ETHNIC COALITIONS AND THE LOGIC OF POLITICAL SURVIVAL IN AUTHORITARIAN REGIMES

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ABSTRACT. Excluding ethnic groups from power increases the risk of civil conflict. But why do authoritarian governments exclude ethnic groups in the first place if this jeopardizes regime survival? We argue that within autocracies an important answer to patterns of ethnic exclusion can be found in ethnic coalition-formation. Ruling ethnic groups have incentives to exclude groups that are more powerful than themselves as these groups cannot credibly commit to remaining loyal to the ruling group. For the same reason, potential coalition partners avoid joining coalitions with much stronger ruling groups. This mutual commitment problem leads to power-balanced ethnic coalitions. However, authoritarian regimes with institutions that mitigate credible commitment problems facilitate the formation of coalitions that are less balanced in power. We test our arguments on ethnic coalition-formation in autocracies, using data on ethnic groups and their power status from the Ethnic Power Relations data set. We demonstrate that in autocracies, the ruling ethnic group is more likely to form coalitions that balance population sizes among all coalition partners. We also find that different types of autocratic institutions condition the extent to which balancing exists in authoritarian ethnic coalitions.

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Introduction

Current research provides increasing theoretical and empirical evidence that the exclusion of ethnic groups increases the risk of armed civil conflict (Cederman, Wimmer and Min, 2010; Cederman, Weidmann and Gleditsch, 2011). This poses an important puzzle: Why do governments exclude ethnic groups in the first place if this increases the risk of a challenge to regime survival? We argue that in autocracies an important answer to patterns of ethnic exclusion can be found in ethnic coalition-formation. This article extends existing insights to ethnic coalition formation (Bormann, 2014; Roessler and Ohls, 2018; Roessler, 2016) by demonstrating that different types of institutions condition the extent to which balancing exists in authoritarian ethnic coalitions. We also find that balancing occurs among relatively small ethnic groups in ruling ethnic coalitions, and is not restricted to larger ethnic groups as outlined in the existing literature (Roessler, 2016).

There are many reasons to expect that ruling ethnic groups might prefer forming coalitions with other ethnic groups. This is most explicitly laid out by Roessler (2016), who argues that the inclusion into the ruling coalition is most likely, when a group poses an immediate threat to the government. In this case, the ruling ethnic group accepts the long-term risk of a coup d'etat over the short-term risk of civil war. In addition, larger coalitions can deter challenges by outside groups attempting to overthrow the government. At the same time, large cabinets have been shown to be more resilient to coups, arguably as staging a coup requires winning over larger parts of the coalition and coordination amongst coalition members is difficult (Arriola, 2009; Boix and Svolik, 2013). Furthermore, any ethnic group that is a potential coalition partner should prefer being included into a government coalition over being excluded from power as ethnic inclusion often comes with spoils not only to

¹Bormann (2014) argues and finds that larger ethnic coalitions are more likely to form as leaders are uncertain about the size of their own group's following and those of others, but want to be sure to defend against outside challenges.

government officials but also their co-ethnics more broadly (e.g. Franck and Rainer, 2012; Hodler and Raschky, 2014). Yet, ethnic exclusion is pervasive. In more than two thirds of the countries around the world the government excludes two or more ethnic groups at least at some point between 1946 and 2013 from power. This type of exclusion is often a longstanding practice and 83 per cent of all country years in that period see the exclusion of two or more ethnic groups².

Generalizing existing theoretical arguments about power-balancing in autocratic regimes (Roessler, 2016), we argue that a double commitment problem constrains the ability of otherwise mutually beneficial ethnic coalitions to form in authoritarian states. On the one hand, ruling ethnic groups have incentives to exclude ethnic groups that are more powerful than themselves as these groups cannot credibly commit to remain loyal to the ruling group. On the other hand, ethnic groups that are potential coalition partners have no incentive to join the coalition as the ruling group cannot commit to existing agreements if it is stronger than its coalition partners. This mutual commitment problem makes it difficult for ruling ethnic groups to include other ethnic groups that are dissimilar in power. Our argument focuses on autocratic regimes where, in contrast to democracies, coalitions are not shaped by elections and institutional rules but are determined purely by the political elite (Acemoglu, Egorov and Sonin, 2008; Magaloni, 2008; Svolik, 2009, 2012).

Previous work on authoritarian regimes considers the incentives for potential coalition partners to join a coalition and argues that coalition partners require a sufficient amount of power in order to maintain a credible threat against the ruler (Magaloni, 2008; Svolik, 2009; Boix and Svolik, 2013). Being in a position of strength vis-a-vis the ruler allows political actors to join the ruling coalition despite limited institutional guarantees in autocratic states. We add to the argument that the ruler also has little interest in allowing actors to enter the ruling coalition that far exceed her power as those groups have incentives to stage coups. The

²Based on the Ethnic Power Relations (EPR) data version 2014 (Cederman, Wimmer and Min, 2010; Vogt et al., 2015).

coalition choice is crucial in authoritarian regimes as coalition members can pose a direct threat to the longevity of leaders. This is emphasized by Svolik (2009), showing that most authoritarian leaders (about 65%) are ousted by insiders through coup d'états.

At the same time, even in autocratic states, institutional arrangements can alleviate less powerful coalition partners' concerns of credible commitment. Some types of authoritarian states are less suited to facilitate commitment amongst ethnic groups in a government coalition than others. At one extreme, personalist regimes offer no guarantees to coalition partners as the leader of the ruling group can make decisions with few constraints (Geddes, 1999). On the other hand, in systems with dominant parties the party offers potential challengers credible opportunities for office and access to the spoils of government in the future (Magaloni, 2008). We argue that authoritarian regimes with dominant parties help overcome the mutual commitment problem that usually prevents ruling ethnic groups from forming coalitions between groups that are dissimilar in power.

We focus on power struggles between ethnic groups because in many states throughout the world, political life and government is organized around politically relevant ethnic groups and government coalitions are conditional on ethnic politics (Bates, 2008; Berman, 1998; Easterly and Levine, 1997; Padró i Miquel, 2007; Posner, 2005; van de Walle, 2003). Ethnic competition is an important dimension of government-formation in many authoritarian states³. We believe that coalition dynamics help to explain why governments exclude ethnic groups despite the increased risk of conflict (Cederman, Wimmer and Min, 2010; Cederman, Weidmann and Gleditsch, 2011). But the focus on ethnic groups is not only helpful in shedding light on ethnic inclusion and exclusion and the role of institutional structures in facilitating ethnic powersharing arrangements. Analyzing the role of autocratic institutions

³Extensive work on ethnic power-sharing can be seen as a special case of ethnic coalition-formation, but it is usually not theoretically conceptualized from a coalition perspective (e.g. Rothchild and Hartzell, 1999; Lustick, Miodownik and Eidelson, 2004; Rothchild and Roeder, 2005; Elkins and Sides, 2007; Bakke, 2015).

in the context of ethnic coalitions also helps understand the logic of coalition-building in autocratic regimes more generally.

Our argument starts with a similar conjecture like Roessler and Ohls (2018)'s recent argument on ethnic power-sharing in weak states that lack enforcing institutions. Here, a ruling group only shares power with rival groups if they are able to threaten costly civil war. At the same time, only ruling groups that are strong enough to threaten civil war themselves are able to share power with other groups at all. The capacity to threaten a rival with costly civil war thus facilitates credible commitment between groups sharing power. The authors acknowledge that ruling groups may want to include groups that are dissimilar in power to avoid challenges by them altogether but are unable to do so due to commitment problems. They find support for this argument in an analysis of strength differentials in dyads of ruling groups and potential coalition partners in sub-Saharan Africa.

While our argument is similar in that we also expect that a balance of power within government coalitions is necessary for all coalition partners to credibly commit not to stage a coup in the absence of institutions, it differs in two ways. Firstly, we do not assume that the only reason to include an ethnic group in a coalition is to avoid armed conflict with the group in question. Instead, we argue that the ruling ethnic group also has an incentive to include other, especially weaker, groups in order to strengthen the coalition against outside challenges by other groups and to prevent coups by having a large, yet divided, cabinet (Arriola, 2009). Our argument thus implies that the presence of institutions that help overcome commitment problems should allow the government to follow these incentives to form coalitions that are less balanced in power. We test this argument using data on different types of autocratic regimes.

The second difference between our argument and the argument in Roessler and Ohls (2018) is that they understand group strength as an absolute concept where two groups can only form a coalition if both are above an absolute threshold of capability that allows them to threaten costly civil war. In our theory, group strength is only meaningful as a

relational concept: We argue that even in the absence of institutions facilitating credible commitment, ethnic groups can form coalitions if they are of *similar* strength. That means that even weaker ruling groups can form coalitions with similarly weak groups. Thus, despite following a similar initial logic like Roessler and Ohls (2018), our argument produces different empirical implications about the types of groups that should be included in a government coalition depending on characteristics of the ruling group, both in the presence and in the absence of facilitating institutions. Empirically distinguishing these arguments is important to understand the potential for ethnic power-sharing in ethnically divided states where ruling groups are relatively weak and to understand the role institutions can play to further power-sharing in authoritarian states and thus prevent political exclusion and its potential for political violence.

We test our argument in a large-n study considering all potential coalitions that can be formed by the current status highest ethnic group in government. This research design allows for the modeling of the ruling group's agency as well as strategic considerations of all potential coalition members when forming ruling coalitions. We provide novel empirical evidence that ruling ethnic groups form balanced coalitions based on population size. We also show that this incentive has less of an effect if institutions that facilitate credible commitment in authoritarian states are in place suggesting that governments have incentives to include groups dissimilar in power if they are able to credibly commit to them.

ETHNIC COALITIONS AND THE LOGIC OF SURVIVAL IN AUTHORITARIAN REGIMES

Leaders in authoritarian states attempt to stay in power despite problems of authoritarian power-sharing and authoritarian control (Wintrobe, 1998; Svolik, 2012). While authoritarian rulers have incentives to mitigate outside threats by including ethnic groups into the ruling coalition (Acemoglu, Egorov and Sonin, 2008; Francois, Rainer and Trebbi, 2015; Bormann, 2014), this might also increase the risk of internal coup d'etats (Roessler and Ohls, 2018). Because authoritarian states do not provide an institutional framework to guarantee binding

coalition agreements, both authoritarian rulers and potential ruling coalition members face commitment problems. We argue that these commitment problems can be solved by forming power-balanced coalitions.

We assume that ethnic coalition-formation in autocratic states involves an autocratic ruler, associated with a ruling ethnic group, and leaders of other ethnic groups that are potential coalition members and draw support from their respective ethnic groups. The ruling group is that which holds the highest political position in a coalition (e.g. prime minister or president) and its primary goal is to stay in power. In addition, the leaders of all ethnic groups – ruling or not – aim to stay in their leadership position within their group and prefer political behavior that furthers this goal. Unsuccessful policies increase the probability of a group leader being replaced by other members of the group's respective ethnic elite⁴. The ruler decides which other ethnic groups within a state to include in the government coalition alongside her own group⁵. Leaders of groups that are potential coalition members in turn decide whether to lead their groups into a government coalition if the ruler signals an intention to include their groups.

The autocratic ruler

The ruler decides which other ethnic groups to include but inclusion is not without risks for the existing government (Wucherpfennig, Hunziker and Cederman, 2016). Newly-included ethnic groups become members of the security apparatus which in turn gives them new abilities to rise against the existing leadership (Svolik, 2012; Roessler and Ohls, 2018). On the other hand, albeit increasing the risk of coups, inclusion helps the ruling ethnic group to prevent outside challenges (Acemoglu, Egorov and Sonin, 2008; Francois, Rainer and Trebbi,

⁴Other work such as Roessler and Ohls (2018) and Francois, Rainer and Trebbi (2015) also distinguishes the interests of the ruler from those of other members of the ruling group which in turn constrains the rulers choices.

⁵A similar setup is used in Francois, Rainer and Trebbi (2015).

2015; Bormann, 2014). The inside threat becomes especially problematic for the ruling group when groups that are more powerful than her own are added. Groups that are more powerful have a particularly high risk of staging coups and as a result face a commitment problem when being considered for inclusion.

In line with previous work (Bormann, 2014; Francois, Rainer and Trebbi, 2015; Roessler and Ohls, 2018), we conceptualize an ethnic group's power as a function of its size compared to the rest of the population⁶. Previous research has argued and found that a group's probability of rebellion increases with its proportional size (Cederman, Wimmer and Min, 2010). We argue that the same is the case with respect to coups: ethnic groups that are relatively large vis-à-vis the ruling ethnic group – if their representation is at least to some degree proportional to their size – are represented to a larger degree in state institutions and the security apparatus, in turn making them more likely to be successful when staging a coup. In Svolik (2009), the size of an actor's loyal followership based on ethnic ties is one possible source of power which in turn affects the actor's success in a coup. In addition, groups that are larger than the ruling ethnic group while at the same time not holding the largest amount of power in the coalition form grievances which in turn increase their incentives for making higher demands or threatening a coup⁷. For the same reason, ruling groups cannot include large groups and deny them considerable representation in state institutions in order to prevent coups as the threat posed by these groups also increases with their level of dissatisfaction. Smaller groups, on the other hand, can be given a level of representation that is acceptable to them while at the same time posing a manageable coup risk. For this reason, ruling groups will not select relatively large ethnic groups into the ruling coalition.

⁶Albeit these sources do not refer to group size as a predictor of groups' ability to be successful in a coup.

⁷Cederman, Wimmer and Min (2010) argue that leaders of these groups can depict this situation as unfair in order to mobilize group members for rebellion. They find a link between groups in power being underrepresented given their size and ethnic conflict.

Instead they will prefer to rule with ethnic groups that are small enough to credibly commit to the ethnic coalition or – if that is not an option – rule alone.

The potential coalition members

Potential coalition members can accept or reject an offer to be included into the government coalition by the autocratic ruler. Since the leaders of ethnic groups are interested in remaining in their current position, they need to carefully weigh the risks and benefits of being included or remaining outside the ruling coalition. While access to power can increase the ability of ethnic leaders to deliver policies favorable to their own ethnic group, they can only do so if they are in a reasonably strong position vis-à-vis the autocratic ruler. Failure to provide beneficial policies to their ethnic group despite being in power increases the risk of being replaced by internal challengers. Hence, the ethnic leadership of potential coalition members only accepts co-optation into the ruling coalition if they are relatively strong vis-à-vis the autocratic ruler.

Relative strength is important because the commitment problem that potential coalition partners face also extends to the ruling ethnic group. Potential coalition partners fear that the ruler will renege on coalition agreements. This is especially the case if the ruling group is much larger than that of the coalition members. When coalition members are relatively small vis-à-vis the ruling ethnic group, they are likely to be exploited in the ruling coalition as their potential to threaten a coup is very low. This logic is very much in line with existing arguments in the literature that put the commitment problem of the authoritarian ruler at the center of their analysis (for example, Magaloni, 2008; Svolik, 2009)⁸.

Group leaders that join a coalition and are unable to deliver promised spoils are likely to be punished by their group members as group members cannot distinguish whether their leader has not received spoils or has hidden part of the spoils for her personal benefit. This leads to a suboptimal outcome for a group: group members have to punish leaders for not

⁸Only Svolik (2009) refers to a large following due to ethnic ties as a source of power.

delivering promised goods in order to avoid the misappropriation of funds, which in turn keeps group leaders from joining coalitions where they cannot be sure of being rewarded appropriately by the ruling ethnic group altogether.

For these reasons, ethnic groups do not have incentives to join coalitions in which they are relatively small partners. Because neither the ruler nor potential coalition members want to end up as the smaller coalition partner, coalitions of ethnic groups that are fairly similar in size are most likely to form:

Hypothesis 1: In authoritarian regimes, ethnic coalitions are formed by similar-sized ethnic groups.

Auhoritarian regime types

So far, the discussion has focused on the difficulty of credible commitment in authoritarian regimes that stems from the lack of executive constraints and the absence or uncertainty of institutionalized rules for the selection of the executive compared to democracies. Nevertheless, authoritarian states differ considerably in their institutional make-up and the ability of the institutional framework to alleviate commitment problems amongst ethnic groups. While some types of authoritarian regimes aggravate issues of credible commitment in the coalition formation stage, other types of regimes alleviate these issues and allow potential coalition partners to base their decisions on incentives other than concerns of defection by other members of the coalition. We follow the distinction of regime types in Geddes, Wright and Frantz (2014)⁹ and argue that personalist regimes aggravate problems of credible commitment between ethnic coalition partners while dominant-party regimes facilitate commitment within ethnic coalitions.

Leaders of personalist regimes have the most difficulty to credibly commit to weaker coalition partners not to defect once they have joined the coalition. In a personalist regime,

⁹Their classification system draws on Geddes (1999).

a small group with the dictator at its center controls policy and access to power (Geddes, Wright and Frantz, 2014). As a result, the leader of the state can replace members of the government coalition at will (Geddes, 1999) which makes credible commitment towards weaker coalition partners difficult. At the same time, uncertainty about their future gives coalition partners incentives to attempt coups in order to preempt being excluded from power which makes it difficult for them to commit to not defecting as well.

Dominant-party regimes, on the other hand, facilitate credible commitment amongst ethnic groups in a government coalition and thereby allow the ruling group to form coalitions that are not based exclusively on power balancing. In a dominant-party regime, the party controls access to power and influence on policy (Geddes, Wright and Frantz, 2014). Other parties may exist in such regimes and run in elections, but face harrassment or institutional disadvantage or have never been able to actually win an election (Geddes, 1999). Dominant parties provide institutionalized rules of succession that make it worthwhile for elites to commit to the regime and the current leader as they will have sufficient opportunities to increase their power and access to state resources in the future (Magaloni, 2008)¹⁰.

In an ethnic context, these characteristics of party regimes make it worthwhile for representatives of other ethnic groups in the coalition to support the regime as the party structure protects them from defection by the ruler and guarantees spoils and opportunities in the long run. Thus, the institutional framework of a dominant party regime helps ruling groups overcome their difficulty of committing to weaker coalition partners. This makes it less risky

¹⁰More specifically, Magaloni (2008) refers to one-party states, a concept that we consider similar to regimes with one dominant party here. The author argues that the presence of multi-party elections should be even better at facilitating commitment as the opposition can credibly threaten the government. However, we assume that as long as one party is dominant, commitment is mostly created via the institutionalization of future opportunities within the dominant party.

for weaker ethnic groups to join coalitions with stronger ruling groups and benefit from the material advantages that often accompany political inclusion.

An authoritarian party also makes it easier for coalition partners to commit not to overthrow the ruling group in a coup because they have less incentives for defection as future opportunities are more certain for them and will outweigh the insecure opportunities that come with a risky coup (on the latter point see Magaloni, 2008). Of course, however, as coalition partners become particularly powerful and their chance of being successful in a coup rises, there comes a point where the high likelihood of becoming the ruling group themselves is no longer outweighed by the securities provided by the party (Magaloni, 2008). Thus, including groups that are much more powerful than the ruling group remains risky, even under dominant-party regimes. Instead, ruling groups have the biggest incentives to include several smaller ethnic groups that help them deter challenges by outside groups attempting to overthrow the government. In addition, a larger and ethnically more divided government coalition can deter coups as coordinating a coup between the larger number of ethnic groups needed to overthrow the government is difficult (see Arriola, 2009). However, if the ruling group is small itself or if there are few small groups in a given state, a ruling group may not be able to form this ideal type of coalition. In such situations, the institutional structure of dominant-party states may lead ruling groups to include stronger groups than themselves in order not to be vulnerable to outside attacks.

Thus, we expect the following hypothesis to hold:

Hypothesis 2: In dominant-party regimes, ethnic coalitions are formed by less similar-sized ethnic groups than in personalist regimes.

Other types of autocratic regimes in the classification include military regimes, monarchies, oligarchies as well as a number of hybrid regimes (Geddes, Wright and Frantz, 2014).

We expect that these types of regimes neither possess structures that facilitate, nor characteristics that aggravate issues of credible commitment. Military regimes may be more suited to alleviate problems of credible commitment within a coalition than personalist regimes as the leader is constrained by other officers (on the latter point see Geddes, Wright and Frantz, 2014; Geddes, 1999)¹¹. The government is expected to represent the interests of the military as an institution (Geddes, 1999). This form of regime could be more suited to facilitate credible commitment between different ethnic groups if different ethnic groups are represented in the military. Nevertheless, the lack of institutionalized procedures for the distribution of power and access to spoils puts weaker ethnic groups at the will of the ruling group that is likely to also dominate the military. Similarly, in monarchies, the leader is constrained by other members of the royal family (Geddes, Wright and Frantz, 2014) but this is unlikely to facilitate credible commitment amongst ethnic groups as members of the royal family likely stem predominantly from one ethnic group. Oligarchies are regimes where leaders are elected but only a small proportion of the population votes (Geddes, Wright and Frantz, 2014). We also expect that these regimes do not possess institutional structures that facilitate commitment, but leaders may be more constrained than in a personalist regime. We expect the same in hybrid regimes.

RESEARCH DESIGN

Unit of analysis and sample

The unit of analysis is the potential ethnic ruling coalition that can form in a given year. We identify ethnic groups and their size using the Ethnic Power Relations (EPR) data version 2014 (Cederman, Wimmer and Min, 2010; Vogt et al., 2015). The potential ethnic ruling coalitions are combinations of all relevant and active ethnic groups in each year. We constrain the sample of coalitions in several ways to suit our theoretical focus. Using this 11 In line with previous work, a military strongman that rules without constraints is con-

sidered personalist rule by Geddes, Wright and Frantz (2014) and Geddes (1999).

constrained combination approach we construct a dataset, which is analyzed with a k-adic analytical approach (Poast, 2010).

Firstly, we only include potential ethnic coalitions that include the ruling ethnic group because we are interested in the formation of an ethnic coalition given a ruling group and not the conditions under which a particular ethnic group becomes the ruling group. We define the ruling group to be the status highest group using the power-ranking provided by EPR. Status highest ethnic groups are coded by EPR as 'monopoly', 'dominant', or 'senior partner'. Secondly, we restrict our analysis to countries 'born' or gaining independence after 1946 to isolate the initial and probably crucial formation of ethnic ruling coalitions. Thirdly, as our theoretical argument pertains to autocratic regimes, we only include years under autocratic regimes as defined by (Geddes, Wright and Frantz, 2014). That means we exclude country-years that are classed as democratic, but also periods where states are not independent, occupied by a foreign power, situations where the government does not control the majority of the state's territory and transitional periods (Geddes, Wright and Frantz, N.d.)¹².

Variables

The dependent variable is coded one if a potential ethnic ruling coalition is realized, and otherwise zero. Our first hypothesis suggests that potential coalitions with similarly-sized ethnic groups are most likely to be realized. We test this argument of balanced coalitions by calculating the Gini coefficient based on relative population size of all ethnic groups in a potential coalition using the EPR data (Cederman, Wimmer and Min, 2010; Vogt et al., 2015). Originally, the GINI coefficient is calculated as

¹²As the data from Geddes, Wright and Frantz (2014) contains many missing values, we lose 110.478 potential coalitions that could otherwise be included in our analyses of the full sample because we are unable to identify the regime type.

$$G = \frac{1}{2n^2\bar{y}} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|$$

where n is the population size and y_i is the income of an individual i (Cowell, 2011). In our application, n is the number of ethnic groups in a coalition and y_i is group i's population share. The GINI coefficient, a measure of how unequal the population distribution is within a potential coalition, takes a value of zero when all groups are equally sized and can theoretically take a maximum value approaching one for very unequal distributions (maximum observed value in our data is $.82)^{13}$.

We distinguish three different types of authoritarian regimes based on data from Geddes, Wright and Frantz (2014): One on party regimes, one on personalist regimes and one category in which we include all other types of regimes. Hypothesis two expects that in dominant-party systems ethnic coalitions are formed by less similar-sized ethnic groups than in personalist regimes. The other types of regimes are expected to lie somewhere in between. To test these expectations, we interact the dummy variables on the party and the other type of regime with our inequality measure using personalist regimes as the baseline category.

We include a number of variables that have a direct effect on the GINI coefficient and are plausible explanations for coalition realization. Importantly, we indicate whether a potential coalition only includes the ruling group as single coalitions have by definition a Gini coefficient equal to zero. In the empirical section, we take additional steps to untangle the effect of power balances in inter-group coalitions and the effect of ruling groups not sharing power with any other groups. In addition, using EPR data, we control for the combined proportional size of all additional groups included in a potential coalition and for the number of ethnic groups included in the coalition.

¹³In the robustness section, we consider two alternative ways of calculating inequality in potential coalitions.

We also consider a number of variables that may have an effect on our equality measures alongside the realization of a coalition. We control for the possibility that the government tries to mitigate outside challenges by minimizing the number of geographically-dispersed ethnic groups within the ethnic ruling coalition. For this, we include a variable on the number of groups that are included alongside the ruling group that are geographically-dispersed using data from EPR based on GEO-EPR (Wucherpfennig et al., 2011). The empirical models also account for past conflict between potential coalition members as this might increase, or respectively decrease, the probability of coalition realization. Hence, we control for whether members of the coalition have been in conflict with one another in the past using the Ethnic Power Relations data which draws on the UCDP/PRIO Armed Conflict dataset (Gleditsch et al., 2002). Following Bormann (2014), we additionally include a measure on ethnic cleavage dimensions within a coalition. As suggested in Bormann (2014), and using the Ethnic Dimensions data (Bormann, Cederman and Vogt, 2017) provided in the Ethnic Power Relations data, we construct a cumulative score that takes value three if coalition members differ in language, religion and phenotype, and value zero if they differ in none of these dimensions. As opposed to Bormann (2014) we only consider language, phenotype and religion representing the largest number of group members.

The historical record of coalitions likely affects whether a coalition is realized in any given year. To deal with this concern, we analyse the full sample of potential coalitions as well as a subsample of coalitions that only includes years where a new coalition came into power in a given country. We include a number of variables to model temporal dependence. In the full sample, we include a variable on the total, cumulative number of years that a coalition was in power before the year under scrutiny. In addition, we include a variable on the time since the last year out of power (or where the coalition did not exist). We include similar variables for years out of power, that is the total, cumulative years that a coalition was out of power up until the year under scrutiny and the number of years since the most recent

year in power (or since the beginning of a coalition's existence)¹⁴. We also include a lagged dependent variable¹⁵. In the sample on coalition changes, we include the variable on the cumulative number of years that a coalition was in power before the year under scrutiny as well. We cannot include the variable on the time since the last year out of power as for realized coalitions this variable would always take value zero in this sample. The same issue arises with the lagged dependent variable, which we also exclude when analysing this sample. We also include the variable on the number of years since a coalition was last realized¹⁶. In both samples, we include squared and cubed terms of all non-binary time variables following the suggestion of Carter and Signorino (2010).

Summary statistics for all models and variables can be found in the supplementary Appendix. The analysis sample on coalition changes contains 45.834 observations in 90 country-years and as a result with 90 positive realizations. The full analysis sample contains 789.650 observations in 2.166 country-years with 2.166 corresponding realizations.

Methods

We use a conditional logit model that compares all potential coalitions within a country-year as this is the choice that status highest groups face in any given year. In other words, the probabilities of realization for all potential coalitions within a country-year sum to 1, reflecting the fact that status highest groups must choose exactly one of all the potential coalitions in a given year. This setup also allows us to control for – potentially unobserved –

¹⁴In the construction of these two variables, we ignore gaps in coalitions' life span, that is we do not count years when a coalition did not exist in our data as years out of power.

¹⁵We code this variable to zero in years where a coalition comes into existence (again).

¹⁶In addition, we could have included the variable on the total, cumulative number of years a coalition was out of power. However, as this variable and the variable on years since the last realization overlap widely in the restricted sample, we refrain from doing so and instead show in the robustness section results from models including this variable as an alternative to the variable on years since last realization.

country- and senior-partner specific characteristics in a convenient way and to only include variables that are specific to a given potential coalition. Standard errors are clustered by country-year.

RESULTS

Table 1 shows results from our conditional logit models. Models one and two include the measure on the inequality of group sizes in a potential coalition alongside control variables. Model one shows results from years of coalition changes while model two shows results from the full sample. Models three and four add interactive terms between the variable on inequality in a coalition and dummy variables on party regimes and the other type of regimes using personalist regimes as a baseline category. Constitutive terms on the regime type dummies cannot be included as the model only compares potential coalitions within country-years, where these variables do not vary.

Hypothesis one expects that higher inequality in the proportional size of groups in a potential coalition is associated with a lower likelihood of this coalition being realized. The results from models one and two support this argument: the variable on size inequality in a potential coalition is significantly negative. Thus, a coalition is more likely to be realized if all included groups are similar in size. Coalitions of groups that differ considerably in size, on the other hand, are less likely to be realized.

Previous research suggests that power balancing only allows for coalitions to form between two powerful groups (Roessler and Ohls, 2018). We argue, on the other hand, that smaller ruling groups also have incentives to form power-balanced coalitions with other small groups. To test whether this is the case, we replicate models one and two using only cases where the ruling group is below the median size of 41 per cent of the population (Table 2). We find our inequality measure to be significantly negative both in the sample on coalition changes and in the otherwise unrestricted sample. Thus, we do not find support for the notion that power-balancing only facilitates inter-group coalitions when the ruling group is large. Instead, the

evidence suggests that even smaller ruling groups are more likely to form coalitions that are power-balanced. If smaller ruling groups would generally refrain from forming coalitions with other groups, we would not expect the measure on the inequality of group sizes in a coalition to haver an effect in this sample. Instead, we would expect the variable on whether the senior partner rules alone, single, to be significantly positive in the subsample on smaller ruling groups. The coefficient of this variable, however, carries a negative sign and does not reach statistic significance in both models.

TABLE 1. Estimates from conditional logit models on autocratic years. Dependent variable is the realization of potential coalitions.

	(1)	(2)	(3)	(4)
	Coalition changes	Full sample	Coalition changes	Full sample
Coalition realized				
Size inequality in calition	-3.986**	-5.770***	-4.279^*	-10.47***
	(1.431)	(0.981)	(1.996)	(1.591)
Single	-0.324	-0.696	-0.418	-0.501
	(0.697)	(0.665)	(0.667)	(0.632)
Additional population in calition	2.268^{*}	2.649**	2.675^{**}	3.447***
	(0.964)	(1.015)	(0.990)	(0.936)
Groups in coalition	-0.383 ⁺	-0.371***	-0.395^{+}	-0.343**
	(0.218)	(0.112)	(0.216)	(0.109)
Geodispersion in coalition	-0.639	0.504^{*}	-0.752	0.311
	(0.674)	(0.229)	(0.678)	(0.213)
Cleavage dimensions in coalition	0.151	0.0594	-0.00134	0.0851
	(0.299)	(0.247)	(0.313)	(0.226)
Conflict history in coalition	0.162	-0.194	0.272	0.394
	(0.531)	(0.516)	(0.541)	(0.489)
Time since last year in power	0.398***	0.197	0.371***	0.137
	(0.0936)	(0.123)	(0.0944)	(0.140)
Time since last year in power, squared	-0.0204***	-0.0129^+	-0.0195***	-0.00998
	(0.00474)	(0.00730)	(0.00472)	(0.00880)
Time since last year in power, cubed	0.000253***	0.000160	0.000242***	0.000129
	(0.0000641)	(0.000102)	(0.0000644)	(0.000124)
Total years in power	0.245	0.356^*	0.241	0.401**
	(0.197)	(0.142)	(0.190)	(0.122)
Total years in power, squared	-0.00570	-0.00807	-0.00916	-0.0136^{+}
	(0.0130)	(0.0100)	(0.0126)	(0.00812)
Total years in power, cubed	-0.0000636	0.0000229	0.0000545	0.000135
	(0.000225)	(0.000180)	(0.000225)	(0.000123)
Time since last year out of power		-0.105		-0.234
		(0.177)		(0.165)
Time since last year out of power, squared		-0.00350		0.00539
· · · ·		(0.0120)		(0.0104)
Time since last year out of power, cubed		0.000123		-0.0000332
,		(0.000201)		(0.000156)
Total years out of power		-0.270**		-0.287*

		(0.0918)		(0.114)
Total years out of power, squared		0.0155**		0.0150^{+}
		(0.00598)		(0.00771)
Total years out of power, cubed		-0.000194*		-0.000185^{+}
		(0.0000831)		(0.000109)
Realization, t-1		6.003^{***}		6.044^{***}
		(0.491)		(0.502)
Size inequality x Party regime			4.357^{+}	7.986^{***}
			(2.390)	(1.567)
Size inequality x Other regime			-1.405	3.051*
			(2.283)	(1.483)
Observations	45834	789650	45834	789650

Table 2. Estimates from conditional logit models on autocratic years with ruling groups below 41 per cent of the population. Dependent variable is the realization of potential coalitions.

Coalition changes Full sample Coalition realized 5ize inequality in calition -3.837* -4.759*** Size inequality in calition -3.837* -0.502 (0.848) (0.698) Single -0.237 -0.502 (0.848) (0.698) Additional population in calition 2.167* 2.487* (1.110) (1.049) Groups in coalition -0.363 -0.444** (0.157) -0.444** (0.244) (0.157) Geodispersion in coalition -13.11*** 0.483* (0.251) 0.251) Cleavage dimensions in coalition 0.00975 -0.324 (0.369) (0.349) Conflict history in coalition 0.585 0.0805 (0.349) Conflict history in coalition 0.585 0.0805 (0.493) Time since last year in power 0.440**** 0.265 (0.493) Time since last year in power, squared -0.0254*** -0.0238* (0.0131) Time since last year in power, cubed 0.000339*** 0.000331 (0.00035) Total years in power, squared -0.0120 0.000083 Total years in power, squared -0.0120 0.00008 Total years in power, cubed 0.000741 0.00015 Total years in power, cubed 0.0000741 0.000115 Total years in power, cubed 0.0000741 0.00011			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$. ,	` '
$\begin{array}{c} \text{Size inequality in calition} & -3.837^* & -4.759^{***} \\ & (1.628) & (1.239) \\ \hline \text{Single} & -0.237 & -0.502 \\ & (0.848) & (0.698) \\ \hline \text{Additional population in calition} & 2.167^+ & 2.487^* \\ & (1.110) & (1.049) \\ \hline \text{Groups in coalition} & -0.363 & -0.444^{**} \\ & (0.244) & (0.157) \\ \hline \text{Geodispersion in coalition} & -13.11^{***} & 0.483^+ \\ & (0.795) & (0.251) \\ \hline \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ \hline \text{Conflict history in coalition} & 0.585 & 0.0805 \\ \hline \text{Conflict pistory in power} & 0.440^{***} & 0.265 \\ \hline \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^+ \\ & (0.00643) & (0.0131) \\ \hline \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ \hline \text{Total years in power, squared} & -0.0120 & -0.0108 \\ \hline \text{(0.239)} & (0.173) \\ \hline \text{Total years in power, cubed} & -0.0120 & -0.0108 \\ \hline \text{(0.00152)} & (0.0136) \\ \hline \text{Total years in power, cubed} & 0.000741 & 0.000115 \\ \hline \text{(0.000259)} & (0.000214) \\ \hline \end{array}$		Coalition changes	Full sample
$\begin{array}{c} \text{Single} & (1.628) & (1.239) \\ -0.237 & -0.502 \\ (0.848) & (0.698) \\ \text{Additional population in calition} & 2.167^+ & 2.487^* \\ & (1.110) & (1.049) \\ \text{Groups in coalition} & -0.363 & -0.444^{**} \\ & (0.244) & (0.157) \\ \text{Geodispersion in coalition} & -13.11^{***} & 0.483^+ \\ & (0.795) & (0.251) \\ \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ & (0.675) & (0.493) \\ \text{Time since last year in power} & 0.440^{***} & 0.265 \\ & (0.129) & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^+ \\ & (0.00643) & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \text{Total years in power, squared} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ & (0.000259) & (0.000214) \\ \end{array}$	Coalition realized		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Size inequality in calition	-3.837*	-4.759^{***}
$ \begin{array}{c} \text{Additional population in calition} & (0.848) & (0.698) \\ \text{Additional population in calition} & 2.167^{+} & 2.487^{*} \\ (1.110) & (1.049) \\ \text{Groups in coalition} & -0.363 & -0.444^{**} \\ (0.244) & (0.157) \\ \text{Geodispersion in coalition} & -13.11^{***} & 0.483^{+} \\ (0.795) & (0.251) \\ \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ \text{Conflict history in power} & 0.440^{***} & 0.265 \\ \text{Co.129} & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^{+} \\ \text{Co.00643} & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ \text{Co.0000837} & 0.000205 \\ \text{Total years in power, squared} & -0.312 & 0.364^{*} \\ \text{Co.239} & (0.173) \\ \text{Total years in power, squared} & -0.0120 & -0.0108 \\ \text{Co.0152} & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \text{Co.000259} & (0.000214) \\ \end{array}$		(1.628)	(1.239)
$ \begin{array}{c} \text{Additional population in calition} & 2.167^{+} & 2.487^{*} \\ & (1.110) & (1.049) \\ \text{Groups in coalition} & -0.363 & -0.444^{**} \\ & (0.244) & (0.157) \\ \text{Geodispersion in coalition} & -13.11^{***} & 0.483^{+} \\ & (0.795) & (0.251) \\ \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ & (0.675) & (0.493) \\ \text{Time since last year in power} & 0.440^{***} & 0.265 \\ & (0.129) & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^{+} \\ & (0.00643) & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \text{Total years in power, squared} & -0.312 & 0.364^{*} \\ & (0.239) & (0.173) \\ \text{Total years in power, squared} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ & (0.000259) & (0.000214) \\ \end{array} $	Single		
$\begin{array}{c} \text{Groups in coalition} & (1.110) & (1.049) \\ \text{Groups in coalition} & -0.363 & -0.444^{**} \\ (0.244) & (0.157) \\ \text{Geodispersion in coalition} & -13.11^{***} & 0.483^{+} \\ (0.795) & (0.251) \\ \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ (0.369) & (0.349) \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ (0.675) & (0.493) \\ \text{Time since last year in power} & 0.440^{***} & 0.265 \\ (0.129) & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^{+} \\ (0.00643) & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ (0.0000837) & (0.000205) \\ \text{Total years in power, squared} & -0.0120 & -0.0108 \\ (0.0152) & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ (0.000259) & (0.000214) \\ \end{array}$			(0.698)
$\begin{array}{c} \text{Groups in coalition} & -0.363 & -0.444^{**} \\ & (0.244) & (0.157) \\ \text{Geodispersion in coalition} & -13.11^{***} & 0.483^{+} \\ & (0.795) & (0.251) \\ \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ & (0.675) & (0.493) \\ \text{Time since last year in power} & 0.440^{***} & 0.265 \\ & (0.129) & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^{+} \\ & (0.00643) & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \text{Total years in power, squared} & -0.312 & 0.364^{*} \\ & (0.239) & (0.173) \\ \text{Total years in power, cubed} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ & (0.000259) & (0.000214) \\ \end{array}$	Additional population in calition	2.167^{+}	2.487^{*}
$\begin{array}{c} \text{Geodispersion in coalition} & \begin{array}{c} (0.244) & (0.157) \\ -13.11^{***} & 0.483^{+} \\ (0.795) & (0.251) \\ \end{array} \\ \text{Cleavage dimensions in coalition} & \begin{array}{c} 0.00975 & -0.324 \\ (0.369) & (0.349) \\ \end{array} \\ \text{Conflict history in coalition} & \begin{array}{c} 0.585 & 0.0805 \\ (0.675) & (0.493) \\ \end{array} \\ \text{Time since last year in power} & \begin{array}{c} 0.440^{***} & 0.265 \\ (0.129) & (0.172) \\ \end{array} \\ \text{Time since last year in power, squared} & \begin{array}{c} -0.0254^{***} & -0.0238^{+} \\ (0.00643) & (0.0131) \\ \end{array} \\ \text{Time since last year in power, cubed} & \begin{array}{c} 0.000339^{***} & 0.000331 \\ (0.0000837) & (0.000205) \\ \end{array} \\ \text{Total years in power, squared} & \begin{array}{c} 0.312 & 0.364^{*} \\ (0.239) & (0.173) \\ \end{array} \\ \text{Total years in power, cubed} & \begin{array}{c} 0.0120 & -0.0108 \\ (0.0152) & (0.0136) \\ \end{array} \\ \text{Total years in power, cubed} & \begin{array}{c} 0.0000741 & 0.000115 \\ 0.0000259) & (0.000214) \\ \end{array} \\ \end{array}$		(1.110)	(1.049)
$\begin{array}{c} \text{Geodispersion in coalition} & -13.11^{***} & 0.483^{+} \\ & (0.795) & (0.251) \\ \hline \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ \hline \text{Conflict history in coalition} & 0.585 & 0.0805 \\ & (0.675) & (0.493) \\ \hline \text{Time since last year in power} & 0.440^{***} & 0.265 \\ & (0.129) & (0.172) \\ \hline \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^{+} \\ & (0.00643) & (0.0131) \\ \hline \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \hline \text{Total years in power} & 0.312 & 0.364^{*} \\ & (0.239) & (0.173) \\ \hline \text{Total years in power, squared} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \hline \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \hline \text{Total years in power, cubed} & 0.0000259) & (0.000214) \\ \hline \end{array}$	Groups in coalition	-0.363	-0.444**
$\begin{array}{c} & & & & & & & & & & & & \\ & & & & & & $		(0.244)	(0.157)
$\begin{array}{c} \text{Cleavage dimensions in coalition} & 0.00975 & -0.324 \\ & (0.369) & (0.349) \\ & (0.369) & (0.349) \\ & (0.675) & (0.805 \\ & (0.675) & (0.493) \\ & (0.129) & (0.172) \\ & (0.129) & (0.172) \\ & (0.00643) & (0.0131) \\ & (0.00643) & (0.00339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ & (0.239) & (0.173) \\ & (0.0152) & (0.0136) \\ & (0.0152) & (0.0136) \\ & (0.000741 & 0.000115 \\ & (0.000259) & (0.000214) \\ \end{array}$	Geodispersion in coalition	-13.11***	0.483^{+}
$\begin{array}{c} \text{Conflict history in coalition} & (0.369) & (0.349) \\ \text{Conflict history in coalition} & 0.585 & 0.0805 \\ \hline (0.675) & (0.493) \\ \text{Time since last year in power} & 0.440^{***} & 0.265 \\ \hline (0.129) & (0.172) \\ \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^+ \\ \hline (0.00643) & (0.0131) \\ \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ \hline (0.0000837) & (0.000205) \\ \text{Total years in power} & 0.312 & 0.364^* \\ \hline (0.239) & (0.173) \\ \text{Total years in power, squared} & -0.0120 & -0.0108 \\ \hline (0.0152) & (0.0136) \\ \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \hline (0.000259) & (0.000214) \\ \end{array}$		(0.795)	(0.251)
$\begin{array}{c} \text{Conflict history in coalition} & 0.585 & 0.0805 \\ & (0.675) & (0.493) \\ \hline \text{Time since last year in power} & 0.440^{***} & 0.265 \\ & (0.129) & (0.172) \\ \hline \text{Time since last year in power, squared} & -0.0254^{***} & -0.0238^+ \\ & (0.00643) & (0.0131) \\ \hline \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \hline \text{Total years in power} & 0.312 & 0.364^* \\ & (0.239) & (0.173) \\ \hline \text{Total years in power, squared} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \hline \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \hline \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ \hline \end{array}$	Cleavage dimensions in coalition	0.00975	-0.324
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		(0.369)	(0.349)
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Conflict history in coalition	0.585	0.0805
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		(0.675)	(0.493)
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Time since last year in power	0.440***	0.265
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		(0.129)	(0.172)
$\begin{array}{cccc} \text{Time since last year in power, cubed} & 0.000339^{***} & 0.000331 \\ & (0.0000837) & (0.000205) \\ \hline \text{Total years in power} & 0.312 & 0.364^* \\ & (0.239) & (0.173) \\ \hline \text{Total years in power, squared} & -0.0120 & -0.0108 \\ & (0.0152) & (0.0136) \\ \hline \text{Total years in power, cubed} & 0.0000741 & 0.000115 \\ & (0.000259) & (0.000214) \\ \hline \end{array}$	Time since last year in power, squared	-0.0254***	-0.0238+
		(0.00643)	(0.0131)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Time since last year in power, cubed	0.000339***	0.000331
		(0.0000837)	(0.000205)
	Total years in power	0.312	0.364*
		(0.239)	(0.173)
	Total years in power, squared	-0.0120	-0.0108
$(0.000259) \qquad (0.000214)$, ,	(0.0152)	(0.0136)
	Total years in power, cubed	0.0000741	0.000115
	,	(0.000259)	(0.000214)
Time since last year out of power -0.123	Time since last year out of power	,	-0.123
(0.195)	•		(0.195)
Time since last year out of power, squared -0.00775	Time since last year out of power, squared		` /

Standard errors in parentheses $^+$ p < .10, * p < .05, ** p < .01, *** p < .001

		(0.0154)
Time since last year out of power, cubed		0.000173
• • • • • • • • • • • • • • • • • • • •		(0.000245)
Total years out of power		-0.328^{+}
		(0.173)
Total years out of power, squared		0.0178
		(0.0137)
Total years out of power, cubed		-0.000192
		(0.000211)
Realization, t-1		5.503***
		(0.502)
Observations	43360	427298

Models three and four in Table 1 allow testing our second hypothesis: We expect that coalitions of groups that are dissimilar in size are more likely to form in authoritarian regimes that feature a dominant party compared to personalist regimes. To test this hypothesis, we have interacted dummy variables on party regimes and the other type of authoritarian regimes with our measure on inequality in the sizes of coalition partners. Again, we find the inequality measure to be negative and statistically significant in both samples. The interaction term with dominant-party regimes carries a positive sign in both models and reaches statistical significance at the ten per cent level in our smaller sample and at the .1 per cent level in the full sample. Thus, the evidence suggests that compared to personalist regimes, dominant-party regimes provide an institutional context that facilitates the formation of coalitions between more unequal coalition partners as we expected under hypothesis two. The interaction term between the other types of regimes and our inequality measure is negative and insignificant in the restricted sample but positive and statistically significant at the five per cent level in the full sample. The latter finding suggests that credible commitment is more difficult in personalist regimes that in hybrid types, military regimes, monarchies and oligarchies. When we compare the odds ratios of the interaction terms between the inequality measure and party regimes on one hand and other types of regimes on the other hand based on model four, the odds ratio is considerably larger in the party case suggesting

Standard errors in parentheses $^+$ p < .10, * p < .05, ** p < .01, *** p < .001

that party regimes are more effective at alleviating the negative effect of inequality that we find in personalist regimes.

As our inequality measure takes a value of zero when a ruling group rules alone, the differing effects of size inequality that we find in different types of authoritarian regimes could be driven by a different likelihood of ruling groups ruling alone across regime types. Models three and four in Table 1 are unable to rule out this possibility as the variable on single coalitions is not interacted with the variable on regime type¹⁷. Thus, to distinguish whether the effect of size inequality or the likelihood to rule alone – or both – differ between regime types, we include interactions between single coalitions and our two regime type dummies alongside the interactions between size inequality and the two regime type dummies in Table 3. In addition, as previous research suggests that the effect of power-balancing may depend on the strength of the ruling group which in turn may be correlated with regime types, we also control for interaction terms between a dummy variable on whether the senior partner is larger than the median and our measures of inequality and single to rule out the possibility that not the regime type but the size of the ruling group is the true moderating variable.

When using the full interaction specification in the sample on coalition changes (Model one in Table 3), we find the variable on size inequality to be negative and the interaction term with party regimes to be positive as before. The direction of these effects confirms our previous finding that in party regimes size inequality has a less negative effect on coalition decisions than in personalist regimes as expected under hypothesis two. The newly added interaction term between party regime and single coalitions is negative implying that single coalitions are less likely to be realized in party than in personalist regimes. None of these estimates reaches statistical significance but this may not be surprising given the complexity of the model specification and the small number of realized coalitions in the sample. In the full sample, coefficients on these measures of interest carry the same signs and reach statistical significance

 $^{^{17}}$ For a discussion of this problem see Beiser-McGrath and Beiser-McGrath (2018).

at the five per cent level or better. Thus, overall, we find some evidence suggesting that single coalitions are less likely to be realized in party regimes than in personalist regimes but also that this relationship does not drive our previous finding that under party regimes ruling groups can form less power-balanced coalitions than under personalist regimes. The additional finding on single coalitions could in fact be interpreted as additional support for our original argument that party regimes facilitate credible commitment between groups because the decision to rule alone may be the result of a failure to form a stable coalition where all partners can credibly commit not to defect.

The interaction terms between the other type of regimes and the variables on size inequality and single coalitions do not reach statistical significance at the five per cent level in either model and in addition the direction of coefficients differs across models. Thus, we find less evidence for the previous finding on the relationship between size inequality and other types of regimes in the sophisticated models. In addition, the interactions between the dummy on the size of the ruling group and the variables on size inequality and single coalitions do not reach statistical significance in any model. This suggests that senior partner size does not moderate the propensity to form single coalitions or to prefer power-balanced multi-party coalitions.

Table 3. Estimates from conditional logit models on autocratic years including additional interactions. Dependent variable is the realization of potential coalitions.

	(1)	(-)
	(1)	(2)
	Coalition changes	Full sample
Coalition realized		
Size inequality in calition	-2.367	-9.531***
	(2.778)	(1.813)
Single	0.400	-0.302
	(1.058)	(0.823)
Additional population in calition	2.266^{*}	2.563^{*}
	(1.017)	(0.995)
Groups in coalition	-0.366 ⁺	-0.262^*
	(0.220)	(0.116)
Geodispersion in coalition	-0.486	0.324
	(0.787)	(0.235)
Cleavage dimensions in coalition	0.0698	-0.00261

	(0.311)	(0.225)
Conflict history in coalition	0.293	0.459
V	(0.543)	(0.503)
Time since last year in power	0.390***	0.163
	(0.0963)	(0.142)
Time since last year in power, squared	-0.0203***	-0.0115
	(0.00470)	(0.00905)
Time since last year in power, cubed	0.000252^{***}	0.000146
	(0.0000640)	(0.000128)
Total years in power	0.291	0.394**
	(0.194)	(0.123)
Total years in power, squared	-0.0131	-0.0119
	(0.0128)	(0.00845)
Total years in power, cubed	0.000134	0.000107
	(0.000234)	(0.000130)
Size inequality x Party regime	2.275	5.226*
	(4.311)	(2.429)
Size inequality x Other regime	-2.795	4.293^{+}
	(3.265)	(2.361)
Single x Party regime	-1.982	-2.519*
	(2.123)	(1.114)
Single x Other regime	-0.871	0.471
	(1.035)	(1.178)
Size inequality x Large senior partner	-3.896	-3.194
	(3.964)	(2.410)
Single x Large senior partner	-1.139	-1.024
	(1.235)	(1.172)
Time since last year out of power		-0.246
		(0.164)
Time since last year out of power, squared		0.00463
		(0.0107)
Time since last year out of power, cubed		-0.0000152
		(0.000163)
Total years out of power		-0.306**
		(0.115)
Total years out of power, squared		0.0162^*
		(0.00792)
Total years out of power, cubed		-0.000199+
		(0.000112)
Realization, t-1		6.174***
		(0.493)
Observations	45834	789650

Robustness

We have tested the robustness of our results on size inequality and the moderating effect of party regimes in a number of alternative specifications (regression tables in the supplementary appendix).

Standard errors in parentheses $^+$ p < .10, * p < .05, ** p < .01, *** p < .001

We have considered two alternative ways of calculating the GINI coefficient we use to operationalize the difference in group sizes in a coalition. Firstly, the standardization of the measure by the mean income in a state is useful when comparing wealth as it sets differences between individuals in proportion to the total wealth of a population. In a rich society, small differences are less meaningful than in a poor one. In our case, this standardization could be considered less important as proportional group sizes are already standardized and total differences in group size might matter more than relative differences. Using a GINI version that is not mean-standardized, our main results from Table 1 are fairly similar. In the models without the interaction term testing hypothesis one, the significance level drops to the ten per cent level in the full sample. In the interaction model on the the coalition sample, on the other hand, the interaction term is now also significant at the five per cent level. Thus, our findings on hypothesis two in particular are robust to this alternative specification. Results are also similar in the subsamples on small senior partners. In the case of the sophisticated interaction models our results differ somewhat using this alternative Gini specification. In the sample on coalition changes, the interaction between inequality and the party measure is again insignificant but now carries a negative sign, which is opposed to our expectation under hypothesis two. In the full sample, the signs of the interaction terms are as expected but only the interaction term on single regimes in party systems reaches statistical significance here.

Secondly, the Gini coefficient takes population size into account by dividing by $2n^2$. An alternative possibility would be to divide by n(n-1), the number of comparisons made between all groups in a coalition, to get a more straightforward mean difference standardized by the mean group size in the coalition. Using this measure, our results from Table 1 are similar and again, the interaction term in the sample on coalition changes is now significant at the five per cent level as well. Results from the subsamples on smaller coalition partners are also similar. Again, however, results are less robust when considering the sophisticated

interaction models, differing from the original models in the same way like the models using the first alternative GINI measure.

A large number of cases are from Indonesia. Excluding Indonesia, our results remain robust. Results are also robust if we control for the total, cumulative number of years a coalition was out of power instead of the years since the last realization in the samples on coalition changes. In fact, the interaction term between party systems and inequality in the less sophisticated interaction specification also reaches significance on the five per cent level here.

CONCLUSION

This article analyzes authoritarian leaders' strategic choice for including and excluding other ethnic groups from a ruling coalition. We contribute to a growing literature explaining the dynamics of authoritarian politics (e.g., Acemoglu, Egorov and Sonin, 2008; Magaloni, 2008; Svolik, 2009; Roessler, 2011; Svolik, 2012; Bormann, 2014). Our argument highlights that both the ruling ethnic group and groups that are potential coalition partners want to avoid ending up as a relatively weak coalition member in the future. Without institutions that can help actors overcome commitment problems in authoritarian regimes, similarly-sized ethnic groups are most likely to form ruling coalitions. Using a research design that allows us to explicitly model the agency of the ruling ethnic group, we find support for the theoretical argument that status highest groups and potential coalition members seek coalitions in which all ethnic groups are of a fairly similar size.

We also find that the necessity of power-balancing in ethnic coalitions depends on the type of authoritarian regime. While leaders in personalist regimes have to rely heavily on balanced coalitions, leaders in regimes with dominant parties can include other ethnic groups that differ in power from themselves as the institutional make-up of the state helps overcome commitment problems. These findings are in line with previous arguments and findings on authoritarian institutions (Magaloni, 2008; Gandhi and Przeworski, 2007), but they also

show for the first time that authoritarian institutions help facilitating coalitions between ethnic groups competing for power.

Our research provides novel insights as to why particular ethnic groups are included or excluded from power in authoritarian regimes. In line with previous work that highlights worries about power balance inside the ruling coalition (Acemoglu, Egorov and Sonin, 2008), we argue that it is not only that authoritarian leaders have difficulties in committing to their coalition promises (Magaloni, 2008; Svolik, 2009), but potential coalition members also find it difficult to commit to not overthrowing the government leader in a coup (Roessler, 2011). In combination with the institutional structure of the state, this focus on stable ruling coalitions, we argue, provides the basis for ethnic inclusion dynamics in authoritarian regimes. It follows that the exclusion of particular ethnic groups, at least to some extent, is a function of coalition-formation and institutional constraints rather than governments trying to target particular ethnic groups.

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