38 in 2013; Eastern: 8 (+11) = 19 in 2013; Western: 12 (+22) = 34 in 2014.

### 2. Calculating Spatial Clusters

To identify electoral blocs, we used the local Moran's I to identify specific geographic areas of spatial autocorrelation in constituency results. Spatial autocorrelation is an exploratory tool. The results need to be interpreted in combination with substantive knowledge (See below, section 2.4, on LISA scores.). We began by calculating vote shares per constituency in each presidential election in Kenya, Malawi, and Zambia since 1990. We calculated a local Moran's I statistic for each party's vote share in every constituency. For constituency $i$ it is calculated as follows, where the values $z_i$ and $z_j$ are deviations from the mean vote share across all constituencies.

$$I_i = z_i \sum_j w_{ij} z_j \tag{1}$$

We employ a simple contiguity spatial weighting matrix $W$, or "Queen" matrix, with elements $w_{ij}$ indicating first-order contiguity between constituency $i$ and constituency $j$. The *Queen* spatial weighting matrix is one for pairs of contiguous constituencies (common edge or common vertex) and zero for all other constituencies. In the equation above, the summation over j is thus such that only neighboring values of $j \in J_i$ are included. The *Queen* matrix is a simple spatial weighting matrix that makes no demanding assumptions on the spatial relationship between constituencies beyond contiguity. Note that $w_{ii} = 0$. We run 999 permutations to calculate the local Moran's I test statistics.

Our data provide a robust basis for this. The number of units is ranges from 150 to 290 (constituencies) per country, with an estimated 5–6 neighbors per unit on average. The local Moran's I statistic is then standardized to z-scores, which we use to detect statistically-significant clustering (using 5% significance level as a cut off) across constituencies. We run 9999 permutations to calculate the local Moran's I test statistics. The z-scores follow a normal distribution and are computed by subtracting the mean of I and dividing the remainder by the standard deviation. We thus focused on clusters of similar, high vote shares, i.e. positive spatial autocorrelation.

We focused on clusters of similar, high vote shares (winning by a plurality) for the same winning party (i.e. positive spatial autocorrelation). At least three contiguous constituencies with statistically-significant spatial clustering in their vote shares for the same winning party were considered to comprise an electoral bloc.

We used a plurality of the vote as a cut-off. See Appendix 2.2. The blocs include neighbors. See Appendix 2.1.

### 2.1 Including "neighbors" in persistent electoral blocs

Border constituencies' adjacency to units with strongly dissimilar values pulls down the statistical significance of the local Moran's I. Therefore, following Harbers and Ingram (2019a, 2019b) and others, we defined constituencies that are adjacent to a persistent electoral bloc ("neighbors") and that vote persistently (in least 66% of elections, by a plurality share) with that bloc as *persistent electoral bloc neighbors*, and added them to the persistent blocs. This step increased the size of the persistent blocs by 34 constituencies in Kenya, 32 in Malawi, and 44 in Zambia. See Figure A1. When we refer to "persistent electoral blocs," we will include the neighbors. We do not use the term "first spatial lag" to describe the neighbors, since this would imply that we are picking up *all* adjacent constituencies of each individual constituency. The term neighbours in this paper refers to the adjacent constituencies of the persistent electoral blocs that fulfil the threshold criteria.

*2.2 Majority vs. plurality rule*

We use a plurality rule, rather than a majority rule, to determine which constituencies vote "for" particular presidential candidates. The difference between a majority and a plurality cut-off is small, due to generally very high vote margins in the blocs. Using the plurality rule adds 2 constituencies to any of the persistent electoral blocs in Kenya (compared to a majority rule), 1 in Central and 1 in Eastern (out of a total of 78–80 bloc members, out of a total of 290 (2013) constituencies nation-wide). In Zambia, using the plurality rule adds 20 constituencies. The number of constituencies in the Eastern bloc goes from 2 to 13, in the Western bloc it goes from 2 to 6, in Copperbelt-Northern it goes from 20 to 25. The total number of constituencies in persistent blocs in Zambia increases from 40 to 60 (out of a total of 150). In Malawi, going from the majority to the plurality rule adds 9 constituencies to the blocs; the total number of constituencies in electoral blocs from 71 to 80 (out of 193). That is: 4 in Central, 23 in Northern, 1 in Southern, and 1 in Eastern.

*2.3 Missing data*

One obstacle encountered when calculating the Moran's I is that many of the elections featured missing election data for a limited number of constituencies. The percentage of constituencies for which we are missing data ranges from 0 (Zambia 1996; for example) to 15.7% (Kenya 1992). The average percentage of missing constituencies across all elections by country is approximately 7% for Kenya; 2% for Zambia; and 3.5% for Malawi. For constituencies with missing vote count, we are not able to calculate vote shares and or determine the winning party. To calculate the local Moran's I, we construct a specific spatial weighting matrix for each party in every election based on contiguity that excludes constituencies with missing values. The spatial weighting matrix is based on an idiosyncratic shapefile that we build based on the constituencies with non-missing vote count. The spatial weighting matrix thus treats missing constituencies as if they were not part of the constituency map. A missing value hence reduces the number of adjacent constituencies in the weighting matrix but does not affect the calculation of the local Moran's I otherwise. In cases of missing values, we thus cannot determine whether a constituency is part of an electoral bloc for a specific party and election. This also affects the identification of persistent electoral blocs as we count the number of times a constituency is part of an electoral bloc. To account for this, we adjust the election count for constituencies with missing values. For instance, if a constituency has a missing value for one election, we reduce the election count by one (e.g. if a constituency was part of an electoral bloc 4 out of 6 elections, but has one missing vote count, we adjust the count to 4/5 elections). We keep the threshold for persistent electoral blocs at 66% of elections, however.

*2.4 On LISA scores and their interpretation*

LISA scores provide tools for exploratory data analysis (and sometimes hypothesis testing), and often must be interpreted in the context of substantive knowledge of the underlying relationships (See Ingram and Harbers, 2019; Anselin, 1995). Their statistical significance level may be affected by variable neighborhood structure, variation in the size and shape of the units, edge effects (e.g. location on an international border), and extreme constituency values. LISA scores for a given cluster/party are also affected by other non-contiguous (remote) clusters for that same party since the LISA score is the normalized distribution of z-scores, based on the SD from the mean.

*2.5 Bloc Persistency*

To identify persistent electoral blocs we use a 66% threshold for persistency, meaning that a constituency has to be in the block (have statistically significant z-scores for the same party as its neighbours) in at least 66% of the elections. This rule yields the rates of "sticking together" as the threshold for the inclusion in a persistent electoral bloc that at reported in Table A2.

The *de facto* threshold for Zambia is lower than for the other two countries. Increasing the persistence threshold for Zambia from 66% to 83% reduces the number of bloc constituencies (before calculating neighbors) by the following numbers: Copperbelt: 4 out of 8 remain (plus 10 neighbors); Northern: 11 of 17 remain (plus 11 neighbors); Southern: 1 of 16 remains (plus 6 neighbors); Eastern: 2 of 13 remain (plus 8 neighbors); Western: 3 of 6 remain (plus 9 neighbors). The number of "remaining constituencies" does not include an "updated/recalculated" number of neighbors. In a few instances, missing values played a role in shrinking the blocs when we raised the threshold.

The map of the Zambia persistent blocs at the 5/6 threshold is not radically different from the 4/6 maps – many bloc members under the 4/6 rule turn into "neighbors" under the 5/6 rule. We do not consider sensitivity to changing the threshold to seriously enfeeble our argument about blocs in Zambia. Our reasoning is based on knowledge of the particular character of parties and elections in Zambia over time. When increasing the persistency threshold to 5/6 elections, a constituency would have to be considered as part of a bloc in either the 1991 or 1996 election. These early elections were not competitive, with MMD winning more than 70% of the vote in both. As a result, even constituencies that voted for MMD with high vote margins often do not stand out as members of statistically significant clusters. If we use the higher threshold (75% or 3/4 elections), but exclude the two first elections, we find a 8–9% drop in the total number of bloc constituencies (from 104 to 95), while the blocs themselves remain strongly present.

*2.6 Clusters of less than three constituencies*

This method described above yields two "blocs" that only have one persistent member (Turkana Central in Kenya and Mulobezi in Western Province of Zambia). It also yields one bloc composed of two constituencies (the adjacent constituencies of Kasempa and Solwezi West in NW Zambia province). We excluded these from the analysis since they do not fit our substantive definition of bloc (three or more constituencies). However if we included "neighbors" and used the 66% rule for bloc persistence, Solwezi could grow to a large bloc of 7 constituencies. Elections in this region were very competitive, however, until the 2015 presidential by-election. Low level of party dominance distinguishes Solwezi from the persistent blocs picked up by our method. Another region that may be considered a *de facto* "persistent electoral bloc" that is not picked up as statistically significant cluster at the 5% level is the 9–13 constituencies in Kenya's former Coast Province, which have voted together in all elections since 1992. These do constitute a significant cluster at the 10% level.

*2.7 List of urban non-bloc constituencies*

The category non-bloc Nairobi includes the constituencies Dagoretti, Kamukunji, Langata, Makadara, Starehe, Westlands. Non-bloc Lilongwe includes the constituencies Lilongwe City Central, Lilongwe City South East, Lilongwe City West. Non-bloc Lusaka includes the constituencies Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero, Munali. Non-bloc constituencies of Nairobi, Lusaka, and Lilongwe comprise (averaging across the elections in the sample) 4%, 11.5%, and 2.5% of the national vote, respectively.

## 3. Use of DHS

The DHS Surveys are representative at national and regional level. Yet there is strong precedent for using DHS survey data to measure ethnic shares of spatial units at lower levels of aggregation. Beiser- McGraph, Müller-Crepon and Pengl (2021) use DHS to calculate ethnic shares at the district (Admin 2 level) across 22 countries. Friedman (2018) uses DHS data to calculate ethnic shares in Kenya at the division-level. Friesen (2019) uses DHS data to calculate ethnic shares at the constituency level in Zambia (using only one round of the DHS). Jablonski (2014) uses DHS to calculate the ethnic majority in constituencies for Kenya. Others have used the data to measure other variables at a highly disaggregated level. Harding (2015) uses DHS to calculate constituency-level wealth change in Ghana. Wilfahrt (2018) uses DHS to calculate constituency-level wealth-index for Senegal at the arrondissement-level.

To calculate constituency-level population shares of different ethnic groups, we geo-referenced all DHS clusters to the constituency level. The DHS clusters are randomly displaced by 5 km, so that individual respondents cannot be identified. (Two percent of the clusters in the rural areas can be displaced up to 10 km. The electoral blocs are very large, however, so this adjustment should not impact our results.) We use all available geo-referenced DHS rounds (Rounds IV-VII, covering the years 2003–2016). While we do not have geo-referenced data for the 1990s, we are confident that the population shares for the larger ethnic groups (where we have a larger number of respondents) in the constituencies are reasonably well represented over the entire period. The total number of individual respondents is 189,258 in Kenya, 283,049 in Malawi, and 140,046 in Zambia. The total number of clusters over all rounds is 2,364 in Kenya, 2,700 in Malawi, and 1,037 in Zambia. The average number of respondents per constituency captured in the DHS survey over all rounds is 901 in Kenya, 1467 in Malawi, and 934 in Zambia. We apply the DHS population weights.

Although there is variation in the pooled sample sizes, the average number of respondants per constituency is comparable and sufficiently high across the three countries. The countries for which we have the lower average number of responents per constituency (Kenya, Zambia) are those for which we have precedents in the literature for using the data in this way (Friesen, 2019; Jablonski, 2014).

We merge individuals of ages 15–49 of all rounds and retrieve their self-reported ethnic affiliation from the data to calculate the population shares of each ethnic group per constituency.

To probe the robustness of the DHS data for calculating ethnic population shares across the persistent blocs, we compare the data to the census data for Malawi, the only country for which we have census data in Table A3, which compares ethnic population shares across persistent electoral blocs using the DHS data and the 2008 Malawi Population and Housing Census. The two sources use the same ethnic classification scheme for the main population groups. Ethnicity population shares, based on the two independent sources, reveal quite similar results. This lends credibility to the DHS ethnicity data.

## 4. Use of Luminosity Data

Henderson et al., (2012), Chen & Nordhaus, (2011), Michalopoulos and Elias (2013), Michalopoulos and Elias (2014), Hodler and Raschky (2014) and many others have used nighttime light emissions as a proxy measure for economic activity at subnational levels where systematic data from more accurate sources is missing. The light data used here is provided by the Earth Observation Group (Earth Observation Group, 2013) and originates from the Defense Meteorological Satellite Program (DMSP) Operational Linescan System (OLS). Using the DMSP-OLS nighttime light data, we calculate the sum of luminosity emitted in the respective years for each constituency and persistent electoral bloc. These are large areal units; we avoid the faulty inferences that may be generated when luminosity data is used at more granular scales.

## 5. Comparison of Presumed Ethnic Homelands and Electoral Blocs

We constructed the "ethnic blocs" based upon spatial clusters of constituencies with the same predominant ethnic group, and compared these to the electoral blocs. Ethnic blocs are identified using the method employed for the electoral blocs: rather than using the vote share of a party as the underlying statistic on which the Moran's I statistic is based, we use the population share of an ethnic group. Constituencies that are part of an ethnic bloc fulfil two conditions: the ethnic group's population share has a local Moran's I z-score significant at the 5% level and the ethnic group is the constituency's largest (like the plurality threshold for the vote share). Following the method employed in identifying electoral blocs (see Appendix 2.1), we add neighbor (adjacent) constituencies where the ethnic group has the largest population share. Adding neighbors to ethnic blocs increased bloc size as follows: In Kenya, the Kalenjin bloc increases from 23 constituencies to 26, the Kamba bloc from 15 to 16, the Kikuyu bloc from 36 to 43, and the Luo bloc from 19 to 20. In Zambia, the Bemba bloc increases from 29 constituencies to 39, the Chewa bloc remains at 6, the Lozi bloc remains at 12, and the Tonga increases from 20 to 23 constituencies. In Malawi, the Chewa bloc increases from 55 to 61 constituencies, the Lomwe bloc, from 31 to 36, the Tumbuka bloc remains at 22, and the Yao bloc increases from 24 to 25 constituencies.

We asked whether these "ethnic blocs" more politically cohesive than the persistent voting blocs. We found that the average spatial clustering of constituencies by winner's vote share (measured by local Moran's I) for the persistent electoral blocs *is the same or higher* than it is for the "ethnic blocs" in 8/12 cases (ie., two-thirds of the blocs).

Some "ethnic constituencies" that lie outside their presumptive ethnic bloc are Maragwa (Central Kenya, 95% Kikuyu), Ol Joruk (Central Kenya, 95% Kikuyu), Phalombe East (South Malawi 90% Lomwe), Mulanje North (South Malawi 90% Lomwe), and Kaputa (Northern Zambia, 47% Bemba) lie outside the persistent electoral blocs.

The maps presented in the text display an overlay of persistent electoral blocs and ethnic blocs. The persistent electoral blocs (incl. neighbors) are composed of constituencies that constitute statistically significant (at 5% level) clusters of winning vote shares for parties in presidential elections in at least 66% of the elections in our dataset, as defined above. The ethnic blocs are composed of constituencies that constitute statistically significant (at 5% level) clusters of an ethnic group (by population share) and the ethnic group being the largest group in that constituency. We use the following constituency boundaries (shapefiles): Kenya 1997–2007. Zambia 1991–2011, Malawi 1999–2014.

## 6. Appendix Tables and Figures, with discussion

Table A1. Table A1 reports Global Moran's I values for the leading four parties in each election. The values are high, positive, and statistically-significant, indicating high levels of spatial clustering in constituency-level results across elections in all three countries (Shin & Agnew, 2007; Tapiador & Mezo, 2009; O'Loughlin, 1993).

**Table A1**
Global Moran's I of 4 largest Parties.

| Year of Election | | | | | |
| --- | --- | --- | --- | --- | --- |
| Kenya | 1992 | 1997 | 2002 | 2007 | 2013 |
| DP | 0.74 | 0.80 | | | |
| FORD | 0.63 | 0.69 | | | |
| FORD-A | 0.73 | | | | |
| KANU | 0.68 | 0.64 | 0.60 | | |
| NDPK | | 0.65 | | | |
| FORD-P | | | 0.64 | | |
| NARC | | | 0.61 | | |
| SDP | | | 0.12 | | |
| KPTP | | | | 0.41 | |
| ODM | | | | 0.70 | |
| ODM-K | | | | 0.72 | |
| PNU | | | | 0.69 | |
| Kenneth | | | | | 0.20 |
| Kenyatta | | | | | 0.81 |
| Mudavedi | | | | | 0.76 |
| Odinga | | | | | 0.79 |
| 3 Leading Parties' Mean | 0.68 | 0.70 | 0.62 | 0.70 | 0.79 |

| Year of Election | | | | |
| --- | --- | --- | --- | --- |
| Malawi | 1999 | 2004 | 2009 | 2014 |
| CONU | 0.03 | | | |
| MCP-AFORD | 0.90 | | | |
| MDP | −0.05 | | | |
| UDF | 0.80 | 0.54 | | 0.91 |
| MCP | | 0.87 | 0.90 | 0.94 |
| MGWIRIZANO | | 0.66 | | |
| NDA | | 0.56 | | |
| DPP | | | 0.89 | 0.91 |
| PETRA | | | 0.48 | |
| PR | | | 0.13 | |
| PP | | | | 0.85 |
| 3 Leading Parties' Mean | 0.55 | 0.69 | 0.76 | 0.90 |

| Year of Election | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Zambia | 1991 | 1996 | 2001 | 2006 | 2011 | 2016 |
| MMD | 0.79 | 0.47 | 0.70 | 0.71 | 0.72 | |
| UNIP | 0.79 | 0.17 | 0.74 | | | |
| ZDC | | 0.38 | | | | |
| NP | | 0.69 | | | | |
| FDD | | | 0.64 | | | |
| UPND | | | 0.86 | | 0.91 | 0.93 |
| HP | | | | 0.31 | | |
| PF | | | | 0.78 | 0.81 | 0.93 |
| UDA | | | | 0.85 | | |
| 3 Leading Parties' Mean | 0.79 | 0.51 | 0.73 | 0.78 | 0.81 | 0.93 |

*Notes:* Each election includes the four largest parties in terms of national vote share, sorted by year and alphabetically. All global Moran's I statistics are significant at the 1% level (based on 9999 randomisation permutations). The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method. For the Malawian election 1999 and 2004 we are using parliamentary election data instead of presidential election data. For 1999 we merge the parties MCP and AFORD, because they ran together as a coalition in the presidential election. In the year 2004, we merge the parties MDP, MGD, NUP, PPM, PTP, the Republican party that ran as a coalition in the presidential election.

**Table A2**
Persistent Bloc Thresholds

| Country | Election | Threshold |
| --- | --- | --- |
| Kenya | 1992, 1997, 2002, 2007, 2013 | 4/5 or 80% of the time |
| Malawi | 1999, 2004, 2009, 2014 | 3/4 or 75% of time |
| Kenya | 1991, 1996, 2001, 2006, 2011, 2016 | 4/6 or 66% of the time |

Notes: Numbers indicate ethnic population shares in percent. Included are the four largest ethnic groups of each country. The DHS ethnicity data includes all geo-referenced DHS rounds IV to VII covering the years 2003–2016. The census ethnicity shares are weighted at constituency level by population data based on NASA's CIESIN population grid data of the year 2000.

**Table A3**

Ethnicity Population Share Comparison across Blocs, Malawi.

| | Chewa | | Lomwe | | Tumbuka | | Yao | |
|---|---|---|---|---|---|---|---|---|
| | DHS | Census | DHS | Census | DHS | Census | DHS | Census |
| **Pers. Blocs Malawi** | | | | | | | | |
| Central, Malawi | 82.6 | 83.3 | 1.3 | 1.4 | 1.3 | 1.0 | 5.1 | 5.8 |
| Northern, Malawi | 6.1 | 6.0 | 1.0 | 1.0 | 59.6 | 57.3 | 0.9 | 1.1 |
| Southern, Malawi | 7.2 | 5.3 | 53.8 | 52.9 | 1.4 | 1.3 | 6.3 | 7.4 |
| Eastern, Malawi | 7.4 | 3.7 | 12.9 | 16.7 | 0.5 | 0.6 | 70.6 | 66.2 |
| Non-bloc constituencies | 31.3 | 25.7 | 15.8 | 17.1 | 6.5 | 5.7 | 10.6 | 11.3 |

*Notes:* Numbers indicate ethnic population shares in percent. The DHS ethnicity data includes all geo-referenced DHS rounds IV to VII covering the years 2003–2016. Michael Wahmann provided the ethnicity shares at constituency level based on census data. The census ethnicity shares are weighted at constituency level by population data based on NASA's CIESIN population grid data of the year 2000. The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method.

**Table A4**

Presidential Winner Vote Share by Bloc & Winner's Vote Margins

| | 1992 | | 1997 | | 2002 | | 2007 | | 2013 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | VS | VM | VS | VM | VS | VM | VS | VM | VS | VM |
| **Bloc name** | | | | | | | | | | |
| Central | 6.2 | −71.8 | 14.3 | −63.2 | 71.6 | 53.3 | 89.2 | 81.7 | 90.9 | 83.7 |
| Rift Valley | 84.0 | 73.1 | 86.8 | 77.9 | 32.7 | −28.1 | 17.6 | −61.7 | 81.7 | 70.4 |
| Western | 9.5 | −76.2 | 22.0 | −48.6 | 87.7 | 79.3 | 5.3 | −89.0 | 1.5 | −91.5 |
| Eastern | 47.6 | 26.7 | 29.3 | −38.8 | 80.0 | 61.2 | 9.8 | −77.8 | 10.1 | −76.1 |
| Non-bl. Nairobi | 19.5 | −28.3 | 24.8 | −19.7 | 77.4 | 57.5 | 44.4 | 16.6 | 45.7 | 13.1 |
| Other non-bl. constit | 51.8 | 28.1 | 55.1 | 30.8 | 52.9 | 23.3 | 44.6 | 6.2 | 37.4 | −9.0 |

| | 1999 | | 2004 | | 2009 | | 2014 | |
|---|---|---|---|---|---|---|---|---|
| | VS | VM | VS | VM | VS | VM | VS | VM |
| **Bloc name** | | | | | | | | |
| Central | 27.8 | −40.9 | 17.7 | −45.2 | 40.7 | −2.4 | 9.6 | −64.3 |
| Northern | 11.4 | −73.7 | 6.4 | −42.2 | 94.4 | 90.8 | 20.1 | −43.5 |
| Southern | 65.0 | 45.3 | 36.1 | 14.5 | 84.8 | 72.7 | 78.6 | 67.0 |
| Eastern | 81.6 | 69.0 | 39.6 | 17.2 | 27.7 | −39.3 | 15.4 | −48.1 |
| Non-bl. Lilongwe | 45.6 | −7.4 | 15.6 | −24.2 | 60.6 | 22.6 | 38.8 | 15.4 |
| Other non-bl. constit. | 50.8 | 24.4 | 29.1 | −5.9 | 73.2 | 52.0 | 44.5 | 23.2 |

| | 1991 | | 1996 | | 2001 | | 2006 | | 2011 | | 2016 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VS | VM | VS | VM | VS | VM | VS | VM | VS | VM | VS | VM |
| **Bloc name** | | | | | | | | | | | | |
| Copperbelt | 91.2 | 82.4 | 78.8 | 67.0 | 37.5 | 19.8 | 31.5 | −27.9 | 74.5 | 52.3 | 67.3 | 34.7 |
| Northern | 89.4 | 78.9 | 64.8 | 50.6 | 47.8 | 29.1 | 41.7 | −4.7 | 73.3 | 52.8 | 83.0 | 65.9 |
| Southern | 84.2 | 68.3 | 57.8 | 37.7 | 15.0 | −55.7 | 21.1 | −51.2 | 8.3 | −62.4 | 9.1 | −81.8 |
| Eastern | 27.8 | −44.2 | 51.1 | 34.6 | 17.1 | −19.3 | 45.0 | 24.0 | 20.4 | −54.8 | 81.9 | 63.8 |
| Western | 73.4 | 53.4 | 38.3 | 14.2 | 30.2 | −10.9 | 75.8 | 59.2 | 22.0 | −21.3 | 15.3 | −69.3 |
| Non-bl. Lusaka | 78.7 | 57.5 | 70.0 | 50.9 | 15.9 | −17.2 | 21.5 | −36.0 | 63.9 | 37.4 | 67.7 | 35.3 |
| Other non-bl. constit. | 74.7 | 53.5 | 49.0 | 30.0 | 32.9 | 6.1 | 66.0 | 44.8 | 31.9 | −13.6 | 42.9 | −3.0 |

*Notes:* VS: vote share. VM: vote margin. The vote margins are calculated as the difference in the vote share between the presidential winner and runner-up in each constituency, aggregated to the persistent electoral bloc. vote margin of the winner vs. the runner-up in each constituency within the persistent bloc. The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method. Other non-bloc constituencies include all constituencies that are not part of a persistent electoral bloc, except the capital city constituencies that are included under Non-bloc [capital city]. The category non-bloc Nairobi includes the constituencies Dagoretti, Kamukunji, Langata, Makadara, Starehe, Westlands. Non-bloc Lilongwe includes the constituencies Lilongwe City Central, Lilongwe City South East, Lilongwe City West. Non-bloc Lusaka includes the constituencies Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero, Munali.

**Table A5**
Persistent Electoral Blocs' Share of the National Vote

| Year of Election | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | No. of const. | 1992 | 1997 | 2002 | 2007 | 2013 |
| **Order Bloc Name** | | | | | | |
| Central, Kenya | 44 | 27.8 | 25.9 | 24.2 | 29.5 | 23.0 |
| Rift Valley, Kenya | 27 | 13.1 | 15.1 | 15.1 | 13.6 | 11.6 |
| Western, Kenya | 28 | 13.0 | 13.1 | 13.1 | 13.4 | 11.1 |
| Eastern, Kenya | 14 | 6.2 | 7.6 | 7.2 | 7.3 | 5.8 |
| Non-bloc Nairobi | 5 | 4.5 | 3.7 | 4.2 | 4.2 | 3.7 |
| Other non-bloc Constituencies | 90 | 35.4 | 34.5 | 36.1 | 32.1 | 44.8 |
| Total | 208 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

| Year of Election | | | | | |
| --- | --- | --- | --- | --- | --- |
| | No. of const. | 1999 | 2004 | 2009 | 2014 |
| **Order Bloc Name** | | | | | |
| Central, Malawi | 41 | 21.7 | 24.0 | 23.1 | 22.3 |
| Northern, Malawi | 24 | 10.7 | 11.1 | 11.5 | 13.9 |
| Southern, Malawi | 30 | 19.0 | 17.5 | 17.9 | 15.6 |
| Eastern, Malawi | 17 | 9.9 | 8.6 | 9.6 | 9.4 |
| Non-bloc Lilongwe | 3 | 2.4 | 2.3 | 3.4 | 1.7 |
| Other non-bloc Constituencies | 74 | 36.3 | 36.5 | 34.6 | 37.1 |
| Total | 189 | 100.0 | 100.0 | 100.0 | 100.0 |

| Year of Election | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | No. of const. | 1991 | 1996 | 2001 | 2006 | 2011 | 2016 |
| Order Bloc Name | | | | | | | |
| Copperbelt, Zambia | 18 | 22.2 | 18.2 | 17.2 | 14.5 | 17.4 | 13.8 |
| Northern, Zambia | 28 | 15.5 | 18.3 | 15.7 | 14.4 | 18.2 | 15.8 |
| Southern, Zambia | 22 | 13.1 | 14.0 | 15.1 | 15.4 | 15.4 | 19.1 |
| Eastern, Zambia | 21 | 13.8 | 9.3 | 13.0 | 13.1 | 12.5 | 11.5 |
| Western, Zambia | 15 | 6.9 | 8.1 | 7.4 | 7.3 | 5.1 | 5.5 |
| Non-bloc Lusaka | 7 | 10.5 | 9.2 | 11.3 | 12.5 | 12.3 | 13.4 |
| Other non-bloc Constituencies | 39 | 18.0 | 23.0 | 20.2 | 22.9 | 19.2 | 20.9 |
| Total | 150 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

*Notes:* The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method. The category non-bloc Nairobi includes the constituencies Dagoretti, Kamukunji, Langata, Makadara, Starehe, West- lands. Non-bloc Lilongwe includes the constituencies Lilongwe City Central, Lilongwe City South East, Lilongwe City West. Non-bloc Lusaka includes the constituencies Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero, Munali.

**Table A6**
Distribution of Winning National Vote by Persistent Electoral Bloc

Year of Election

| | 1992 | 1997 | 2002 | 2007 | 2013 |
|---|---|---|---|---|---|
| **Pers. Blocs Kenya** | | | | | |
| Central, Kenya | 4.8 | 8.8 | 28.0 | 56.8 | 42.2 |
| Rift Valley, Kenya | 30.4 | 31.3 | 8.0 | 5.2 | 19.2 |
| Western, Kenya | 3.4 | 6.9 | 18.6 | 1.5 | 0.3 |
| Eastern, Kenya | 8.2 | 5.3 | 9.3 | 1.5 | 1.2 |
| Non-bloc Nairobi | 2.4 | 2.2 | 5.2 | 4.0 | 3.4 |
| Other non-bloc constit. | 50.8 | 45.4 | 30.9 | 31.0 | 33.8 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Year of Election

| | 1999 | 2004 | 2009 | 2014 |
|---|---|---|---|---|
| **Pers. Blocs Malawi** | | | | |
| Central, Malawi | 12.8 | 16.5 | 14.4 | 6.0 |
| Northern, Malawi | 2.6 | 2.8 | 16.6 | 7.8 |
| Southern, Malawi | 26.2 | 24.6 | 23.2 | 34.1 |
| Eastern, Malawi | 17.1 | 13.2 | 4.1 | 4.1 |
| Non-bloc Lilongwe | 2.3 | 1.4 | 3.1 | 1.8 |
| Other non-bloc constit. | 39.0 | 41.4 | 38.7 | 46.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |

Year of Election

| | 1991 | 1996 | 2001 | 2006 | 2011 | 2016 |
|---|---|---|---|---|---|---|
| **Pers. Blocs Zambia** | | | | | | |
| Copperbelt, Zambia | 26.7 | 23.9 | 22.1 | 10.6 | 28.7 | 17.7 |
| Northern, Zambia | 18.3 | 19.8 | 25.8 | 14.0 | 29.4 | 25.1 |
| Southern, Zambia | 14.6 | 13.5 | 7.8 | 7.5 | 2.8 | 3.3 |
| Eastern, Zambia | 5.1 | 8.0 | 7.6 | 13.7 | 5.6 | 17.9 |
| Western, Zambia | 6.7 | 5.2 | 7.6 | 12.8 | 2.5 | 1.6 |
| Non-bloc Lusaka | 10.9 | 10.7 | 6.2 | 6.2 | 17.4 | 17.3 |
| Other non-bloc constit. | 17.8 | 18.8 | 22.9 | 35.2 | 13.6 | 17.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

*Notes:* The winner's vote allocation is calculated as the share of votes won by the presidential winner in each persistent bloc. The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method. Other non-bloc constituencies include all constituencies that are not part of a persistent electoral bloc, except the capital city constituencies that are included un- der Non-bloc [capital city]. The category non-bloc Nairobi includes the constituencies Dagoretti, Kamukunji, Langata, Makadara, Starehe, Westlands. Non-bloc Lilongwe includes the constituencies Lilongwe City Central, Lilongwe City South East, Lilongwe City West. Non-bloc Lusaka includes the constituencies Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero, Munali.

Table A7 presents constituency-level measures aggregated to the bloc level. DHS survey data provides individual-level indicators for adult educational attainment, which may be taken as a register of human capital and indeed as one measure of the distribution of economic opportunity across individuals and households. The population data, calculated from NASA-CIESIN data, is a proxy for the weight of the blocs as a share of national population and a potential share of the national electorate. It also yields a population density indicator, positively correlated with both agricultural potential and output (soil and rainfall) and urbanization. The night-time luminosity data, widely-used as rough proxy for GDP at the Admin1 level, is a rough indicator of level of economic development of each bloc and its relative contribution to the national economy.

**Table A7**
Comparison of Blocs by Economic Indicators

| | No. of constit. | Pop Share | Pop. (mio) | Pop. dens. (km2) | Urban (DHS) | Largest ethnic group | Wealth (DHS) | Electr. (DHS) | Total lumin. share | Lumin. per capita | Mean Educ in single years |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Blocs Kenya** | | | | | | | | | | | |
| Central | 44 | 27.3% | 8.04 | 5.5 | 30.0% | 68.3% | 3.6 | 32.2% | 42.1% | 4.5 | 8.7 |
| Rift Valley | 27 | 11.9% | 3.50 | 3.1 | 20.9% | 77.7% | 2.6 | 14.7% | 4.4% | 1.1 | 7.3 |
| Western | 28 | 12.5% | 3.69 | 11.3 | 21.1% | 67.4% | 2.7 | 9.4% | 3.3% | 0.8 | 7.3 |
| Eastern | 14 | 7.0% | 2.08 | 4.1 | 25.4% | 95.0% | 2.9 | 11.5% | 5.9% | 2.4 | 7.6 |
| Non-bloc Nairobi | 5 | 4.3% | 1.27 | 526.0 | 100.0% | 32.5% | 4.9 | 81.3% | 14.6% | 9.9 | 11.0 |
| Other non-bloc constit. | 90 | 37.0% | 10.90 | 0.3 | 37.4% | 16.9% | 2.7 | 22.8% | 29.7% | 2.4 | 6.1 |
| National Avg/ Total | 208 | 100.0% | 29.47 | 91.7 | 35.7% | 19.7% | 3.0 | 25.4% | 100.0% | 3.5 | 7.5 |
| **Blocs Malawi** | | | | | | | | | | | |
| Central | 40 | 24.0% | 2.70 | 4.0 | 10.5% | 78.7% | 2.6 | 5.3% | 14.9% | 2.0 | 4.7 |
| Northern | 23 | 9.6% | 1.08 | 2.4 | 18.6% | 55.4% | 3.4 | 12.0% | 7.5% | 2.6 | 7.2 |
| Southern | 30 | 17.9% | 2.01 | 8.1 | 13.7% | 58.1% | 3.0 | 8.8% | 22.2% | 4.0 | 5.3 |
| Eastern | 16 | 9.7% | 1.09 | 7.5 | 6.7% | 68.6% | 2.6 | 5.1% | 3.9% | 1.3 | 3.7 |
| Non-bloc Lilongwe | 3 | 2.8% | 0.32 | 484.4 | 96.9% | 42.6% | 4.5 | 36.2% | 17.2% | 19.8 | 7.9 |
| Other non-bloc constit. | 74 | 35.9% | 4.03 | 1.7 | 15.7% | 29.2% | 3.0 | 10.4% | 34.2% | 3.1 | 5.7 |
| National Avg/ Total | 186 | 100.0% | 11.22 | 84.7 | 15.1% | 29.5% | 2.9 | 9.3% | 100.0% | 5.5 | 5.5 |
| **Blocs Zambia** | | | | | | | | | | | |
| Copperbelt | 18 | 15.9% | 1.44 | 10.0 | 81.8% | 39.8% | 4.1 | 52.6% | 36.8% | 22.3 | 8.7 |
| Northern | 28 | 20.6% | 1.87 | 0.5 | 37.6% | 64.0% | 2.6 | 12.0% | 5.4% | 2.5 | 6.7 |
| Southern | 22 | 20.1% | 1.83 | 0.9 | 47.7% | 50.3% | 3.5 | 34.2% | 22.6% | 10.8 | 7.8 |
| Eastern | 21 | 11.6% | 1.05 | 0.6 | 28.5% | 32.7% | 2.5 | 12.0% | 3.0% | 2.5 | 5.8 |
| Western | 15 | 6.2% | 0.57 | 0.3 | 34.6% | 37.2% | 2.3 | 11.4% | 1.6% | 2.5 | 6.6 |
| Non-bloc Lusaka | 7 | 4.6% | 0.41 | 151.6 | 86.9% | 23.0% | 4.6 | 77.6% | 12.1% | 25.6 | 9.5 |
| Other non-bloc constit. | 39 | 21.0% | 1.91 | 0.2 | 37.5% | 13.3% | 2.9 | 19.3% | 18.5% | 8.4 | 6.8 |
| National Avg/ Total | 150 | 100.0% | 9.09 | 23.4 | 42.7% | 23.3% | 3.0 | 22.8% | 100.0% | 10.7 | 7.1 |

*Notes:* The persistent electoral blocs (incl. neighbors) are identified based on our main *plurality* method. Other non-bloc constituencies include all constituencies that are not part of a persistent electoral bloc, except the capital city constituencies that are included under Non-bloc [capital city]. Population numbers are in millions and based on NASA's CIESIN population grid data of the year 2000. Population density is persons per square kilometer in the year 2000. The urban population is measured over all DHS rounds using the DHS definition of urban households. The largest ethnic group is the population share based on the DHS individual recode ethnicity data. Wealth is based on DHS wealth index of households (average over rounds). Electricity is the share of DHS households with electricity access (average over rounds). Shares of total luminosity and luminosity per capita (per 1000 persons) as of the year 2000 is based on NASA's DSMP nightlight data and NASA's CIESIN population grid of the year 2000. The category non-bloc Nairobi includes the constituencies Dagoretti, Kamukunji, Langata, Makadara, Starehe, Westlands. Non-bloc Lilongwe includes the constituencies Lilongwe City Central, Lilongwe City South East, Lilongwe City West. Non-bloc Lusaka includes the constituencies Chawama, Kabwata, Kanyama, Lusaka Central, Mandevu, Matero, Munali. Non-bloc constituencies are all constituencies outside the persistent blocs and the capital.

(a) Kenya
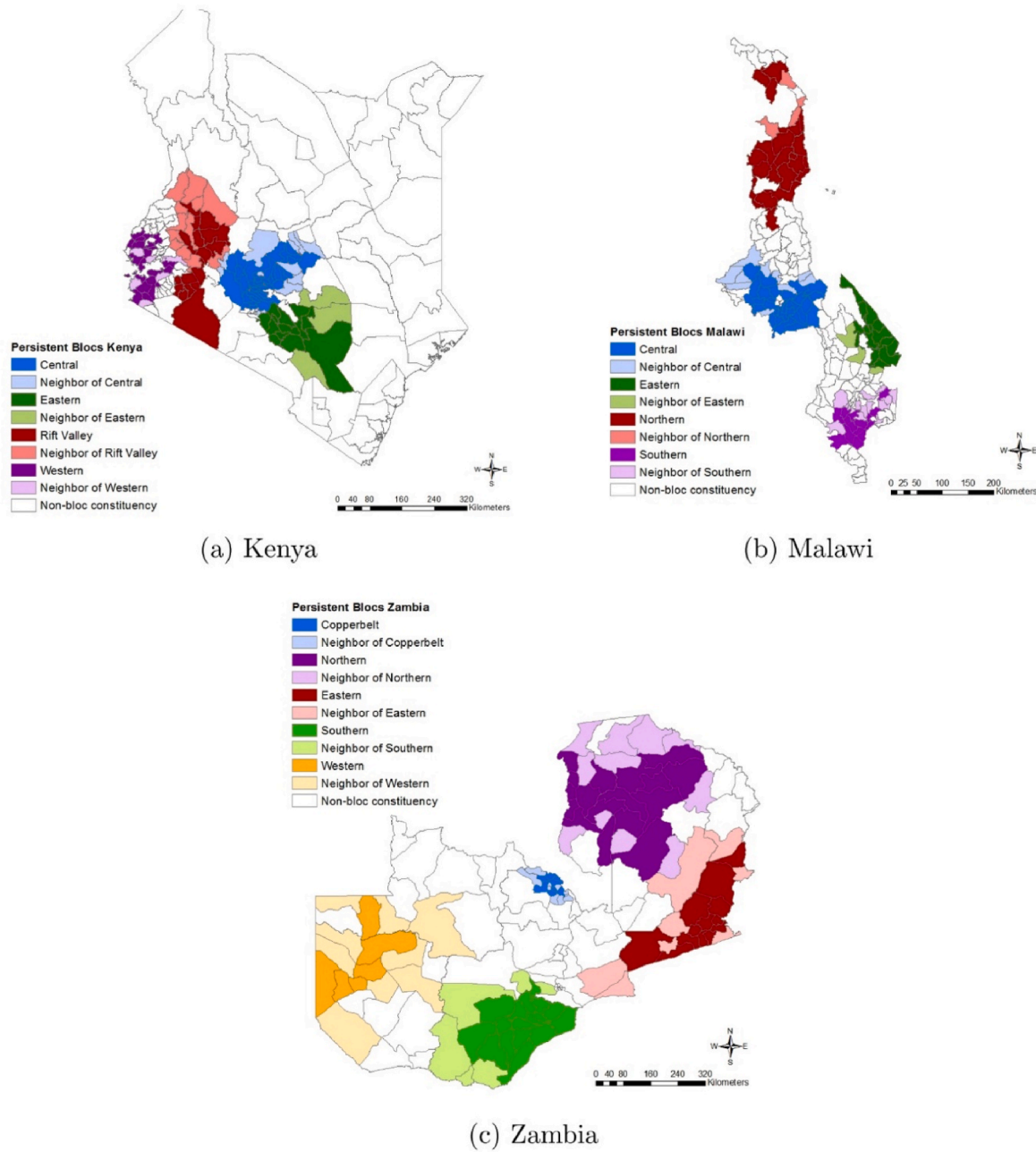


(b) Malawi



(c) Zambia

**Fig. A1.** Persistent Electoral Blocs, showing Neighbors in Kenya, Malawi, and Zambia Notes: The persistent electoral blocs (neighbors in lighter colors) are composed of constituencies that constitute statistically significant (at 5% level) clusters of winning vote shares for parties in presidential elections in at least 66% of the elections in our dataset, as defined above. We use the following constituency boundaries (shapefiles): Kenya 1997–2007, Malawi 1999–2014, Zambia 1991–2011. On the convention of including neighbors when identifying constituency clusters using the Local Moran's I, see Appendix 2.1.

Many of the blocs feature strong ethnic majorities. To investigate the relationship between ethnic shares and party vote shares within each bloc over time, Figure A2 shows the average share of votes that each bloc's dominant party received, divided by the average share that identity with the bloc's dominant ethnic group (for instance, the relationship between the average constituency vote share for KANU in 1992 and the average share of ethnic Kalenjin in constituencies belonging to the Rift bloc). We call this the Vote/Ethnic Ration (VE ratio). A VE ratio above 1, indicates that, on average, the dominant party received higher vote shares in the bloc's constituencies than the dominant ethnic group's share of the population. In 64% of all bloc-election-years the VE ratio is above 1. This is remarkable, given that the dominant ethnic group for all these bloc-election-years on average accounted for 63% of the population. The results suggest that regionally dominant parties gain a disproportionate electoral advantage within these blocs that cannot be explained by ethnic concentration alone.
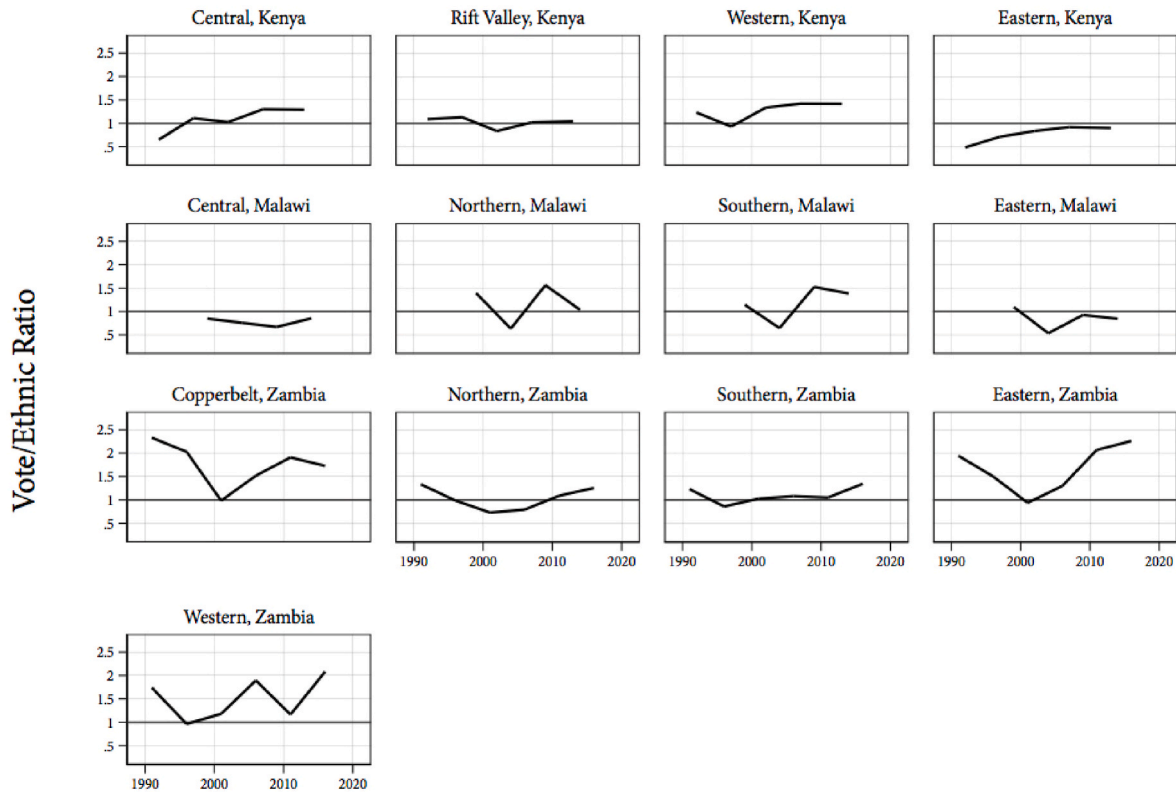
**Fig. A2.** Vote/Ethnic Ratio in Persistent Voting Blocs Notes: Lines show average percentage of the vote for the bloc's dominant party (across all constituencies in bloc) divided by average percentage of dominant ethnic bloc (across all constituencies in Bloc).
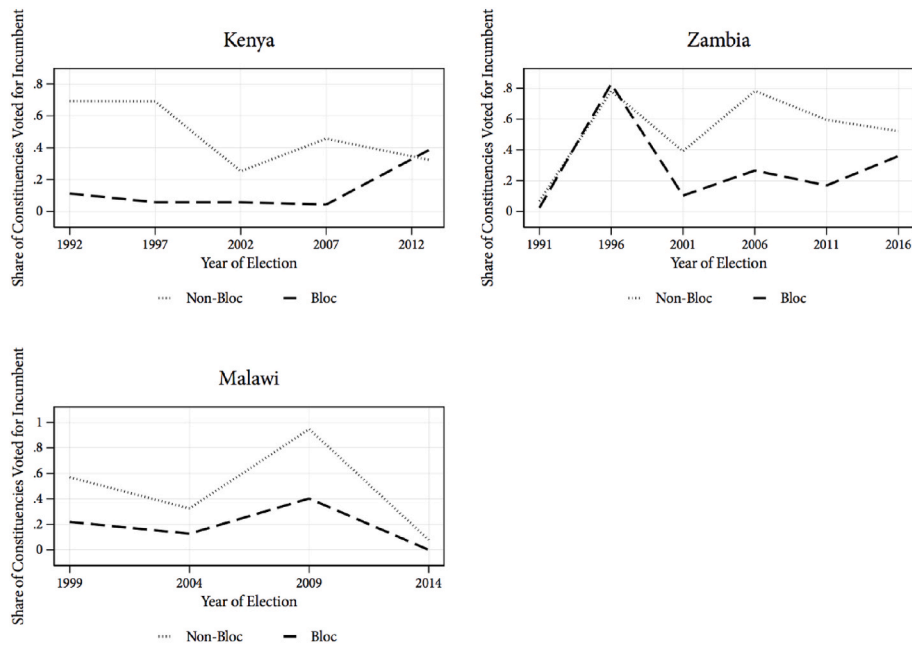


**Fig. A3.** Voting of non-bloc constituencies *Notes*: The figure shows the share of constituencies voting for the incumbent party (the one controlling the presidency at the time of the election) in non-bloc and bloc constituencies respectively. In Kenya (2013), we coded Jubilee as the incumbent party.

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