

# Voter Behavior and Government Performance in Malawi: An Application of a Probabilistic Voting Model

Christian Henning, Laura Seide, and Svetlana Petri

## 1 Introduction

A review of the burgeoning literature on participatory policy processes reveals that scholars typically focus on the involvement of stakeholder organizations and interest groups as a prerequisite of efficient development policies and ignore the role of voters and elections (World Bank 2011). This situation is at odds with political theory, which interprets electoral competition as a fundamental democratic mechanism for guaranteeing that governmental policies reflect society's interests. A theoretical justification for neglecting electoral competition and the role of the voter can be found in Becker's seminal contribution to political economy theory, which focuses on interest group competition based on the assumption that voters' electoral choices are completely controlled by interest groups e.g., via campaign spending. Another micro-political foundation for the neglect of voters can be derived from socio-structural theories of voting, i.e., following the theory of Lazarsfeld et al. (1968) or Lipset and Rokkan (1967), voters' electoral choices are completely determined by their social classes; hence, electoral competition does not imply any incentives for elected politicians to perform (i.e., to serve the needs and desires of their electorate). For example, following a socio-structural theory of voting, most scholars of African politics agree that ethnic voting dominates vote choice in multiethnic and nascent African democracies (Horowitz 1985; Bratton et al. 2011; Hoffman and Long 2013).

However, interesting work addressing the impact of voter behavior on governmental performance was recently published in political economy theory (e.g., Keefer and Khemani 2005; Bardhan and Mookherjee 2002). According to this

---

C. Henning (✉) • L. Seide • S. Petri  
Department of Agricultural Economics, University of Kiel, Kiel, Germany  
e-mail: [chenning@ae.uni-kiel.de](mailto:chenning@ae.uni-kiel.de)

theory, electoral competition is often restricted in reality, leading to biased policy outcomes. In general, policy biases result from two major mechanisms: government capture and a lack of government accountability. The latter mechanism corresponds to a lack of sufficient electoral incentives for elected politicians to implement policies that benefit their constituencies; instead, politicians serve their self-interests. The former mechanism corresponds to the bias of electoral competition in favor of special interests. The application of an extended Baron-Grossman and Helpman (1996) model demonstrates that imperfect government performance in terms of government capture results if one assumes that voters apply different mechanisms to choose between political parties or candidates based on their level of information on politics. In particular, while informed voter base their vote choices directly on observed party platforms or on observed policy outcomes, e.g., economic well-being observed under a specific governmental policy, uninformed voters base their vote choices on non-policy factors, e.g., on socioeconomic characteristics like ethnicity, regional origin, or social class or rely on performance evaluation communicated by mass media or other social peer groups. Hence, politicians seeking for reelection have significantly different incentives to serve the interest of their electorate depending on the share of informed and uninformed voters. Thus, to the extent that the share of informed voters varies across social groups, governmental policy is biased in favor of more informed voter groups. However, although existing theoretical work convincingly emphasize the impact of voter behavior on governmental performance, central conclusions rest on the assumption that people apply different mechanisms to evaluate different parties and candidates running for elections, while a comprehensive empirical analyses that explicitly measure voter behavior to test these assumptions have not yet been performed. Hence, Bardhan and Mookherjee accurately conclude that future work is needed to test their assumptions with respect to voter behavior. On the other hand inspired by the Michigan School (Campbell et al. 1960) as well as the Columbia-School (Lazarsfeld et al. 1968) nowadays a large body of empirical voter studies exists that analyzes the relative importance of different voting motives for specific voter groups, e.g. policy-oriented voting (e.g., Downs 1957a, b; Enelow and Hinich 1984), non-policy oriented voting (Miller and Shanks 1996), as well as retrospective voting (Fiorina 1981). However, these empirical voter studies do not yet relate identified difference in voter behavior with induced governmental performance.

This paper integrates existing political economy approaches that explain the impact of voter behavior on government performance and advanced empirical voter studies that focus on voter behavior to derive theoretical hypotheses that will be empirically tested by estimating a probabilistic voter model. In particular, we provide a theory that relates the relative importance of different voting motives for different social voter groups to induced electoral incentives for politicians and subsequently to government performance. Based on our theoretical model, we derive indices of government accountability and capture that are defined in political equilibrium and measure the government's incentives to implement policies that serve pure self-interest or special interests at the expense of the general public.

In the empirical part of the paper, we estimate a probabilistic voting model by applying a mixed conditional logit (MCL) approach using Afrobarometer data for Malawi. Based on the estimated model, we calculate theoretically derived indices of government accountability and capture. Moreover, we derive indices that measure the relative importance of different policy- and non-policy-oriented voting motives for a number of socioeconomic groups. Further, we evaluate the relationship between the relative importance of different voting motives and government performance (i.e., accountability and capture).

## 2 Related Literature

The role of the voter in African politics has been addressed by two strands of literature: theoretical analyses of the impact of voter behavior on government performance and empirical studies on voter behavior, respectively. Regarding the former strand of theoretical literature Keefer and Khemani (2005) and Bardhan and Mookherjee (2002) focus on the voter's role to explain the redistribution gap from the wealthy to the poor. These authors identify three aspects that support political market imperfections: (a) asymmetric voter information, (b) social polarization and (c) missing accountability of political actors. The basic theory that explains distorted electoral competition by citing imperfectly and asymmetrically informed voters is based on Baron (1994) and Grossman and Helpman (1996). Baron (1994) distinguishes between informed and uninformed voters. Informed voters vote in a policy-oriented manner, and uninformed voters rely heavily on non-policy indicators (e.g., party loyalty, ethnicity or perceived competence) to evaluate parties. Accordingly, the votes of uninformed voters can be influenced by campaign expenditures that are unrelated to political decisions. Particularly in developing countries, people are only coarsely informed about policies. This lack of detailed knowledge occurs due to illiteracy, limited mobility, restricted media access and a number of other factors. Without information, people are unable to adequately assess politicians based on their political performance; instead, they use proxies to assess politicians. These proxies are typically easily observable policies or previously existing party loyalties. Khemani (2004) finds that policy actions that are easily observable increase the closer a country moves to Election Day. The influence of party loyalties is described by Bardhan and Mookherjee (2002), who assume that a higher level of voter loyalty reduces electoral competition, increasing capture and decreasing government accountability. As a consequence, Mani and Mukand (2002) demonstrate that politicians who maximize their political support have strong incentives to focus on targeted and visible policies at the cost of broad social services. First, this situation occurs because only a small number of voters have enough specific and substantial information to evaluate whether policies have actually contributed to better quality services. Second, measurable benefits may not emerge until several years after a policy has been implemented, which increases voters' difficulties in rewarding or punishing politicians within a particular policy

cycle. Third, providing service jobs or building roads and buildings can be easily targeted to the politicians' own constituencies; thus, these policies are highly visible for even poorly informed voters. Gazdar (2000), the World Bank (1998, 2001), and Keefer (2002b) provide empirical evidence for this phenomenon. Another line of evidence for the importance of information for voter behavior and induced governmental performance comes from the literature on electoral cycles in fiscal and monetary policies. Cross-country analyses indicate that electoral cycles in monetary and fiscal policies are significantly larger in developing countries (Block 2002; Schuknecht 2000; Shi and Svensson 2000). Schuknecht (2000) and Shi and Svensson (2000) establish a direct link between electoral budget cycles and the limited availability of information to voters, with the latter factor being measured via access to free media. Analogously, Besley and Burgess (2003) demonstrate that state governments in India respond to declines in food production and to crop flood damage by increasing public food distribution and calamity relief spending in locations that have greater newspaper circulation. Thus, external interventions, such as information campaigns by civic society organizations, may be useful in promoting the diffusion of information that is needed for political accountability, particularly in poorer countries. Further, in line with the Columbia-School of voting (Lazarsfeld et al. 1968) Keefer and Khemani highlight social polarization as another mechanism by which voter behavior impacts governmental performance. Interpreting social polarization as expressive or instrumental voting, a dominance of non-policy voting based on ethnicity or social class might also explain why in many developing countries, where the population is divided into heterogeneous groups, suboptimal policies continue to be executed. However, to the best of our knowledge, a comprehensive empirical test of these hypotheses based on voter survey studies is not currently available in the literature. Keefer and Khemani highlighted a third imperfection of political markets that corresponds to the inability of politicians to make credible promises in elections. Persson and Tabellini (2000) demonstrate that when pre-election promises are not credible, elections become less effective as instruments for holding politicians accountable. When retrospective voting is more important (i.e., the more voters base their votes on their own economic welfare that was realized when a party was in government), politicians' incentives c.p. to implement policies that serve the interests of their electorate are higher. Of course, the more elected politicians discount future benefits from being reelected, the lower is the impact of retrospective voting on accountability. In this context, the existence of stable political parties is highlighted as an institutional environment that decreases political discount factors, as stable political parties correspond to an organizational commitment device for honoring future benefits from reelection. Keefer (2002a) demonstrates that in countries where political parties are weak or not established, politicians tend to make credible promises only to voters with whom they have built a personal reputation. Such ties emerge most clearly as the patron-client relationship that is identified with politics in developing countries by a large body of literature. Several studies provided empirical evidence for clientelistic policies (e.g., Glewwe and Jacoby 1994; Sanmartin 2001; Glaeser and Shleifer 2002).

Overall, interesting theoretical work has been published concerning the impact of voter behavior on government performance, where the theoretical hypotheses of Keefer and Khemani and Bardhan and Mookherjee relate directly to empirical hypotheses on voter behavior. In particular, limited information induces voters to rely less on policy indicators (i.e., *policy-oriented voting*) and more on non-policy indicators that are based on ethnic, religious, social or political characteristics (i.e. *party identity*), party competence based on perceived performance (i.e., *approval voting*), or based on observed economic performance (i.e., *retrospective or economic voting*). In particular, an assessment of the relative importance of different voting motives for different social groups and of the corresponding implications for government performance is of interest. However, although some empirical evidence concerning the impact of voter behavior on government performance is available, a comprehensive micro-politically founded empirical confirmation of central theoretical hypotheses has not yet been provided. Hence, Bardhan and Mookherjee (2002, p. 38) accurately say: “We conclude by stressing the need for empirical research. Are local governments more subject to capture? What are the determinants of absolute and relative capture? Are assumptions and implications of our model validated by data? Perceptions of capture by voters may perhaps be elicited from careful design of voter surveys.”

As mentioned above, there exists a second strand of literature focusing on empirical studies of voter behavior. Especially, a large body of empirical voter studies analyzed African voters (For example, see the literature overview of Hoffman and Long 2013; Ferree and Horowitz 2010 or Bratton et al. 2011). But these empirical voter studies mainly focus on the relative importance of different non-policy factors, e.g. ethnicity and regional origin, in determining African vote choices, while these studies do not relate different voting motives with induced government performance (Ferree and Horowitz 2010; Bratton et al. 2011; Hoffman and Long 2013). At the methodological level, the majority of the empirical African voter studies apply socio-structural theories (e.g., the theory of Lazarfeld et al. 1968 or Lipset and Rokkan 1967) or social psychological theories of voter behavior (Campbell et al. 1960). Hoffman and Long (2013) published one of the few studies of voter behavior in Africa to mention the importance of policy issues and the spatial theory of voting (Downs 1957a, b as well as Enelow and Hinich 1984). However, although these authors mention the relevance of policy distances as variables of party choices, they fail to include these factors in their empirical model (see Hoffman and Long 2013). The neglect of policy-oriented voting in African election studies is surprising since spatial theory of voting (Enelow and Hinich 1984) has become the workhorse model of election studies in industrialized countries (Adams et al. 2005).

Moreover, the few existing African voter studies that explicitly consider different voter motives (e.g., economic versus ethnic voting or approval voting) only provide a test of statistical significance without providing a measure of the relative importance of different voting motives. One notable exception is the study by Bratton et al. (2011), who computed the marginal effects of different indicators of ethnic and economic voting. In particular, Bratton et al. (2011) provide empirical

evidence from a cross-country panel analysis that includes 16 African countries that in addition to ethnic identification, voters' perception of the economic development achieved under the government is a particularly important determinant of voters' electoral choices.

In this context, this paper contributes to the literature by closing existing research gaps, i.e. we combine the theoretical work on voter behavior and government performance with the existing empirical work on voter behavior. In particular, we apply a Baron-Grossman-Helpman model (BGH) as a theoretical framework to derive theoretically founded indices that measure government accountability and capture. At methodological level to combine the original BGH-model with empirical voter studies we need to extend the former via applying the more general Local Nash equilibrium concept to the electoral equilibrium as suggested by Schofield (2007). Further, based on our theoretical framework, we derive indices that measure the relative importance of different policy and non-policy voting motives. Finally, we apply our theory empirically by using data from the Afrobarometer voter survey in Malawi in 2008 to estimate a probabilistic voter model that includes different voter motives.

### 3 The Model

#### 3.1 The Voters

Following the literature on the theory of voting, we assume that people vote for different parties based on the utility a voter ascribes to the different parties. Let  $v \in NV$  denote the index of an individual voter,  $NV$  denote the set of voters and  $n$  is the total number of voters. Further, let  $NP$  denote the set of political parties that run for election, where  $k \in NP$  denotes the index of an individual party and  $p$  is the total number of parties. Then each voter can be described by a vector  $v_v = \{v_{vk}, \dots, v_{vp}\}$ , where it holds:

$$v_{vk} = V_{vk} + \varepsilon_{vk} \quad (1)$$

Here,  $V_{vk}$  denotes the observable utility that voter  $v$  associates with party  $k$ , and the terms  $\varepsilon_{vk}$  are the stochastic errors. Following the literature, we assume that each  $\varepsilon_{vk}$  is drawn from the same probability distribution. The cumulative distribution of the errors is denoted as  $\Psi$ . Because of the stochastic assumption, voter behavior is modeled by a probability vector, where the probability that a voter  $v$  votes for party  $k$  is:

$$P_{vk} = \Pr[V_{vk} \geq V_{vl}, \text{ for all } l \neq k] = F_k^v(v_v) \quad (2)$$

The expected vote share of a party  $k$  results as:

$$S_k = \frac{1}{n} \sum_v P_{vk} \tag{3}$$

Pr[] stands for the probability operator associated with  $\Psi$ ; this probability is a function of the vector of observable utilities that voters associate with the different parties. The specific function F depends on the assumed distribution  $\Psi$ . In this regard, different distributions are assumed in the literature, implying different voter models. For example, many theoretical studies assume a uniform distribution in a two-party setup, as these assumptions facilitate formal analyses (for example, see Grossman and Helpman 1996; Bardhan and Mookherjee 2006 or Persson and Tabellini 2000). However, the workhorse model that is applied in empirical voter studies corresponds to the logit model, assuming an extreme value distribution for  $\Psi$ . In particular, assuming that each  $\varepsilon_{vk}$  is independent and identically extreme value-distributed allows the derivation of an analytical form for  $F_k^v(v_v)$  (McFadden 1974):

$$P_{vk} = F_k^v(v_v) = \frac{e^{V_{vk}}}{\sum_{l \in NP} e^{V_{vl}}} \tag{4}$$

Following the voter theory, the utility that a voter  $v$  associates with a party  $k$  incorporates different components (i.e., a valence ( $V^{NP}$ ), a retrospective ( $V^R$ ), and a policy-oriented ( $V^P$ ) component):

$$V_{vk} = \beta_v V_{vk}^P + \delta_v V_{vk}^R + \alpha_v V_{vk}^{NP}, \tag{5}$$

where  $\beta$ ,  $\delta$  and  $\alpha$  are the relative weights of the different utility components. In a perfect political world, electoral competition would be based on the policy platforms, say  $\gamma_A$  and  $\gamma_B$ , suggested by candidates A and B, respectively. Voters would evaluate candidates based on their policy platform (i.e., voters would transform policy platforms into their individual welfare according to the political technology,  $T(Z, \gamma)$ ,<sup>1</sup> and vote for the candidate whose policy platform implies their highest utility). Hence, in a perfect world, vote choice is only based on the policy-oriented component  $V_{vk}^P(\gamma_k)$ . The motive of policy-oriented voting goes back to the classic voting theory created by Davis et al. (1970) and Enelow and Hinich (1984). The spatial voting model formulates voter’s utility as a loss function of the weighted distance between a voter’s own ideal point  $x_{dv}$  on a specific policy dimension  $d$  and the position taken by a party  $k$ ,  $\gamma_{dk}$ .

---

<sup>1</sup>See Chapter “A Network Based Approach to Evaluate Participatory Policy Processes: An Application to CAADP in Malawi” in this book for the definition of the political technology  $T(Z, \gamma)$ .

$$V_{vk}^P = \sum_d \beta_d (\gamma_{dk} - x_{dv})^2 \quad (6)$$

However, because in the real world, the transformation of policies into welfare is rather complex, the calculation of expected utility is also rather complex from the viewpoint of individual voters. Hence, voters apply simple heuristics to estimate their expected utility. Basically, voters apply different types of policy and non-policy indicators to estimate the future utility they expect assuming a candidate is elected. Non-policy oriented indicators correspond to the concept of valence (Schofield 2007), which holds that based on specific characteristics  $z$ , such as appearance, charisma, occupation and ethnicity, voters perceive a specific competence or popularity of candidates and parties. Moreover, following Grossman and Helpman (1996), we also assume that voters are at least partially swayed by the relative campaign spending of different parties. This effect may reflect the influence of election advertisements or other efforts made to mobilize support (e.g., election rallies, door-to-door visits by campaign workers, etc.):

$$V_{vk}^{NP}(z, c) = \sum_l \alpha_{vkl} z_l + \sum_l \alpha_{vkl}^L C_l, \quad (7)$$

where  $C_l$  denotes the campaign spending of party  $l$  and  $c$  is the vector of campaign spending of all parties. Parties collect campaign funds from different sources. According to Magee et al. (1989) or Grossman and Helpman (1996), organized interest groups have incentives to provide resources to parties for campaign spending. However, Magee et al. (1989) assume that campaign spending by interest groups is mainly governed by electoral motives, while Grossman and Helpman highlight the influence motive of interest groups (i.e., interest groups provide resources to parties expecting that in exchange, parties will adapt their platforms to the ideal points of the interest groups). In addition to campaign spending by special interest groups, especially in developing countries international donor organizations also provide financial resources to politicians (e.g., via development aid). Development aid is often granted conditional on the implementation of specific policies (Dollar and Easterly 1999). Moreover, financial aid gives national politicians some leeway to generate benefits for their electorate. Thus, from the viewpoint of national politicians, development aid is similar to campaign spending. Therefore, we formally include development aid in  $C_k$ , although we are aware that campaign spending by national interest groups and development aid are fundamentally different in many other respects.

A third set of indicators corresponds to the concept of retrospective voting (Fiorina 1981; Katz and Katz 2009) (i.e., voters use observable welfare indicators  $Z_v^r$ , such as income growth or other well-being indicators realized in the incumbent's last election period, to update their evaluation of the incumbent's competence and popularity). From the viewpoint of the incumbent party, the welfare indicator is determined by implemented policies,  $Z_v^r = z_{vr}(\gamma)$ . Hence, the retrospective component of voters' perceived utility is also a function of governmental



policy,  $V_{vk}^R(z_{vr}(\gamma_G))$ , where  $\gamma_G$  indicates the governmental policy. Assuming a linear approximation for  $V^R$  implies:

$$V_{vk}^R\left(Z_v^r(\gamma_G)\right) = \sum_r \delta_{vkr} Z_v^r(\gamma_G) \tag{8}$$

Please note that following the empirical voting literature, we assume that perceived economic performance has an impact not only on voters’ evaluations of governmental parties but also on all other nongovernmental parties.

### 3.2 *Parties and the Government*

Parties choose their policy platform,  $\gamma_k$ , to maximize their representation in the legislature. Based on this objective, a party chooses its policy platforms to maximize its vote share,  $S_k$ . Due to voter behavior, parties choose their policy platforms recognizing that their policy endorsements will affect their popularity among voters in different ways. First, voters evaluate party platforms based on their policy-oriented utility component (i.e., voters compare party positions on different policy dimensions to their own ideal points; the closer a party’s platform to a voter’s ideal point, the more she adores this party). Second, parties choose their platforms while considering organized interest groups, which vary their support contributions to a party according to the position a party takes. The parties know that any contributions they collect from interest groups can be used to finance campaign activities. Following Grossman and Helpman (1996) and Bardhan and Mookherjee (2006), we assume that in political equilibrium, interest groups donate locally truthful campaign contribution schedules to parties (i.e., the total contributions collected by a party  $k$  correspond to a weighted sum of interest group welfare):

$$C_k = \sum_J \rho_{Jk} W_J(\gamma_k) \tag{9}$$

where  $W_J(\gamma_k)$  denotes the average per capita welfare of an individual member of the interest group  $J$  and  $\rho_{Jk}$  denotes the weight of interest group  $J$ . Please note that the sum of the interest group weights is generally lower than one (see Grossman and Helpman 1996).<sup>2</sup> Moreover, we formally treat international donor organizations as

---

<sup>2</sup>Please note that compared to Grossman and Helpman (1996), our set-up is more general (i.e., we allow for more than two parties and allow the assumption of a non-uniform distribution for  $\Psi$ ). Therefore, the equilibrium results of Grossman and Helpman (GH) do not directly apply to our more general setup. However, at this stage, we do not prove that the essential results of GH also hold for our more general set-up but instead assume this point exogenously. We leave a rigorous proof of this assumption for future work.

interest groups (i.e., the amount of financial aid provided by these organizations corresponds to their intrinsic policy preferences,  $W_j(\gamma)$ , with  $j = \text{donor}$ ).

After rearrangement the share equation results in:

$$S_k = \frac{1}{n} \sum_v P_{vk} = \frac{1}{n} \sum_v F_k^v(\gamma_k) \tag{10}$$

Finally, parties have also intrinsic policy preferences (i.e., we understand politicians not as pure office-seeking agents who maximize their political support  $S_k$  but also as parties with intrinsic policy preferences). Let  $u_k(\gamma_k)$  denote the intrinsic policy preferences of party  $k$ . Then the total utility of a party results as:

$$U_k = S_k(\gamma_k) + \vartheta_k u_k(\gamma_k) \tag{11}$$

$\vartheta_k$  is a party-specific weight that reflects the relative importance of rents received from political office versus the intrinsic utility derived from a policy. Accordingly, the policy platform chosen by a governmental party  $k = G$  to maximize its total utility derived from political support and its intrinsic political utility results from the following first-order condition:

$$\begin{aligned} \frac{\partial U_G}{\partial \gamma_G} &= \frac{\partial S_G}{\partial \gamma_G} + \frac{\partial u_G}{\partial \gamma_G} \\ &= \sum_{v \in NV} \sum_k \frac{\partial F_G^v}{\partial V_{vk}} \left( \beta_v \frac{\partial V_{vk}^P}{\partial \gamma_G} + \delta_v \frac{\partial V_{vk}^R}{\partial \gamma_G} + \alpha_v \alpha_{vGk}^L \sum_J \rho_{kJ} \frac{\partial W_J}{\partial \gamma_G} \right) \\ &\quad + \vartheta_k \frac{\partial u_G}{\partial \gamma_G} \\ &= 0 \end{aligned} \tag{12}$$

Rearrangement implies:

$$\frac{\partial U_G}{\partial \gamma_G} = \beta_G \frac{\partial V_G^P}{\partial \gamma_G} + \delta_G \frac{\partial Z_G^r}{\partial \gamma_G} + \alpha_G \frac{\partial W_G}{\partial \gamma_G} + \vartheta_G \frac{\partial u_G}{\partial \gamma_G} = 0 \tag{13}$$

where it holds:

$$\begin{aligned} \beta_G &= \sum_{v \in NV} F_{GG}^v \beta_v; \delta_G = \sum_{v \in NV} \delta_G \left| \sum_k F_{Gk}^v \delta_{vkr} \right|; \alpha_G \\ &= \sum_J \rho_{JG} \sum_{v \in NV} \alpha_v \left| \sum_k F_{Gk}^v \alpha_{vGk}^L \right| \end{aligned} \tag{14}$$

$$\begin{aligned} \frac{\partial V_G^{PV}}{\partial \gamma_G} &= \sum_v \frac{F_{GG}^v \beta_v}{\beta_G} \frac{\partial V_{vG}^{PV}}{\partial \gamma_G}; \frac{\partial Z_G^R}{\partial \gamma_G} = \sum_v \frac{\delta_v \sum_k F_{Gk}^v \delta_{vkr}}{\delta_G} \frac{\partial Z_v^r}{\partial \gamma_G}; \frac{\partial W_G}{\partial \gamma_G} \\ &= \sum_J \frac{\rho_{JG}}{\sum_H \rho_{HG}} \frac{\partial W_J}{\partial \gamma_G} \end{aligned} \tag{15}$$

$$F_{Gk}^v = \frac{\partial F_G^v}{\partial V_{vk}} \tag{16}$$

It follows from Eq. (13) that the optimal policy platform chosen by a governmental party  $G$ , given the platforms of all other parties, satisfies the necessary condition for maximizing a weighted sum of the average welfare of voters, the aggregated welfare of all interest group members and the intrinsic policy preferences of a party.

### 3.3 Political Equilibrium

Following Schofield (2001), we apply the concept of Local Nash Equilibrium (LNE); a strategy vector  $\gamma^* = [\gamma_1^*, \dots, \gamma_p^*] \in \Gamma$  is a local weak (strict) Nash equilibrium of the profile function  $S: \Gamma \rightarrow R$  if, for each party  $k$ , there exists a neighborhood  $\Gamma_k$  of  $\gamma_k^*$  in  $\Gamma$  such that:

$$S_k(\gamma_k^*, \gamma_{-k}^*) \geq S_k(\gamma_k, \gamma_{-k}^*) \text{ for all } \gamma_k \in \Gamma_k \tag{17}$$

The LNE is strict (LSNE) if the inequality holds strictly; otherwise, it is a weak LNE. As Schofield demonstrates nicely, assuming an extreme value distribution for  $\Psi$  implies that the first-order condition in Eq. (13) is a necessary but not sufficient condition for an LNE. In particular, second-order conditions must be fulfilled to guarantee that a strategy vector  $\gamma$  is an LSNE.

However, in contrast to our approach, Schofield incorporated neither lobbying behavior nor retrospective voting.

### 3.4 Voter Behavior and Government Performance

Before we present our empirical estimations, we derive indices that describe the implications of voter behavior for government performance. As described in the introduction, according to the relevant literature (e.g., Keefer and Khemani 2005 and Bardhan and Mookherjee 2002), less electoral competition implies incentives for the government to implement policies that do not correspond to the needs and desires of the majority of society (i.e., government performance is c.p. lower). Given our derivations above, the more c.p. voters rely on non-policy indicators

when evaluating parties, the less a political support-maximizing government considers voters' preferred policy position when it formulates governmental policies. Formally, the larger the  $\alpha$ -parameter in relation to the  $\beta$ —and  $\delta$  -parameters, the more voters base their vote choice on non-policy factors; thus, more electoral competition implies that the government orients its policy towards organized interest groups and ignores voters. Accordingly, we define an index of governmental accountability ( $GA$ ) vis-a-vis the voter as the following relation:

$$GA_1 = \frac{\beta_G + \delta_G}{\alpha_G + \beta_G + \delta_G} \quad (18)$$

While  $GA_1$  measures the relative accountability of the government vis-a-vis the voter, a low value for  $GA_1$  does not necessarily imply that the government is not accountable to society because a high  $\alpha$ -value only implies that the electoral outcome is significantly driven by campaign spending. Thus, as long as campaign funds are generated primarily by national interest groups, elected politicians might still have strong incentives to represent society's interests, as organized interest groups are constituted by members of society. Only if campaign spending is derived primarily from other organizations (e.g., international donors) does a high  $\alpha$ -value imply low government accountability. This effect occurs because international donor organizations do not represent society members. In many cases, donor organizations act in the interest of a specific society group, but from a society perspective, donor-driven policies are at best derived from imposed welfare functions.

Further, as demonstrated by Eq. (13), the larger  $\vartheta_G$  is in relation to the sum ( $\alpha_G + \beta_G + \delta_G$ ), the larger is c.p. the incentive of the government to pursue its self-interest. Hence, we derive  $GA_2$  as a second index of government accountability:

$$GA_2 = \frac{\vartheta_G}{\alpha_G + \beta_G + \delta_G} \quad (19)$$

A third intuitively conceivable measure of government accountability corresponds to the incentive for the government to diverge from the policy outcome that results from a perfect electoral competition. Following Schofield (2007), we define the electoral center ( $\gamma^{**}$ ) as the policy position that maximizes the electoral support of the government, assuming that no lobbying influence occurs and that the government is solely office-seeking (i.e., the government derives no own intrinsic utility from policies) (i.e.,  $\vartheta_G = 0$ ). Thus, it holds:

$$\gamma^{**} = \operatorname{argmax}_\gamma \sum_v w_v V_v^P(\gamma) \quad (20)$$

$w_v$  denotes the political weight of a voter  $v$  and is defined below in Eq. (24). Given the definition of the electoral center, a straightforward measure of government accountability corresponds to the change of party platform a government can make in comparison to the electoral center without losing the elections, as follows:

$$\Delta\gamma = \operatorname{argmax} \left[ \Delta\gamma' \beta \Delta\gamma \right] \tag{21}$$

s.t.:

$$S(\Delta\gamma + \gamma^{**}) \geq 0.5 \tag{22}$$

$\beta$  denotes the vector of the normalized weights of the different policy dimensions taken as the average across all voters. Expressing  $\Delta\gamma$  as a percentage of  $\gamma^{**}$  indicates the leeway of the government to select a policy that pursues its own interests against society’s will without losing the election. Thus, the larger this percentage, the lower is c.p. the government accountability ( $GA_3$ ):

$$GA_3 = 1 - \frac{\Delta\gamma}{\gamma^{**}} \tag{23}$$

Moreover the relative weight of the policy position of an individual voter determining governmental policy results from Eq. (13) as:

$$w_v = \frac{F_{GG}^v \beta_v + \delta_v \sum_k F_{Gk}^v \delta_{vkr}}{(\beta_G + \delta_G)} \tag{24}$$

As explained in detail below the relative political weight of individual voters depends on the relative importance of policy and non-policy voting motives. Please note that a perfect democratic vote corresponds to an equal relative weight for all voters (i.e., the weight of each voter equals  $\frac{1}{n}$  if  $n$  is the total number of voters). If voters differ in the relative importance of voting motives, they also have different voting weights; in particular, the relative importance of the valence component in comparison to the policy-oriented and retrospective voting component determines the relative weights of voters.

Further, we can also derive the relative political weight of social groups. We define social groups as partitions of the total society (e.g., rich versus poor or rural versus urban voters), where  $T$  denotes the index of a social group. Thus, it holds:

$$w_T = \sum_{v \in T} w_v \tag{25}$$

Based on the political weights of social groups, we define governmental capture as the average weight of a member of a social group  $T$  compared to the average political weight of a member of another social group  $T'$ :

$$GC = \frac{w_T n_{T'}}{w_{T'} n_T} \tag{26}$$

The relative weight of an individual voter and hence of a social group is determined by relative voting behavior, i.e., the relative importance of non-policy versus policy voting motives.

Further, government capture results from the lobbying activities of vested interest groups. Particularly when not all society members are equally organized into interest groups (Grossman and Helpman 1996) or when the relative political weight of different interest groups deviates from the corresponding population shares of the society members organized in these interest groups (Bardhan and Mookherjee 2002). Capture that results from the asymmetric political influence of organized interest groups is analyzed in Chapter “A Network Based Approach to Evaluate Participatory Policy Processes: An Application to CAADP in Malawi”, and we do not further explore this subject here. However, please note that given our general theoretical framework, it follows that biased electoral competition might compensate for biased incentives of politicians induced by asymmetric lobbying activities and vice-versa. Thus, at least theoretically, although both channels of interest mediation, election and lobbying, are biased still a unbiased policy might result.

To measure the relative importance of different voting motives, we proceed as follows. First, for voting motives based on indicator variables controlled by parties (i.e., policy-oriented voting based on party platforms and retrospective voting based on observed economic development that is indirectly controlled by governmental party choices), we use relative marginal effects of the different indicator variables. In particular, we define the marginal effect of an indicator variable  $\kappa$ , controlled by a governmental party, as follows:

$$ME_{k\kappa} = \frac{\partial S_k}{\partial \kappa} \quad (27)$$

Then we can define the following directional utility differentials:

$$ME^P = \sum_{\kappa=y} |ME_{k\kappa}| \quad (28)$$

$$ME^R = \sum_{\kappa=z'} |ME_{k\kappa}| \quad (29)$$

Accordingly, the importance of a utility component corresponds to the sum of the absolute marginal effects of the indicator variables that determine this component. If we mean-scale all indicator variables, the sum of the absolute marginal effects corresponds to the change in the reelection probability that is induced by a 100% change of all indicator variables in a direction that increases the reelection of a party  $k$ . In contrast to policy-oriented and retrospective voting, non-policy indicator variables that are used by voters to evaluate a candidate's competence, such as appearance, ethnicity, etc., cannot be easily changed by a party in the short- or medium-run. Hence, non-policy indicator variables determine a constant utility that voters assign to parties. To measure the relative importance of the non-policy

utility component, we compute the change in the reelection probability of a party that is derived under the assumption that voters would not apply non-policy indicators to evaluate parties. Technically, this change corresponds to the change in the reelection probability of a party assuming  $\alpha_v$  equals zero, e.g.  $S_k(v_v, a_v) - S_k(v_v, a_v = 0)$ . Accordingly, we can approximate this absolute difference in the reelection probability by the following marginal effect. For notational convenience we derive this marginal effect for the governmental party G:

$$ME_{vG}^{NP} = \left| \frac{\partial S_G^v}{\partial \alpha_v} \right| = \left| \sum_k \frac{\partial S_G^v}{\partial V_{vk}^{NP}} V_{vk}^{NP} \right| \tag{30}$$

The relative importance of voting motives results as the relation of the marginal utilities, e.g. the relative importance of the valence vis-à-vis the policy component results as:

$$RRI^{NP} = \frac{ME^{NP}}{ME^P} \tag{31}$$

With respect to content, the index  $RRI^{NP}$  indicates the percentage change by which a governmental party would need to adapt its policy platform to compensate for the electoral advantage or disadvantage implied by non-policy voting.

Analogously, we define the relative importance of retrospective voting vis-à-vis the policy component by:

$$RRI^R = \frac{ME^R}{ME^P} \tag{32}$$

$RI$  corresponds to the rate of substitution (i.e., the percentage change in the policy position of the governmental party that is needed to compensate for a 1% change in the economic satisfaction perceived by a voter). Finally, to assess the relative importance of different voting motives empirically, we relate calculated relative marginal effects ( $RRI$ ) to the sum of all marginal effects:

$$\begin{aligned} RI^{NP} &= \frac{|ME^{NP}|}{|ME^{NP}| + |ME^P| + |ME^R|}; RI^P = \frac{|ME^P|}{|ME^{NP}| + |ME^P| + |ME^R|}; RI^R \\ &= \frac{|ME^R|}{|ME^{NP}| + |ME^P| + |ME^R|} \end{aligned} \tag{33}$$

## 4 Econometric Models and Estimation Strategy

Following the probabilistic voter model, we assume that the probability ( $P_{vk}$ ) that a voter  $v$  votes for a party  $k$  results from a logit function. For example:

$$P_{vk} = \left[ \sum_l \exp(V_{vl} - V_{vk}) \right]^{-1} \quad (34)$$

where  $V_{vk}$  denotes the utility that voter  $v$  derives from party  $k$ . As described above, we assume different policy and non-policy utility components (i.e., a valence  $V^{NP}$  component, a retrospective  $V^R$  component, and a policy-oriented  $V^P$  component):

$$V_{vk} = \beta_v V_{vk}^P + \delta_v V_{vk}^R + \alpha_v V_{vk}^{NP} \quad (35)$$

However, because we cannot observe all of the relevant variables that determine a voter's utility empirically, we use different indicator variables to approximate a voter's utility. In particular, we approximate the different utility components using a set of voter- and party-specific indicator variables:

$$V_{vk}^P = \sum_d \beta_d (\gamma_{dk} - x_{dv})^2; V_{vk}^{NP} = \alpha_k^0 + \sum_z \alpha_k^z Z_v; V_{vk}^R = \sum_r \delta_k^r R_{vr} \quad (36)$$

Technically, we estimate a probabilistic voter model by taking policy distances as party-specific variables and voter characteristics as individual-specific variables. In particular,  $x_{dv}$  denotes voter  $v$ 's ideal point regarding a relevant policy dimension  $d$ , while  $\gamma_{dk}$  denotes the party position on the policy dimension  $d$ . Further, we approximate a voter's non-policy utility using a party-specific constant,  $\alpha_k^0$ , and a set of voter-specific variables,  $Z_v$ , for which we estimate a set of party-specific coefficients,  $\alpha_k^z$ .  $z_v$  is a vector of voter-specific characteristics, including socioeconomic variables (e.g., age, sex and ethnicity). In the context of this specification, we assume that voters have a common belief regarding the competence valence of parties, which is captured in the party-specific constants. However, we further assume that beyond this common belief, specific voter groups might share a common evaluation bias for a party  $k$ . Thus, as described above, to capture potential heterogeneity in a voter's perception of party valence competence, we introduce the vector of socio-demographic characteristics,  $z_v$ . Moreover, we use a direct measurement of a voter's perception of government performance,<sup>3</sup> i.e. voter's approval of the work of specific governmental bodies, e.g. the president. We consider this

<sup>3</sup>Please note that a more flexible way to control for potential heterogeneity corresponds to the estimation of a latent class model. We also undertook latent class estimation of the corresponding voter model for Malawi, which basically implied the same results. Therefore, to keep the analyses simpler, we focus on a standard logit model in this paper.



measure as an indicator for non-policy voting, as the perceived approval of the quality of the work of a governmental body, like the president, is highly dependent on characteristics, which are not related to policy issues. Furthermore, we assume that perceived approval can be strongly influenced by campaign spending and other interest group activities. Finally, we approximate a voter's retrospective voting component using a set of voter-specific indicator variables,  $R_v$ , that corresponds to a voter's retrospective perceptions of the economic well-being realized in Malawi.

Equation (34) allows us to calculate probabilities and marginal effects for each individual party. The derived coefficients will be used to calculate the different indices of government performance and the relative importance of different voting motives.

## **4.1 Data**

Before we present our the data used in the estimation, we first briefly describe the party system of Malawi in the next subsection, as an understanding of the historical development of the country and its party system facilitates the interpretation of the estimation results.

### **4.1.1 The Party System and Elections in Malawi**

Malawi is still a young democracy, with its first free multiparty elections held in 1994. Since 1994, four additional elections took place. During the nineteenth century, Malawi was colonized by the British Empire; until 1964, Malawi was part of the British Commonwealth, when it became independent under the leadership of Dr. Hastings Kamuzu Banda. Banda was the first president of Malawi; he ruled the country with the support of his MCP. In the first multi-party elections in 1994, Bakili Muluzi from the UDF won the majority with 47% of the votes and put an end to the regime of Banda after nearly 30 years. Muluzi succeeded again in the second elections, which occurred five years later. Although by constitution, a two-term limit for presidents exists, Muluzi tried to run for presidential elections a third time. He did not succeed, and was instead forced to choose Bingu Wa Mutharika to become his successor. Mutharika likewise proved to be a very successful leader and won the elections in 2004 and the subsequent elections in 2009. However, Mutharika separated from the United Democratic Front (UDF) shortly after his first electoral success and founded his own party: the Democratic Progressive Party (DPP). To date, the DPP remains very successful in Malawi, holding 114 of the total 160 seats in the national assembly. The opposition is once again led by the Malawi Congress Party (MCP), with 26 seats, and the UDF, with 17 seats. All other parties in Malawi are negligible, gaining only a marginal percentage of votes in the last elections.

Given the relatively short democratic experience in Malawi, the political parties in this country are rather weak (e.g., parties are easily formed and dissolved based on the availability and need of powerful political leaders). Mutharika proved to be a prominent example of this behavior. Nevertheless, three parties (i.e., the MCP, the UDF and the DPP) are currently established as political parties in Malawi. Interestingly, although the political parties appear to be weak, the party identity of Malawian voters appears to be high (i.e., two thirds of the Malawian citizens feel affiliated with a political party). However, the principal reason that people are attached to a political party is not the party itself but the party leader. The Afrobarometer survey demonstrated that while only 50% of respondents trust the DPP as a party, 64% trust Mutharika as the president.

#### 4.1.2 Afrobarometer Voter Survey

After analyzing voting behavior theoretically, the following sections will empirically derive voting behavior in Malawi. A major challenge of estimating probabilistic voter models is the availability of adequate data. For case studies in Africa, the Afrobarometer survey offers such data. Afrobarometer is an independent, nonpartisan research project that measures the social, political, and economic atmosphere in Africa. Afrobarometer surveys have been conducted since 1999, when 12 countries were questioned in a first round. To date, five rounds have been completed, with the last round covering 22 Sub-Saharan African countries. Malawi was part of the survey from the beginning. The data set used in this paper is from the fourth round of the survey, which was conducted in 2008 (Afrobarometer 2008). In round four, 1200 Malawians were interviewed. Using random selection methods and sampling with probability proportionate to population size (PPPS), the sample is a representative cross-section of all citizens of voting age in Malawi. Most of the questionnaires were employed in rural areas (85%), and only 15% were employed in urban areas, which corresponds to the real distribution. The respondents included equal numbers of women and men, with a mean age of 35; the oldest respondent was 88 years old, and the youngest respondent was 18 years old. An evaluation of the educational background of the respondents reveals that 18% of the questioned Malawians have no formal schooling. The majority (43%) had some formal schooling, and approximately 38% completed at least primary school. General census data is confirmed by the Afrobarometer survey. Malawi is one of the poorest countries in the world, listed at rank 171 of 187 in the Human Development Index of 2011. The per capita income was 310 U.S. Dollars in 2010, with 50.7% of the population living below the national poverty line (World Bank 2013a, b).

To analyze voting behavior, the most important variable of the dataset is vote choice. Accordingly, respondents were asked to answer the following question: "If a presidential election were held tomorrow, which party's candidate would you vote for?"

Table 1 shows this variable's distribution compared to the results for the three major parties from the elections in 2009. Compared to the Afrobarometer survey,

**Table 1** Election results

	DPP	MCP	UDF
Afrobarometer (2008)	77.14	8.32	14.53
Presidential election (2009)	66.17	30.49	

Source: Afrobarometer (2008), African Elections Database (2014)

the Democratic Progressive Party (DPP) gained even more votes and won the presidential elections in 2009 with more than two thirds of the vote, although the Malawi Congress Party (MCP) and the United Democratic Front (UDF) formed an electoral alliance. While vote choice will be the dependent variable, the independent variables can be classified as indicators of policy-oriented, retrospective and non-policy-oriented voting, as explained above. Additionally, to address heterogeneity, we included several socioeconomic variables of voters.

In particular, to capture policy-oriented voting, policy distances between the voter and each party for relevant policy issues are used as indicators. Unfortunately, Afrobarometer did not ask for policy positions on specific policy issues. However, Afrobarometer included a set of policy-related statements and asked individual respondents to indicate their degree of agreement or disagreement with the different statements. The following statements are examples of the policy-related statements used in the Afrobarometer survey:

**Statement 1:** Government should be able to ban any organization that goes against its policies

**Statement 2:** We should be able to join any organization, whether or not the government approves of it (Afrobarometer 2008, question Q19)

Overall, we used 12 policy statements (i.e., Q16, Q19, Q20, Q21, Q31, Q32, Q35, Q36, Q37, Q29A–C) and applied a principal component analysis to identify relevant policy issues as underlying factors. Empirically, the conducted factor analysis implied a one factor solution. Based on the factor-loading matrix of different statements, we interpreted high positive factor values as a preference for a strong state (i.e., a more autocratic political leadership of the government); in contrast, low and negative factor values can be interpreted as a preference for a weak state (i.e., a more participatory leadership of the government).<sup>4</sup>

Based on the factor analysis, we calculated individual factor values for each voter, which we interpreted as voters' preferred policy position ( $x_{dv}$ ). To calculate the corresponding party positions ( $\gamma_{vd}$ ), the mean policy position of all voters who voted for a particular party was obtained. This method is known as partisan constituencies and has been used widely by political scientists (e.g., Schofield 2011). Finally, following the classical proximity model of Downs, the distance between the voter's and the party's policy positions were calculated as the quadratic distance between the voter's policy position and the policy position of a given party

<sup>4</sup>Further details on the results of the factor analysis are available from the author on request.

(POL-DIST). We took this distance as our principal indicator of policy-oriented voting.

To measure retrospective voting, we constructed an indicator variable based on the following question from the Afrobarometer questionnaire: “In general, how would you describe: The present economic condition of this country?” Possible answers were: “Very bad,” “Fairly bad,” “Neither good nor bad,” “Fairly good” and “Very good” (Afrobarometer 2008, question Q4A). To construct an indicator of retrospective voting (RETRO), we scaled the answer from 1 = Very bad to 5 = very good. To incorporate non-policy voting into our empirical model, we estimated a party-specific constant (CONST). Moreover, to capture potential heterogeneity in a voter’s perception of party competence, we introduced the following socio-demographic characteristics  $z_v$  as alternative specific variables. First, we included regional dummy variables (NORTH, CENTRAL) for voters living in the northern or central regions of Malawi, respectively; the southern region is used as the default region. Second, we included ethnicity (YAO, LOMWE, CHEWA), gender (GENDER) and living in a rural or urban area (RURAL) as additional dummy variables in our econometric estimations. In particular, YAO, LOMWE, or CHEWA = 1 implies that a voter belongs to the corresponding ethnic group, while gender = 1 indicates a male respondent and rural = 1 indicates a respondent living in a rural area. EDUCATION is measured on an ordinal scale (1 = no formal education – 9 = University completed), and AGE is measured in years. To measure income, the Afrobarometer survey provides data to apply the LPI index (LPI) (Mattes 2008).

Table 2 presents the descriptive statistics for all variables included in the preferred model. High LPI values correspond to higher poverty levels, while low values indicate lower poverty levels. Please note that we included all socioeconomic variables as alternative specific variables, where we take the incumbent party DPP as reference party. Moreover, we use the Afrobarometer question, “Do you approve or disapprove of the way the following people have performed their jobs over the past twelve months, or haven’t you heard enough about them to say: President Bingu wa Mutharika” (Afrobarometer 2008, question Q70A) to obtain a direct measurement of a voter’s general perception of government performance (PRES\_APPR).

## 4.2 Results

### 4.2.1 Goodness of Fit and Model Selection

To further analyze voting behavior in Malawi, we estimated a probabilistic voter model using a mixed conditional logit approach. The results are presented in Table 3. We estimated different specifications. In model 1, we began by using only the party-specific constant and policy distance as explanatory variables. In model 2, we include voters’ evaluation of the current economic condition of Malawi, corresponding to the retrospective voting motive, and in model 3, we

**Table 2** Descriptive statistics

	N	Mean	sd	se	CI-left	CI-right	min	max
POLICY POSITION	805	0.000	0.881	0.031	-0.061	0.061	-1.185	2.676
POL-DIST-DPP	805	0.777	1.018	0.036	0.706	0.847	0	6.959
POL-DIST-MCP	805	0.775	1.052	0.037	0.703	0.848	0	7.157
POL-DIST-UDF	805	0.777	1.092	0.039	0.701	0.852	0	7.373
RETRO	805	2.965	1.253	0.044	2.879	3.052	1	5
PRES_APPR	805	3.429	0.916	0.032	3.365	3.492	1	4
CHEWA	805	0.322	0.467	0.016	0.289	0.354	0	1
YAO	805	0.130	0.337	0.012	0.107	0.154	0	1
CENTRAL	805	0.398	0.490	0.017	0.364	0.431	0	1
NORTH	805	0.145	0.353	0.012	0.121	0.170	0	1
LPI	805	1.318	0.887	0.031	1.257	1.380	0	3.800
GENDER	805	0.471	0.500	0.018	0.436	0.505	0	1
AGE	805	34.584	13.234	0.466	33.670	35.498	18	87
EDUCATION	805	3.612	1.554	0.055	3.505	3.720	1	9

Source: own calculation

included voters' approval of the president as a non-policy voting motive. Finally, in model specifications 4 and 5, we included additional voter characteristics to take potential heterogeneity in voting behavior into account. In particular, in model 4, we include regional dummy variables, as they were a major explanatory factor during past presidential elections. Moreover, in model specification 5, the socio-economic variables ethnicity, gender, education, age, income and rural were included. Please note that we included all of the additional variables that describe specific voter characteristics as alternative specific variables, with the incumbent party DPP as reference party. As demonstrated in Table 3, goodness of fit significantly increases from model 1 to 5, with McFadden  $R^2$  improving from 0.01 in model 1 to nearly 0.3 in model 3. Thus, the party choice of the average Malawian voter is significantly driven by non-policy factors. We interpret the voter-specific constant as party loyalty, which is a more stable perception of party competence. In contrast, the perceived performance of the president is influenced by time-specific shocks, including lobbying activities. Moreover, we identify significant heterogeneity in party loyalty, where party identity is significantly influenced by ethnicity, as well as regional origin and income. In particular, voters from the central region strongly identify with the MCP (see the estimated parameter of 2.422 for MCP-CENTRAL in model 5), while people living in the northern region of Malawi clearly identify with the incumbent party DPP, as indicated by the strongly negative coefficients for both MCP-NORTH and UDF-NORTH. Finally the south represents a stronghold of the UDF, with a high and significant UDF-CONST of 5.657. Furthermore, for the Yao ethnic group, a significant party loyalty for the UDF, which is the former presidential party, can be observed. The MCP is primarily supported by the Chewa tribe, with parameter estimations of 1.404 for UDF-YAO and 0.843 for MCP-CHEWA in model 5 (see Table 3).

**Table 3** Model specifications

	Model 1: Down's Model		Model 2: + Retrospective voting		Model 3: + approval of the president		Model 4: + regional voting		Model 5: + NP-variables		Model 6: optimal model	
	coef	P	coef	P	coef	P	coef	P	coef	P	coef	P
MCP:(INTERCEPT)	-2.235***	0.000	-0.816**	0.007	3.810***	0.000	1.381	0.102	2.175	0.079	1.840	0.055
UDF:(INTERCEPT)	-1.711***	0.000	-0.094	0.700	4.981***	0.000	5.286***	0.000	5.657***	0.000	5.541***	0.000
POL-DIST	-2.734***	0.001	-3.177***	0.000	-2.932**	0.005	-2.139 .	0.052	-1.969 .	0.098	-2.272*	0.049
MCP:RETRO			-0.512***	0.000	-0.330**	0.007	-0.301*	0.035	-0.378*	0.018	-0.355*	0.021
UDF:RETRO			-0.598***	0.000	-0.370***	0.001	-0.276*	0.014	-0.408**	0.002	-0.372**	0.003
MCP:PRES_APPR					-1.553***	0.000	-1.497***	0.000	-1.604***	0.000	-1.534***	0.000
UDF:PRES_APPR					-1.784***	0.000	-1.788***	0.000	-1.806***	0.000	-1.786***	0.000
MCP:NORTH							-15.385	0.994	-15.690	0.993	-15.122	0.994
UDF:NORTH							-2.414**	0.001	-2.071**	0.009	-1.735*	0.021
MCP:CENTRAL							2.991***	0.000	2.224***	0.001	2.422***	0.000
UDF:CENTRAL							-0.923**	0.002	-0.854*	0.022	-0.744*	0.041
MCP:YAO									-0.290	0.701	-0.033	0.964
UDF:YAO									1.404**	0.001	1.603***	0.000
MCP:CHEWA									0.843 .	0.067	1.075*	0.011
UDF:CHEWA									-0.034	0.939	0.121	0.768
MCP:LOMWE									-1.373	0.223		
UDF:LOMWE									-0.477	0.303		
MCP:EDUCATION									-0.087	0.435		
UDF:EDUCATION									0.080	0.472		
MCP:RURAL									0.185	0.703		
UDF:RURAL									0.183	0.639		
MCP:GENDER									-0.298	0.370		
UDF:GENDER									-0.192	0.517		
MCP:AGE									0.023 .	0.074		

UDF:AGE										-0.002	0.877	
MCP:LPI										-0.415*	0.041	-0.314
UDF:LPI										-0.423*	0.024	-0.433*
Log-Likelihood:	-547.04					-389.33				-304.28		-309.79
McFadden R <sup>2</sup>	0.01					0.30				0.45		0.44

Source: own estimation

\*\*\* p < 0.001, \*\*p < 0.01, \*p < 0.05, . p < 0.1

The negative coefficients for MCP-LPI and UDF-LPI in model 5 imply that poor people tend to vote for the DPP with a higher probability than rich people. Other socioeconomic variables (i.e., age, gender and rural) have no significant impact on voting behavior. Therefore, we excluded these insignificant variables to improve the efficiency of our estimation. Accordingly, model 6 corresponds to our preferred model specification, which has the highest statistical fit when compared to all other model specifications (see the log-likelihood values presented in Table 3).

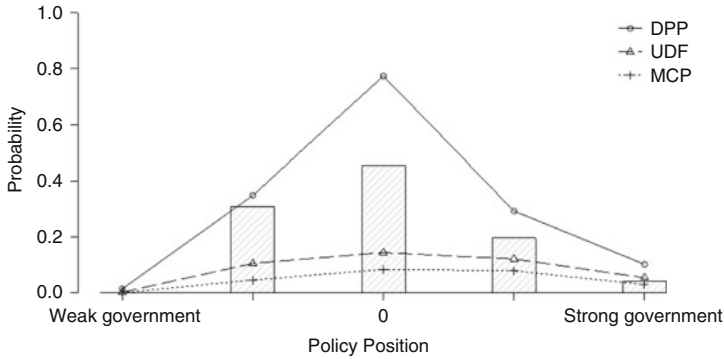
#### 4.2.2 Voting Behavior in Malawi

It follows directly from our estimation results that all voting motives are significant determinants of the party choices of Malawian voters. However, the importance of different voting motives varies. To evaluate the absolute importance of non-policy voting, we approximated the marginal effect by setting the weight of the voting motive equal to zero. Neglecting non-policy voting ( $\alpha_v = 0$ ) implies that the vote shares of parties would significantly change. Interestingly, Malawian voters feel strongly affiliated to their governmental party, although the party only exists for 10 years compared to the well established parties UDC and MCP that exist for 22 and 55 years respectively. Accordingly, ignoring non-policy voting implies that the vote shares of the UDF and the MCP increase by 6% and 13%, while the vote share of the governmental party (i.e., DPP) would decrease by 18% points to just 59%. Economic voting (i.e., retrospective voting based on voters' perception of economic development) has only a moderate impact on election outcomes. Assuming that voters' perception of the economic development under the government increases from 'very bad' to 'very good' implies an increase of the vote share of the DPP by 14% points; the corresponding vote shares of the UDF and the MCP decrease by 8% and 6%, respectively. Thus, in contrast to the findings of Bratton et al. (2011), our estimation results for Malawi imply only a moderate, though certainly significant, importance of retrospective economic voting.

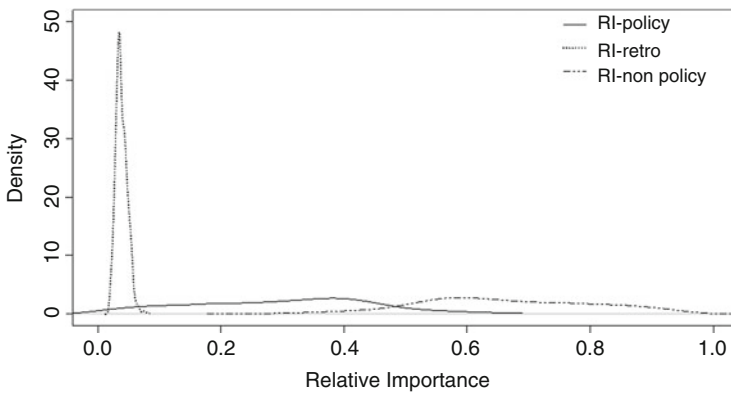
In addition to party identity and economic voting, policy-oriented voting is also an important voting motive of the Malawian voter. At a first glance, this finding appears to be a paradox due to the fact that the policy distances have a rather low explanatory power when compared to other non-policy indicator variables (see Table 3). Competing parties tend to adopt the same party platforms; thus, from the viewpoint of the voter, parties hardly differ in their policy-oriented utility component. This observation underlies the relatively low explanatory power of policy-oriented voting. However, the importance of policy voting is nicely demonstrated by Fig. 1. Assuming that the governmental party shifts its present moderate ideological policy position of 0.038 to an extreme position favoring an extremely weak (-3) or strong (+3) state implies that political support for the DPP decreases from 77% to nearly 0% and only 20%, respectively.

Interestingly, an extreme position favoring a strong state would be less harmful for the DPP than an extreme position favoring a weak state (i.e., an extreme participatory policy style). Regardless, these simulation results demonstrate that





**Fig. 1** Importance of policy-oriented voting in the 2008 election in Malawi. Source: Authors



**Fig. 2** Relative importance of different voting motives in the 2008 election in Malawi. Source: Authors

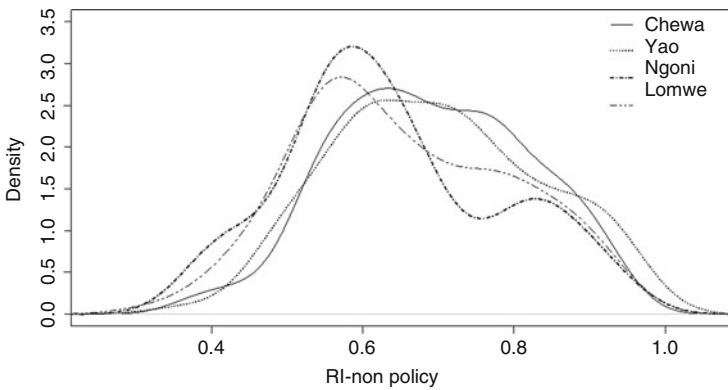
Malawian voters discipline support-seeking parties to adopt ideological policy positions that correspond to the preferences of the median voter, as predicted by the Downsian theory of voting.

Furthermore, we calculated the relative marginal effects ( $RI^P, RI^{NP}, RI^R$ ) based on our preferred model specification (i.e., model 6). In Fig. 2, we present the Kernel distribution of the relative marginal effects of different voting motives. The motives differ strongly in their relative importance. While retrospective voting always has a share lower than 10%, the relative importance of policy and non-policy voting is distributed far more widely, which shows that voting behavior is heterogeneous within a population. Taking the mean relative importance shows that non-policy voting is most important with 66%, followed by policy voting (30%) and retrospective voting with only 4%.

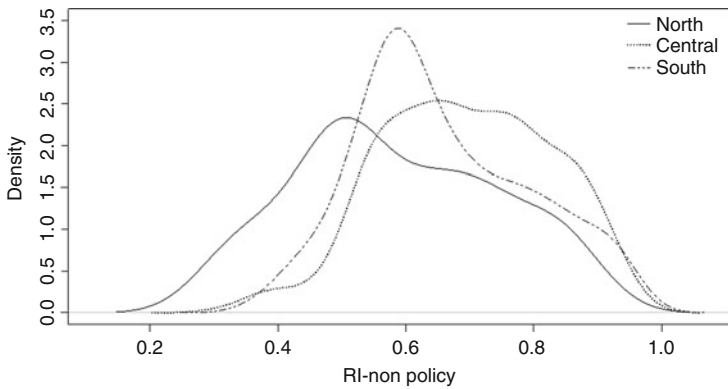
Finally, as described above, the estimation results indicate that significant heterogeneity in voting behavior exists, where in particular, voters' perception of

party competence varies significantly with ethnicity, regional origin and income. Moreover, the estimation results imply that the importance of non-policy voting, varies significantly across ethnic groups and regions. As demonstrated in Figs. 3 and 4, non-policy voting is relatively important for the northern region and plays a comparatively minor role for the Yao and Chewa Ethnic Tribes.

However, despite the identified heterogeneity, for most Malawian voters, the second most important voting motive corresponds to policy-oriented voting. This result is remarkable, as most voter studies on African countries that are in the published literature highlight the fact that policies play only a minor role in the party preferences and electoral choices of African voters (Ferree 2004; Hoffman and Long 2013).



**Fig. 3** Relative importance of non-policy voting according to ethnicity. Source: Authors



**Fig. 4** Relative importance of non-policy voting according to region. Source: Authors

However, at the methodological level, our study differs from existing approaches, as we are estimating a probabilistic voter model by applying a conditional logit specification that takes ideological policy distances between individual voters and parties into account as party-specific attributes. Therefore, future work that empirically tests the extent to which the importance of policy-oriented voting also applies to other African countries or stands as a specific characteristic of the Malawian voter is of interest.

### 4.2.3 Voter Behavior and Government Performance

We first analyze government capture. Given our expositions above, government capture results from the different average voting weights of different social groups. Individual voting weights are calculated according to Eq. (24):

$$\hat{w}_{vG} = P_{vG}(1 - P_{vG}) \left[ \beta_v + \delta_{vG} - \sum_{k \neq G} \hat{s}_{vk} \delta_{vk} \right] \tag{37}$$

$$w_{vG} = \frac{\hat{w}_{vG}}{\sum_v \hat{w}_{vG}} \approx \frac{P_{vG}(1 - P_{vG})}{\sum_v P_{vG}(1 - P_{vG})} \tag{38}$$

In Eq. (37)  $s_{vk}$  denotes the estimated relative vote share of party  $k$ . In Fig. 5, we present the relative distribution of the calculated voting weights. As indicated by the Lorenz curve in Fig. 5, the effective voting weights are rather unequally distributed, with a corresponding Gini-coefficient of 0.461.<sup>5</sup>

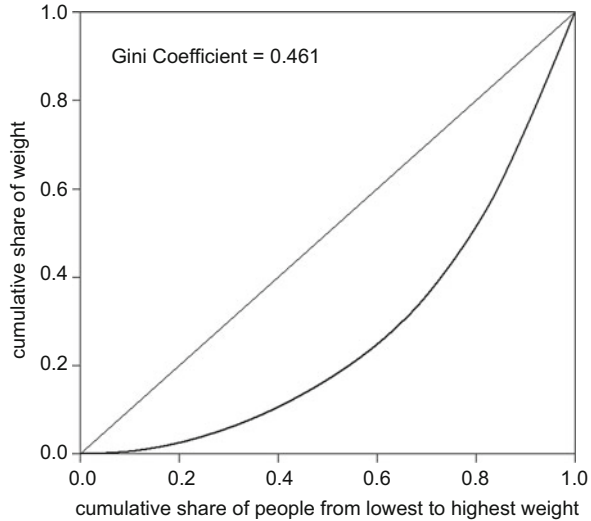
Given the 805 individual voters in our survey, the average voting weight is 1/805. It follows from the approximation of the individual voting weights in Eq. (38) that swing voters (i.e., voters with a probability to reelect the governmental party that is close to 0.5) have a particularly high voting weight (Fig. 5).

Thus, the higher the share of swing voters in a specific social group, the more government is captured by this social group (i.e., the higher the incentives for a government seeking reelection to deliver policies and policy outcomes that benefit social groups with a high share of swing voters). However, a determination of whether voting weights vary systematically across voter groups is also of interest, e.g., in the literature, it is often assumed that poor people are less represented in the political process than rich people or that rural populations are less represented than urban voters (Keefer and Khemani 2005; Bardhan and Mookherjee 2002). In Fig. 6, we present the calculated capture indices for different social groups. The government of Malawi is significantly captured by the Central region at the expense of the Northern region and the South. Moreover, the Yao and Chewa ethnic tribes are also

---

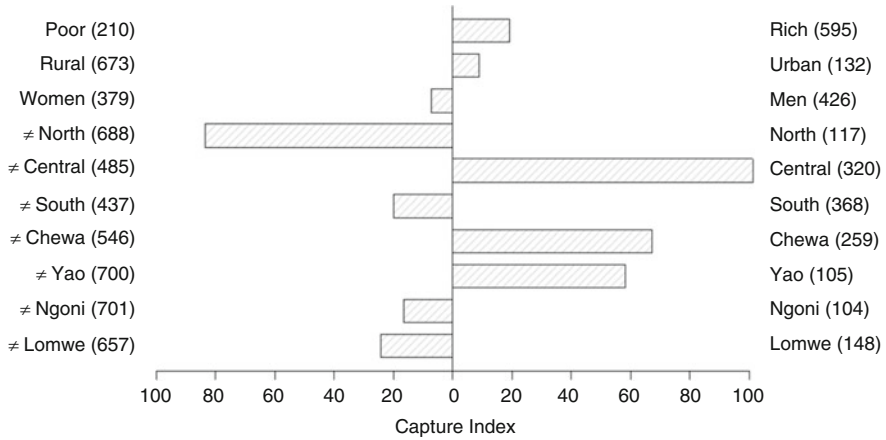
<sup>5</sup>The Gini-coefficient measures the relative share of the area between the Lorenz curve and the angle bisecting plane and the total area under the angle bisecting plane. The latter measurement corresponds to a perfect equal distribution. Accordingly, a Gini-coefficient of 1 indicates a maximally unequal distribution, while a Gini coefficient of 0 indicates a perfect equal distribution.

**Fig. 5** Distribution of effective voting weights in the 2008 elections in Malawi. Source: Authors



capturing the government significantly. In contrast, there exists only moderate capture of the government by the rich voters compared to the poor, as indicated by a capture index of 1.19, i.e., compared to a rich voter, the average weight of a poor voter is 19% lower. Interestingly, political representation appears not to be biased against neither the rural population nor women. In detail, comparing the political weight of the rural and urban population based on the calculated capture index of 1.09 implies that political representation of a rural voter is only slightly lower when compared to an urban voter. Analogously, comparing the average political weights of men and women a higher weight for women results given a capture index of 0.93. The results are quite surprising as it is usually assumed that in developing countries both women and rural citizen, respectively, are heavily underrepresented in the political process.

Furthermore, as can be seen from Fig. 6 political representation varies significantly across ethnic and regional groups, where the Chewa and Yao tribes as well as the central region seem to be politically overrepresented, while the Northern region of Malawi seems to be politically underrepresented when compared to the average Malawian Voter. Thus, at first glance, our own results appear to confirm the hypothesis that ethno-regional party identity determines the vote choice in multi-ethnic and nascent African democracies. However, the resulting impact of specific ethno-regional voting patterns on government incentives and on the political representation of social groups is far more complex. For example, in the northern region, voters strongly identify with the governmental party (i.e., DPP), while in the central region, voters significantly identify with the MCP and in the southern region, voters identify with the UDF. But, while party identity with the MCP in the central region is compensated by a strong positive perception of the performance of the president, resulting in a large number of swing voters in the central region, the same positive perception increases voters' commitment in favor of the



**Fig. 6** Government capture by different social groups based on the 2008 elections in Malawi. Source: Authors

DPP and lowers electoral competition and government incentives to deliver policies benefiting Northern voters. Accordingly, the average voter weight is rather low in the northern region and high in the central region. Moreover, please note that a significant variation in voter behavior and in individual voting weights within regions and tribes can still be observed in Figs. 3 and 4 above.

While government capture corresponds to different political weights across social groups, government accountability measures the degree to which electoral competition implies that governmental policies correspond to the needs and desire of voters as a whole or the extent to which these policies are determined by lobbying activities or the intrinsic policy preferences of politicians. Based on our estimation results for our preferred model specification (i.e., model 6), we calculated an accountability index  $GA_1 = 0.39$ , which indicates that the total political weight of lobbying groups is 61% of the sum of the political weight of all voters and lobbying groups. Hence, in Malawi lobbying plays a major role as a political mechanism for communicating society’s interest to politicians. This figure matches with results of the empirical policy network study we conducted in Malawi, where politicians indicate that when formulating their political position, they weight external positions communicated by interest groups between 5 and 90% when compared to their own intrinsic position, with an average weight of the external positions of lobbying groups of approximately 50% (see Chapter “A Network Based Approach to Evaluate Participatory Policy Processes: An Application to CAADP in Malawi”). However, compared to industrialized countries relative importance of lobbying appears to be significantly higher in Malawi, i.e. for EU countries policy network studies of Pappi and Henning reveal an average relative weight of the external positions of lobbying groups of approximately 35% (Pappi et al. 1995; Pappi and Henning 1999; Henning 2009). Thus, the results show that although Malawi has been a democracy for quite some time, the election process is

not the most important mechanism in the political process, but interest groups and lobbying activities have the strongest influence. However, to measure the leeway of the government to select policies that do not correspond to the will of the electoral majority, we additionally calculate the accountability index  $GA_3$ . The latter is identified as the maximal divergence of the governmental policy position that still guarantees that the government will be reelected (i.e., achieve a vote share higher than 50%). Simulation analyses of the political response function of the governmental party imply that a majority is sustained over the interval  $[-1.003, 0.8395]$ , where the empirically observed policy position of the DPP is 0.038. Hence, given a maximal policy range of 6, the government can adapt its policy position between approximately  $-17\%$  and  $+13\%$  without losing the electoral majority. Hence, conclusion of a low accountability of the government vis-à-vis its electorate drawn from the calculated  $GA_1$  index seems at least to be moderated based on the index  $GA_3$ .

#### 4.2.4 Relating Government Performance and Voting Behavior

While we related governmental performance with voting behavior theoretically in the beginning of the chapter, we did not yet provide quantitative empirical evidence for our theoretical considerations. Therefore, we computed non-parametric regression analyses by regressing the normalized voting weight on the total sub-utility that voters derive from non-policy indicators  $V^{NP}$ . The latter factor results as the sum of a voter's party-specific constant and the sub-utility derived from the voter's approval of the government. As demonstrated in Fig. 7, a curve-linear relation exists between non-policy voting and voting weight. In particular, based on Eq. (38), it follows that the voting weight roughly corresponds to the term  $P_{vG}(1 - P_{vG})$  (i.e., the more a voter is committed in favor of or against a party at the LNE, the lower is her effective voting weight). Further, as long as the LNE corresponds to a convergent equilibrium in party platforms (i.e., all parties have the

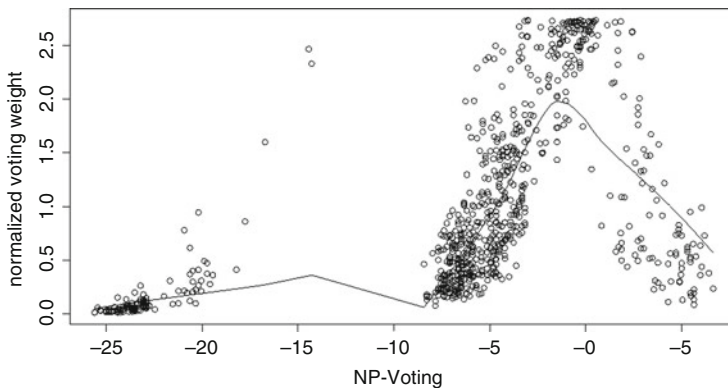


Fig. 7 Non-policy voting and voting weights. Source: Authors

same or very similar policy positions), the effective voting weights are solely determined by non-policy voting. Hence, the larger the differences between the non-policy utility components among parties, the more a voter is committed towards a specific party and the lower is c.p. her voting weight. Please note that the party to which a voter is committed is unimportant (i.e., a large absolute difference in the non-policy utility component among parties implies a high or low probability to vote for the governmental party). Hence, in both cases, a low value for the term  $P_{vG}(1 - P_{vG})$  and a low voting weight result. Given the logistic response function, these results make sense, as a voter's local electoral response to political favors is higher when she assesses lower utility differences among political parties.

Beyond lobbying, politicians might also follow their intrinsic policy positions; we capture the relative importance of intrinsic policy preferences using our accountability index  $GA_2$ . However, the index  $GA_2$  cannot be calculated based on our empirical estimation because we have no data on politicians' intrinsic policy preferences, parameter  $\vartheta$ . However, we can estimate the extent to which the relative weight of intrinsic policy preferences would decrease if we assume that voters do not engage in non-policy voting. To this end, we recalculate the parameters  $\alpha_G, \beta_G$  and  $\delta_G$ , assuming party identity and approval voting is zero for all voters and divide the sum of these recalculated parameters by the sum of the originally estimated parameters. This ratio corresponds to the percentage of accountability that is achieved in comparison to the optimal accountability that would be achieved if all voters based their vote choice on policy indicators and observed economic performance. In the Malawi case, the ratio of actual to optimal accountability is 1.52, indicating that based on actual voting behavior the relative political weight of intrinsic policy preferences of the government is 1.52 times higher when compared to the relative political weight of government's intrinsic preferences induced assuming a perfectly policy-oriented voting behavior. However, without a further cross-country comparison including established democratic systems this accountability measure is hard to interpret. We leave this interesting topic for future research.

## 5 Conclusion and Outlook for Future Work

This paper integrates theoretical political economy approaches that explain the impact of voter behavior on government performance. We use advanced empirical voter studies to derive and test hypotheses on how the relative importance of different voting motives for different social groups induces electoral incentives for politicians, to serve the needs and desires of their electorate. Based on our theoretical model, we derive different indices of government performance, namely government capture and accountability that measure government incentives in political equilibrium to implement policies that serve special interest or pure self-interest at the expense of the general public.

In the empirical part of this paper, we estimate a probabilistic voting model by applying a mixed conditional logit (MCL) approach using Afrobarometer data for Malawi. Based on the estimated model, we calculate the theoretically derived indices of government accountability and capture. Moreover, we derive indices that measure the relative importance of different policy and non policy oriented voting motives for the electorate as a whole and several socioeconomic groups. Further, we test how the relative importance of different voting motives is related to government performance (i.e., accountability and capture). The principal empirical results are:

1. Beyond party identity Malawian voters apply different policy and non-policy indicators to evaluate parties and candidates, while retrospective voting only plays a minor role.
2. Voter behavior, i.e., the relative importance of non-policy versus policy oriented voting varies significantly across ethnic and regional groups. Accordingly, the estimated voter models imply that government is strongly captured by specific regional and ethnic groups, for which electoral choices are primarily determined by policy-oriented voting and far less by non-policy voting when compared to the average Malawian voter. In particular, the Central region and the Chewa and Yao ethnic groups are able to capture government at the expense of the Northern region and the Ngoni and Lomwe ethnic groups. However, contradicting common assumptions in the literature (Keefer and Khemani 2005; Bardhan and Mookherjee 2002), our estimation results imply that government is not captured by specific socioeconomic groups. Thus, neither the rich nor the urban voters and vice-versa neither the poor nor the rural voters are able to capture government significantly. Interestingly, our estimation results further imply that also Malawian women are not underrepresented in the political process when compared to men.
3. Government accountability vis-a-vis the Malawian voter is strongly limited by lobbying activities. However, this result is moderated by our third accountability index, i.e., assuming constant campaign spending the Malawi government can only shift its current policy by roughly 15% within the feasible policy space without losing its majority.
4. We provide quantitative empirical evidence for our central theoretical hypothesis that government performance is determined by the relative importance of non-policy voting, where applying a non-parametric regression we could perfectly explain observed individual voting weights as a nonlinear function of the sub-utility a voter derives from non-policy indicators.

Finally, the following qualifications of our main conclusion are necessary:

5. Our results clearly imply that the less voters rely on non-policy indicators and the more they base their electoral choices on party policy platforms and evaluate the competence of the government based on observed economic development, the more electoral competition induces incentives for the government to implement policies that correspond to the policy preferences of the majority of the society. However, this definition of government performance in terms of low



governmental capture and high government accountability does not necessarily imply that the government implements the most efficient policies. The latter conclusion results from the fact that voters' policy preferences might be biased. For instance, Beilhartz and Gersbach (2004), Bischoff and Siemers (2011) and Caplan (2007) emphasize the role of biased voter beliefs about policy impacts as a main determinant of inefficient policy choices. Voter beliefs are defined as agents' simplified mental models to approximate the complex true relation between policy instruments and induced policy outcomes. The work of Caplan is highly recognized in the public choice literature, as he collects an impressive amount of evidence for persistently biased voter beliefs. Based on his empirical findings, Caplan draws the rather pessimistic conclusion that democratic mechanisms of preference aggregation naturally lead to the choice of inefficient policies. Interestingly, taking biased voter beliefs into account, a high importance of lobbying in combination with governmental leadership that is driven by its own intrinsic political vision might induce more efficient policy choices while simultaneously decreasing governmental performance, as defined in terms of capture and accountability. Hence, the analysis of voter beliefs is an important topic of our future research.

## References

- Adams, J., B. Grofman, and S. Merrill. 2005. *A Unified Theory of Party Competition*. Cambridge: Cambridge University Press.
- African Elections Database. 2014. *Election Results Malawi Database*. <http://africanelections.tripod.com/mw.html>. Accessed 8 Jan 2014.
- Afrobarometer. 2008. <http://afrobarometer.org/>. Accessed May 2016.
- Bardhan, P., and D. Mookherjee. 2002. *Relative Capture of Local and Central Governments: An Essay in the Political Economy of Decentralization*. Working Paper C99-109. Center of International and Development Economics Research.
- . 2006. Decentralisation and Accountability in Infrastructure Delivery in Developing Countries. *The Economic Journal* 116: 101–127.
- Baron, D.P. 1994. Electoral Competition with Informed and Uniformed Voters. *American Political Science Review* 88: 33–47.
- Beilhartz, H.-J., and H. Gersbach. 2004. *General Equilibrium Effects and Voting into a Crisis*. CEPR Discussion Paper 4454. London: Centre for Economic Policy Research.
- Besley, T., and R. Burgess. 2003. The Political Economy of Government Responsiveness: Theory and Evidence from India. *Quarterly Journal of Economics* 117 (4): 1415–1451.
- Bischoff, I., and L.-H.R. Siemers. 2011. Biased Beliefs and Retrospective Voting: Why Democracies Choose Mediocre Policies. *Public Choice* 156: 163–180.
- Block, S.A. 2002. Political Business Cycles, Democratization, and Economic Reform: The Case of Africa. *Journal of Development Economics* 67 (1): 205–228.
- Bratton, M., R. Bhavnani, and T.-H. Chen. 2011. *Voting Intentions in Africa: Ethnic, Economic or Partisan?* Working Paper No. 127. South Africa: Afrobarometer.
- Campbell, A., P.E. Converse, W.E. Miller, and D.E. Stokes. 1960. *The American Voter*. New York: Wiley.

- Caplan, B. 2007. *The Myth of the Rational Voter—Why Democracies Choose Bad Politics*. Princeton, NJ: Princeton University Press.
- Davis, O., H.J. Melvin, and P.C. Ordeshook. 1970. An Expository Development of a Mathematical Model of the Electoral Process. *American Political Science Review* 64: 426–448.
- Dollar, D., and W. Easterly. 1999. The Search for the Key: Aid, Investment and Policies in Africa. *Journal of African Economies* 8 (4): 546–577.
- Downs, A. 1957a. *An Economic Theory of Democracy*. New York: Harper and Brothers.
- . 1957b. An Economic Theory of Political Action in a Democracy. *Journal of Political Economy* 65 (2): 135–150.
- Enelow, J.M., and M.J. Hinich. 1984. *The Spatial Theory of Voting: An Introduction*. New York: Cambridge University Press.
- Ferree, K. 2004. *The Micro-Foundations of Ethnic Voting: Evidence from South Africa*. Afrobarometer Working Papers 40.
- Ferree, K.E., and J. Horowitz. 2010. Ties that Bind? The Rise and Decline of Ethno-Regional Partisanship in Malawi, 1994–2009. *Democratization* 17: 534–563.
- Fiorina, M., ed. 1981. *Retrospective Voting in American National Elections*. New Haven: Yale University Press.
- Gazdar, H. 2000. *State, Community and Universal Education: A Political Economy of Public Schooling in Rural Pakistan*. London School of Economics: Asia Research Centre.
- Glaeser, E. L., and A. Shleifer. 2002. *The Curley Effect*. NBER Working Paper 8942. Cambridge: National Bureau of Economics Research.
- Glewwe, P., and H. Jacoby. 1994. Student Achievement and Schooling Choice in Low-income Countries: Evidence from Ghana. *Journal of Human Resources* 29 (3): 843–864.
- Grossman, G.M., and E. Helpman. 1996. Electoral Competition and Special Interest Politics. *Review of Economic Studies* 63 (2): 265–286.
- Henning, C.H.C.A. 2009. Networks of Power in the CAP System of the EU-15 and EU-27. *Journal of Public Policy* 29: 153–177.
- Hoffman, B.D., and J.D. Long. 2013. Parties, Ethnicity, and Voting in African Elections. *Comparative Politics* 45: 127–146.
- Horowitz, D. 1985. *Ethnic Groups in Conflict*. Berkeley, CA: University of California Press.
- Katz, J.N., and G. Katz. 2009. *Reassessing the Link between Voter Heterogeneity and Political Accountability: A Latent Class Regression Model of Economic Voting*. Paper presented at the Poster Session of the 26th Annual Summer Meeting of the Society for Political Methodology.
- Keefer, P. 2002a. Clientelism, Credibility and Democracy. *Journal of Law, Economics and Organization* 24: 371–406.
- . 2002b. *The Political Economy of Public Spending Decisions in the Dominican Republic: Credibility, Clientelism and Political Institutions*. Report prepared for the Public Expenditure and Institutional Review, the Dominican Republic. Washington, DC: World Bank.
- Keefer, P., and S. Khemani. 2005. Democracy, Public Expenditures, and the Poor: Understanding Political Incentives for Providing Public Services. *The World Bank Research Observer* 20 (1): 1–27.
- Khemani, S. 2004. Political Cycles in a Developing Economy: Effect of Elections in the Indian States. *Journal of Development Economics* 73 (1): 125–154.
- Lazarsfeld, P., B. Berelson, and H. Gaudet. 1968. *The People's Choice. How the Voter Makes Up His Mind in a Presidential Campaign*. 3rd ed. New York: Columbia University Press.
- Lipset, S.M., and S. Rokkan. 1967. *Party Systems and Voter Alignments: Cross-national Perspectives*. New York: Free Press.
- Magee, S.P., W.A. Brock, and L. Young. 1989. *Black Hole Tariffs and Endogenous Policy Theory: Political Economy in General Equilibrium*. New York: Cambridge University Press.
- Mani, A., and S. Mukand. 2002. *Democracy, Visibility and Public Good Provision*. Mimeo. Williams College: Williamstown.

- Mattes, R. 2008. *The Material and Political Bases of Lived Poverty in Africa: Insights from the Afrobarometer*. CSSR Working Paper No. 216. Centre for Social Science Research, University of Cape Town.
- McFadden, D., ed. 1974. The Measurement of Urban Travel Demand. *Journal of Public Economics* 3: 303–328.
- Miller, W.E., and J.M. Shanks. 1996. *The New American Voter*. Cambridge, MA: Harvard University Press.
- Pappi, F.U., T. König, and D. Knoke. 1995. *Entscheidungsprozesse in der Arbeits- und Sozialpolitik*. Frankfurt. Campus: New York.
- Pappi, F.U., and H.C.A. Henning. 1999. The Organization of Influence on EC's Common Agricultural Policy: A Network Approach. *European Journal of Political Research* 36: 257–281.
- Persson, T., and G. Tabellini. 2000. *Political Economics—Explaining Economic Policy*. Cambridge: MIT Press.
- Sanmartin, M. 2001. Linearity of the Return to Education and Self-Selection. *Applied Economics* 33 (1): 133–142.
- Schofield, N. 2001. In *Generic Existence of Political Equilibrium*, ed. M. Lassonde. Heidelberg: Physica.
- . 2007. The Mean Voter Theorem: Necessary and Sufficient Conditions for Convergent Equilibrium. *Review of Economic Studies* 74: 965–980.
- . 2011. Leaders, Voters and Activists in the Elections in Great Britain 2005 and 2010. *Electoral Studies* 30: 484–498.
- Schuknecht, L. 2000. Fiscal Policy Cycles and Public Expenditure in Developing Countries. *Public Choice* 102 (1–2): 113–128.
- Shi, M., and J. Svensson. 2000. *Political Budget Cycles: Do They Differ between Developed and Developing Countries?* Washington, DC: World Bank, Development Research Group.
- World Bank. 1998. *A Framework for Civil Service Reform in Pakistan*. Technical Report, Washington, DC: World Bank, Poverty Reduction and Economic Management, South Asia Region.
- . 2001. *Nepal: Priorities and Strategies for Education Reform*. Technical Report, Washington, DC: World Bank, Human Development Unit, South Asia Region.
- . 2011. *Participation at Project, Program and Policy Level*. Washington, DC: World Bank.
- . 2013a. *Poverty Headcount Ratio at National Poverty Line*. Data retrieved November 15, 2013, from World DataBank: World Development Indicators database.
- . 2013b. *GNI Per Capita, Atlas Method*. Data retrieved November 15, 2013, from World DataBank: World Development Indicators database.

**Christian Henning** is professor and chair of agricultural economics, University of Kiel (Germany). He studied economics, agricultural economics, sociology, political science and mathematics. He earned a PhD in economics, in agricultural economics and in political science. His main areas of specialization are applied political economy and applied economic modelling of agricultural policies. To date he has published five books and various articles in refereed journals including *PLoS ONE*, *American Journal of Agricultural Economics*, *European Review of Agricultural Economics*, *Journal of Public Policy*, *Journal of Mathematical Sociology* and *Journal of Theoretical Politics*.

**Laura Seide** works as a commodity trader at Cargill Germany. She studied agricultural economics and earned a PhD in agricultural economics at the University of Kiel (Germany). Her main areas of specialization are Voting Behaviour in Developing Countries, Evaluation of Rural Development Policies and Social Capital and Political Network Analysis.

**Svetlana Petri** is a senior researcher in agricultural policy department of agricultural economics, University of Kiel (Germany). She studied agricultural economics and mathematics. She earned a PhD in agricultural economics. Her main research interest is probabilistic election models and modelling of capture and accountability of local and central Governments.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

