

# Why Do Authoritarian Regimes Provide Welfare?

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## Abstract

Why do authoritarian regimes provide welfare for their citizens? This paper answers this question by examining the information problems faced by autocrats: how well they can identify public preferences and the key groups they must co-opt to stay in power. Despite democracies providing welfare by public demand, authoritarian leaders use welfare provision strategically to maintain their ruling coalitions. I argue that the extent of welfare provision depends on which groups an autocrat relies on for support and their ability to gather information about the population. This is because better information allows them to target benefits more effectively. I examine data on authoritarian regimes and their welfare provisions from 1966-2011. I find that mass-based coalitions and strong mass party organizations lead to more universal welfare. Also, the effect of mass-based coalition diminishes when autocrats effectively manage information problems through a well-institutionalized mass party. Strong mass party organizations play an important role in resolving information problems, enabling more efficient targeting, and reducing reliance on universal welfare provisions.

*Keywords:* Welfare provision, Information problem, Ruling coalition, Mass Party Organization, Preference falsification

Why do authoritarian regimes provide welfare? While most existing scholarship has focused on welfare provision in democracies (Pierson 1996, 2000; Miller 2015), it is not uncommon to find authoritarian regimes redistributing resources to their citizens in the real world.<sup>1</sup> For example, China has a social assistance program providing unconditional cash transfers to protect minimum-income earners (Pan 2020). Some authoritarian regimes design and provide welfare to its citizens broadly. Examples are the members of the Soviet Union or other post-communist countries (Pascall and Manning 2000; Orenstein 2008). However, the workings of welfare provision in modern autocracies remain poorly understood.

This reliance extends to both elite factions, who can pose a direct threat to their rule (Geddes 1999; Cheibub, Gandhi and Vreeland 2010), and the broader populace, whose potential for mobilization necessitates careful management to avoid the all-or-nothing game (Acemoglu and Robinson 2006). As a result, autocrats face two different fundamental problems with elites and masses in general (Svolik 2012). Since autocrats lose the regime if they fail to solve either or both problems, both elites and masses may exert pressure on autocrats to secure their support and loyalty through welfare provision (Bueno de Mesquita et al. 2005).

In addition to managing elite power-sharing and mass control, autocrats face significant information deficits. In the absence of democratic processes, autocratic leaders struggle to discern citizens' preferences and identify whom to co-opt to maintain their hold on power. Effectively addressing information problems is crucial for designing welfare programs in authoritarian regimes, particularly for identifying potential opponents capable of organizing anti-regime collective action. When autocrats are more likely to spend less on costly public goods while increasing their chances of political survival through welfare provisions (Bueno de Mesquita et al. 2005; Olson 1993), these information problems affect whether autocrats target broader or selective population for welfare

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<sup>1</sup>Previous literature offers some case studies showing that authoritarian regimes do provide welfare (Tang 2000; Kwon 2005; Bader 2015; Ong 2015; Morgenbesser 2017).

provisions. The autocrats who effectively identify whom to buy off in order to avoid potential challenges do not need to design universal welfare provisions.

These challenges with elites, masses, and obtaining information about them affect welfare provision in authoritarian regimes, primarily through the way they interact with their support group. I argue that information problems shape welfare provision in authoritarian regimes in two ways. First, when autocrats rely on a broader segment of population, autocratic leaders are more likely to provide universal welfare since dictators cannot identify who are the potential opponents. Second, however, the incentive of universal welfare provisions will diminish as autocratic leaders improve their ability to solve information problems and clarify friends or foes.

This paper tests theoretical arguments with data on authoritarian regimes and welfare provisions from 1966 to 2011, showing that authoritarian welfare provision is dependent on the ruling coalition in place, but the underlying rationale is based on mechanisms for resolving information problems. I expect that strong mass party organizations have a significant impact on addressing information problems, facilitating more effective targeting, and diminishing dependence on universal welfare provisions. Using time-series cross-sectional (TSCS) data from up to 100 autocratic states, this study investigates the relationship between the nature of the ruling coalition, the level of mass party organization, and the scope of welfare provision over time, with rigorous analysis including fixed effects for countries and years. The findings show that while mass-based coalitions increase universal welfare, the effect diminishes when autocrats can effectively manage information problems, reducing the need for broad welfare provisions. It adds to our understanding of authoritarian regimes by emphasizing the role of institutionalization and coalition management in welfare distribution, providing insights into how autocratic leaders use institutions to consolidate power.

## Literature Review

Welfare provision refers to the states ability to intervene *ex post* to correct inequalities in the marketplace, and is typically viewed as mechanisms for distributing or redistributing benefits to insure individuals against risks such as job loss or illness (Moene and Wallerstein 2001; Genschel 2004). Given finite resources, how to provide welfare can be a political issue since it should be about the topic *who gets what and who gets more*. In authoritarian regimes, however, welfare provision is more than just a socioeconomic mechanism. It is a strategic tool for co-optation, allowing autocrats to maintain support while mitigating threats (Wintrobe 1998; Gerschewski 2013). This is markedly different from the welfare narratives common in democratic settings, where welfare is frequently driven by public demand. When applied to authoritarian regimes, this divergence reveals the limitations of existing literature's three grand lines of inquiry: modernization theory, power resource theory, and redistributive theory, all of which focus mainly on welfare provision in democracies.

Modernization theory, with its focus on socioeconomic developments leading to an expanded middle class that demands more welfare, does not account for welfare provision in authoritarian regimes that maintain high levels of economic development without transitioning to democracy (Lipset 1959; Wucherpfennig and Deutsch 2009; Rosenfeld 2021). This theory's reliance on democratic transitions and middle-class demands fails to capture the dynamics in autocracies where welfare can be deployed absent these conditions.

Another line of inquiry explains welfare provision through the concept of *power resources*. The power resource theory suggests that the role of bargaining power among social groups, particularly the working class, in redistributing resources matters (Korpi 2006; Bradley et al. 2003; Huber, Ragin and Stephens 1993). The working class projects its interests into government policy via two interacting mechanisms via two interacting mechanisms: trade unions in the market and leftist parties in the political arena (Bradley

et al. 2003; Rueda 2008). This theory presupposes rights and mechanisms for collective mobilization that are often suppressed or controlled in authoritarian contexts, making the direct application of this theory to autocracies problematic.

Finally, the strand of literature on welfare provision argues that income distribution matters because different levels of income inequality can shape individuals' preferences for various social policies (Meltzer and Richard 1981; Iversen and Soskice 2006). The redistributive theory defines the middle class as the social group with the median income earner (Iversen and Soskice 2006; Boix 2003; Acemoglu and Robinson 2006). Because democracy provides a universal franchise, the median income earner is the same as the median voter, and in an unequal society, the middle class may be the social group that favors higher taxes and more welfare provisions due to a lower-than-average income (Meltzer and Richard 1981; Iversen and Soskice 2006). In contrast, in an authoritarian regime, the median income earner who can influence policy-making would belong to a much smaller electorate, and the middle class is more likely to be a social group with the rich or the upper class (Yi and Woo 2014). Thus, authoritarian regimes are less likely to redistribute because they only serve the interests of the wealthy elite in order to stay in power (Wigley and Akkoyunlu-Wigley 2011).

The strategic approach to welfare provision in autocracies has added value for shoring up existing explanations (Bueno de Mesquita et al. 2005; Magaloni 2008; Magaloni and Kricheli 2010). Autocrats, facing the limitations of repression, resort to welfare as a means of securing loyalty and managing elites and masses (Kim and Gandhi 2010; Wintrobe 1998; Cassani and Tomini 2019; Rasmussen and Knutsen 2021; Meng, Paine and Powell 2023). During Mexico's authoritarian regime from 1929 to 2000, the ruling party's recruitment and co-optation of essential supporters through material benefits were critical strategies for maintaining power (Magaloni 2006). Similarly, the provision of welfare in authoritarian states, such as social assistance programs including pensions and unemployment benefits, has been observed, albeit with less extensive coverage compared to

democratic counterparts ([Logvinenko 2020; Pan 2020](#)) .

## Theory

Although studies on welfare provision predominantly focuses on democracies ([Huber, Ragin and Stephens 1993; Rothstein 2001](#)), authoritarian regimes also design various social policies to provide welfare ([Haggard and Kaufman 2012](#)). In authoritarian regimes, welfare provision is about more than just meeting social needs; it forms a crucial components of the authoritarian bargain, where citizens exchanged their support for material benefits ([Knutsen and Rasmussen 2018; Pan 2020](#)). How a leader distributes resources and welfare depends heavily on who they rely on for support.

Autocrats prioritize minimizing provision of public goods while enhancing their chances of political survival ([Bueno de Mesquita et al. 2005; Olson 1993](#)). Authoritarian leaders face fewer constraints, allowing them to focus narrowly on those essential for maintaining power. This selective attention to a smaller group of pivotal supporters makes the distribution of private goods a more cost-effective strategy for securing loyalty than the broader provision of public goods, a stark contrast to the expectations in democracies ([Bueno de Mesquita et al. 2005; Meng and Haina 2020; Duckett and Wang 2017](#)).

The formation of an authoritarian leader's coalition is a dynamic process, shaped by how they respond to threats against their rule. The leaders navigate these threats through a mix of repression and co-optation. I do not consider the option for autocrats to repress emerging powers despite repression to be one of the fundamental tools of authoritarian regimes to prevent dominant challenges against the regime ([Escribà-Folch 2012, 2013; Gerschewski 2013](#)). Repression can be too costly to manage a newly challenging power because it usually involves permanent resource losses and failure uncertainties. As a result, autocrats are more likely to repress, even when confronted with threats, if

they lack sufficient resources and confidence in their ability to win. Massive repression may be effective in the short run to eliminate immediate threats, but in the long run it can lead to preference falsification among citizens, lowering society's overall productivity (Rivera 2017, 2186). Instead of repression, I argue that autocrats must form a coalition in order to effectively manage threats.

The nature of the ruling coalition in an authoritarian regime can vary widely, encompassing diverse social groups with the potential for mobilization or strategic influence (Albertus 2015, 72; Svolik 2012; Geddes, Wright and Frantz 2014; Geddes, Wright and Frantz 2018). Among various social groups, what we have to investigate are the groups with a potential for effective threats to autocrats through intentional mobilization against regimes and access to resources that provide strategic leverage over the regime (Dahlum, Knutsen and Wig 2019, 1495). Co-optation strategies in authoritarian regimes, particularly welfare provisions, will differ depending on which coalition autocrats rely on and whether autocrats can identify their potential enemies. In other words, the extent of welfare provision in authoritarian regimes hinges more critically on the resolution of the information problems that refer to the autocrats' ability to identifying key groups for co-optation to maintain power.

The sources of threats that autocrats commonly face come from two major constituencies: elites and masses. Elites can pose an effective threat to autocrats (O'Donnell and Schmitter 1986; Geddes 1999; Cheibub, Gandhi and Vreeland 2010) and tend to be smaller and more powerful because they have a comparative advantage in investing in power (Acemoglu and Robinson 2008). Autocrats are more likely to provide private goods than public goods to co-opt the elites because they are easy to be identified and less expensive.

Autocrats can mitigate threats from elites by sharing power and establishing credible commitments that include providing elites with opportunities to participate in formal institutions (Svolik 2012). When the ruling coalition with elites becomes institutionalized,

it is more likely to have exclusive memberships, making their source of power immobile (Geddes, Wright and Frantz 2018). Such an institution-based coalition can create convergent preferences for specific social policies or selective welfare provisions, because elites should bear significant sunk costs (Knutsen and Rasmussen 2018) and lose influence as soon as they leave the institution. Political parties, for example, may offer goods to their members, who are distinguished from other institution-based elite groups such as military elites (Magaloni and Kricheli 2010; Levitsky and Way 2012; Bernhard, B. Edgell and Lindberg 2020; Reuter 2022). Military elites are also likely to prefer preserving military unity and corporate interests (Geddes, Frantz and Wright 2014; Kim and Kroeger 2018), whereas party elites seek to strengthen their party platform and increase their privileged position through party membership (Teo 2019; Magaloni and Kricheli 2010).

Authoritarian regimes also face critical information problems in discerning the genuine preferences of the general public, as opposed to democratic leaders who can rely on open elections and free media to gauge public opinions (Jiang and Yang 2016; Guriev and Treisman 2020). In the absence of these channels, autocrats have difficulty navigating the uncertainty of preference falsification. As a result, autocrats resort to providing universal welfare as a means of co-optation. This strategy allows them to gain support from the general public despite a lack of information about their preferences. Autocratic universal welfare provisions are thus a strategic move to build and maintain mass support, rather than an act of generosity. When unable to directly ascertain the public's preferences, authoritarian leaders choose universal welfare initiatives that are likely to meet a wide range of needs. In this context, autocrats with mass-based coalitions are more likely to provide universal welfare, indicating a strategic decision to secure their base of support (Kuran 1991; Wintrobe 1998; Truex and Tavana 2019).

Authoritarian leaders can also institutionalize support through the development of political parties. Parties are not just tools for elite co-optation and power-sharing (Reuter and Szakonyi 2019; Río 2022; Kavasoglu 2022) but also serve as vehicles for mass sup-

port, especially when they are well-organized and deeply rooted in public (Smith 2005; Magaloni and Kricheli 2010). Parties can be a better option for autocrats to manage information problems by eliciting information about the preference of the masses when they have mass-based organizations such as regional and local branches. Parties can be trusted sources of information and give early warning of potential discontent or sources of opposition. Thus, parties can provide a direct link between autocrats and broad masses that goes beyond clientelist exchanges (Bizzarro et al. 2018). As on-the-ground organizations, mass parties strengthen the ties between leaders and the masses and act as mechanisms for mobilizing mass supporters (Handlin 2016) and collecting information on their preferences (Reuter 2022). Consequently, mass parties, in particular, are effective in bridging the gap between leaders and the general public, enabling the regime to gather valuable information about public preferences through grassroots engagement.

**Hypothesis 1:** *When an autocrat has a mass-based ruling coalition, the autocrat is more likely to provide universal welfare than when the coalition is based on elites.*

**Hypothesis 2:** *When an autocrat has stronger mass party organization, the autocrat is more likely to provide universal welfare.*

When autocrats have a mass-based coalition, they are more likely to provide universal welfare in order to appease the population and reduce the perceived threats from masses. In other words, in the absence of precise information about public preferences, universal welfare provisions serve as a safeguard against potential threats and popular unrest.

Furthermore, party organizations effectively gather and relay information to the autocrat, they also serve as a double-edged sword by institutionalizing mass mobilization. These institutionalized masses have the potential to threaten the autocrats' hold on power. Parties that engage and organize the masses create platforms for opposition and dissent to be more effectively voiced (Handlin 2016). The infrastructure can serve as a

hub for organizing resistance, and organized mass parties can make autocrats maintain or even enhance universal welfare provisions as a means of appeasement.

However, for autocrats with mass-based coalitions, incorporating well-institutionalized mass party organizations can provide a more nuanced approach to universal welfare under information problems. Autocrats can use mass party organizations to tailor welfare provisions by gathering detailed information about public preferences ([Reuter 2022](#)). Mass party organizations help autocrats better understand constituents' needs, identify adversaries, and recognize key supporters. Autocrats can improve their surveillance capabilities to take a more strategic approach, reducing reliance on the masses and universal welfare ([Xu 2020](#)).

This leads us to a critical point regarding mass-based coalition building and the strategic use of mass party organizations. While mass-based coalitions necessitate some level of universal welfare to ensure widespread appeasement, mass party organizations can mitigate information deficiencies. The improved information flow enables more targeted welfare provisions, which can reduce universal welfare provisions. Consequently, it suggests that welfare provisions should be strategically calibrated not only to secure broad appeasement but also to sustain support with potentially less universal welfare provisions.

**Hypothesis 3:** *The amount of universal welfare an autocrat provides to mass-based coalition diminishes with greater mass party institutionalization.*

## Research Design

I test my hypotheses with unbalanced time-series cross-sectional (TSCS) data from authoritarian regimes from up to 100 autocracies between 1966 and 2011. TSCS data has the advantage of permitting tracking the correlation of multiple variables at the same time, as well as the differences between units and the longitudinal changes of individual units.

This study uses a comprehensive dataset of 222 countries from 1800 to 2020 to categorize political regimes as democracies or autocracies based on minimalist definitions of democracy. It defines democracies based on two core criteria: contestation and participation (Dahl 1971), and a country is considered democratic if its political leaders are elected through free and fair elections and meet a universal suffrage threshold (Przeworski et al. 2000; Boix, Miller and Rosato 2013). Thus, I consider a country to be an autocracy if it does not satisfy conditions for both contestation and participation.

I estimate ordinary least squares models to test my hypotheses. My models include fixed effects for countries and years addresses country- and year-specific features that are systematically related to variables in models but difficult to observe and quantify. However, this approach can raise the bar for most models, resulting in more conservative estimates. It is critical to recognize that indiscriminately including many dummies may absorb variation in legitimate and theoretically important covariates, potentially rendering significant variables insignificant (Type II error), as noted by Blaydes and Kayser (2011, 899). Additionally, I do not include the lagged dependent variable because this study attempts to trace how the levels of welfare provisions in terms of universalism vary while I lag all explanatory variables by a year to account for potential exogenous effects on welfare provisions. The main models in this article are structured as follows:

$$\begin{aligned} \text{Welfare Universalism}_{i,t} = & \beta_0 + \beta_1(\text{Mass-based Coalition}_{i,t-1}) \\ & + \beta_2(\text{Mass Party Organization}_{i,t-1}) \\ & + \mathbf{X}_{i,t-1}\beta + \gamma_i + \delta_t + \varepsilon_{i,t} \end{aligned} \tag{1}$$

$$\begin{aligned}
\text{Welfare Universalism}_{i,t} = & \beta_0 + \beta_1(\text{Mass-based Coalition}_{i,t-1}) \\
& + \beta_2(\text{Mass Party Organization}_{i,t-1}) \\
& + \beta_3(\text{Mass-based Coalition}_{i,t-1} \times \text{Mass Party Organization}_{i,t-1}) \\
& + \mathbf{X}_{i,t-1}\beta + \gamma_i + \delta_t + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

In the models,  $i$  represents countries and  $t$  denotes years. The vector  $\mathbf{X}_{i,t}$  encompasses control variables in the analysis. The quantities of interest,  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$ , capture key relationship between dependent variable and main explanatory variables. Additionally,  $\gamma_i$  denotes country-specific fixed effects, and  $\delta_t$  represents year-specific fixed effects, accounting for unobserved heterogeneity across countries and years.

## Dependent variable: Welfare universalism

The two testable hypotheses necessitate that I capture the extent of welfare provision. Derived from the V-Dem dataset, this index of welfare universalism is informed by expert coding and reflects the degree to which welfare programs within a given state are means-tested or universally accessible over a specified time period. Welfare universalism is coded by country experts using five-point ordinal scales ([Rasmussen and Pontusson 2018](#)). A value of 0 on the index signifies that there are no or extremely limited welfare state policies including education, health, retirement, unemployment, and poverty programs. A score of 1 indicates that almost all welfare state policies are means-tested, whereas a value of 2 suggests that while the majority are means-tested, a significant portion is designed to be universalistic. A midpoint score of 3 represents an even distribution between means-tested and universalistic policies. Moving towards the higher end, a score of 4 implies that the majority of welfare state policies are universalistic, albeit with a sig-

nificant portion still being means-tested. The highest value, 5, is assigned when nearly all welfare state policies are characterized by their universal nature, with a negligible proportion subjected to means-testing ([Coppedge et al. 2020](#)).

Subsequently, the V-Dem measurement model, which is a Bayesian item response theory model, converts these ordinal categories into interval-level scores. These scores represent positions on an underlying latent dimension that the ordinal categories correspond to ([Rasmussen and Pontusson 2018](#)). The index accounts for means-tested programs that target individuals who are poor, needy, or underprivileged, with cash-transfer programs typically falling into this category. In contrast, it also considers universal programs that are potentially available to all constituents, encompassing services like free education, national health care schemes, and retirement programs. It acknowledges that there may be differential benefits from these universal programs, as higher earners might receive greater advantages, such as higher unemployment benefits. Nonetheless, the crucial aspect is the potential for all to be beneficiaries.

## Explanatory variables

### Ruling coalition

This paper argues that the composition of ruling coalitions has a significant impact on the extent of welfare provision. This is because autocrats face information problems that varying levels of difficulty in identifying whom to include in their welfare programs ([H 1](#)). I identify the different ruling coalitions that affect the levels of the authoritarian welfare state into two: *Mass-based ruling coalition* and *elite-based ruling coalition*. When autocrats rely on elite-based coalitions, there exists a communication channel that enables them to resolve information problems, making it more likely for autocrats to provide welfare to their identified supporters. Conversely, in cases where autocrats have mass-based ruling coalitions, autocrats confront information problem, resulting in less precise

welfare provision.

To measure social groups that make ruling coalitions, I utilize the variable measuring the regimes' most important support group from the V-Dem data set (Dahlum, Knutsen and Wig 2019). Since the measurement on the most important support group in the regime provides various types of social groups, I can aggregate the groups into elite-based social groups and mass-based social groups according to my theoretical expectations.

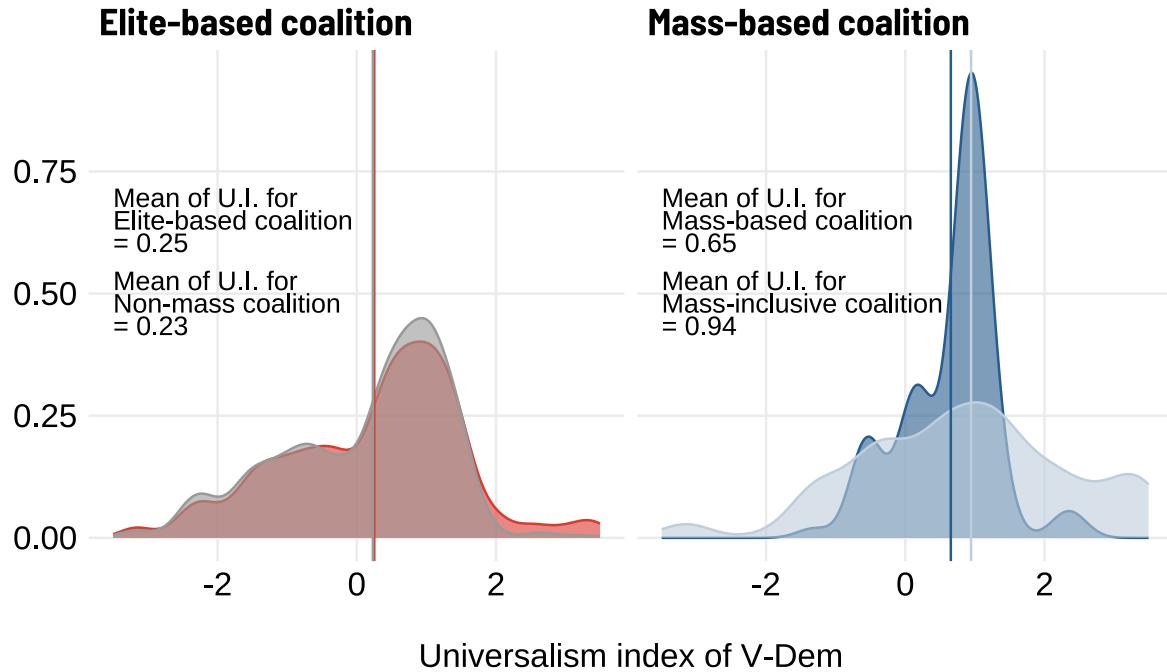
The raw variable of ruling coalition identifies the most important social groups.<sup>2</sup> Among the fourteen groups, I conceptualize *party elites* of the party and *the military* that control the executive as elite-based social groups, which is formally institutionalized, while treat urban and rural *middle* and *working classes* as mass-based social groups. Figure 1 depicts how the numbers of mass-based and elite-based class coalitions in authoritarian regimes have changed between 1960 and 2020. On average, in authoritarian regimes, ruling coalitions formed by elite-based social groups are more popular than ruling coalitions formed by mass-based social groups. In particular, mass-based coalitions mainly consist of working classes and includes several states; Armenia, Guinea, Nicaragua, Romania, Rwanda, Tunisia, and Vietnam. Those autocracies with mass-based coalitions account for 2 percent of all coalition observations in the sample.

Figure 1 shows the distribution of welfare universalism index of the well-known V-Dem project between mass-based and elite-based coalitions. The average universalism index for mass-based coalitions is greater than the mean value of institutionalized elite coalitions in authoritarian regimes between 1960 and 2020. It suggests that the welfare provision of authoritarian regimes building coalitions with mass-based social groups tends to provide universal welfare programs covering broader groups of societies than other authoritarian regimes with elite-based coalitions. This density plot suggests that

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<sup>2</sup>Party elites, the military, the ethnic/racial groups, the religious groups, agrarian elites, local elites, business elites, civil servants, urban working, rural working, urban middle, rural middle, the aristocracy, a foreign government or colony.

there can be a possible association between class coalitions and universal welfare provision as I expect.



Note: The figure presents two panels comparing the distribution of welfare universalism in elite-based (left) and mass-based (right) coalitions. The solid areas represent the primary data for each type of coalition, while the lighter shaded areas show alternative measurements for non-mass and mass-inclusive coalitions, respectively. The value of zero indicates the point where welfare policies are equally divided between means-tested and universalistic approaches.

Figure 1: Distribution of the universalism index of V-Dem by mass-based coalition and elite-based coalition, 1960-2020

## Mass party organization

Another key explanatory variable is the level of institutionalization for masses. One way that autocrats can institutionalize threats from masses is to establish party organization based masses. Mass-based party organization works as a channel for autocrats to mobilize mass support and gather information of masses. Following [Reuter \(2022\)](#), I use a variable of mass party organization, which sums up three measures from the Varieties

of Party Identity and Organization (V-Party) dataset: local organizational activity and local branch extensiveness, local organizational extensiveness, and ties to social organizations. I expect that highly institutionalized mass party can solve information problems by allowing autocrats to identify potential dissenters and supporters among masses and absorb the influence of mass-based coalition on welfare provisions, resulting in less universal provisions than without mass-based party organizations.

## Control variables

Authoritarian regimes employ a variety of strategies to maintain power. Although this study focuses on co-optation and welfare provision, information problems can also influence a dictator's decision to use another strategy, repression. Investigating the relationship between authoritarian welfare provision and information problems should be accompanied by a consideration of repression. If autocrats can afford repression, they should not have to make concessions ([Acemoglu and Robinson 2006](#)). I use the standardized and reversed human rights protection score ([Schnakenberg and Fariss 2014](#); [Fariss 2014](#)) which shows that higher values indicate more state-led repression ([Chin, Song and Wright 2023](#)) to control a regime's ability to use repression strategies.

I also include civil war experience since welfare provision is closely related to the concern of domestic social security ([Titmuss 1974](#); [Kuhnele and Sander 2021](#)). Although the relationship between welfare provision and civil war experience can be endogenous ([Taydas and Peksen 2012](#)), a state that experienced civil war is more likely to provide universal welfare to its people than those who do not experience such turmoils ([Shalev and Gal 2018](#)). I generate a binary variable to indicate past civil war experience using the variable of number of internal armed conflicts per country in a given year. Civil war means internal armed conflicts occurred between the government of a state and one or more internal opposition group(s) without intervention from other states. I measure it using the data from the Uppsala Conflict Data Program ([Harbom, Melander and Wallensteen 2008](#);

Pettersson 2023; Davies, Pettersson and Öberg 2023).

Additionally, it is important to control the financial capacity of autocrats because their capacity to provide welfare hinges on their available resources. In this study, I include resource management capability, which can demonstrate the change in resources available to an autocrat, such as the extent of natural resources or the change in economic level or growth. Moreover, evaluating the financial capability of autocrats is essential, as their capacity to offer welfare hinges on their available funds. In this research, I consider their ability to manage resources, which reflects fluctuations in an autocrat's resources, like the availability of natural resources or shifts in economic status and growth.

On the one hand, states with substantial revenue from natural resources like oil, minerals, or gas often possess the fiscal means to implement national strategies without levying heavy taxes on their citizens (Ross 2001; Haber and Menaldo 2011; Fails 2020). I use a variable of fiscal reliance on resources that Haber and Menaldo (2011) use showing the percentage of government revenue from oil, gas, and minerals. On the other hand, the wealth of resources enables autocracies to provide universal welfare benefits, which improves social stability and strengthens the legitimacy of those in power. Economic development determines the amount of money autocrats can use to maintain peace and provide public goods (Olson 1965) and higher economic growth allows a state to invest in more universal welfare for its citizens (Han 2021). I calculate the natural logarithm of the per capita GDP. Both economic variables are obtained from the Maddison Project (Bolt and van Zanden 2014).

Expanding civil society is associated with more extensive universal welfare provision (Wucherpfennig and Deutsch 2009). I control two measures to show whether civil societies are associated with the welfare universality is controlled. One measures if civil society organizations (CSOs) routinely consults with policymakers, while another shows the extent of CSOs' participatory environment. Finally, I introduce four measures to represent different dimensions of the power base of the chief executive, such as hereditary,

military, ruling party (Coppedge et al. 2020), and personalism (Chin, Song and Wright 2023).

## Empirical Analysis

### Main results

Table 1 presents the coefficient estimates for the effect of ruling coalition (H 1) and mass party organization (H 2) on welfare universalism. All the models in Table 1 include country and year fixed effects. I include fixed effects in the models to capture possible country- and year-specific influences, but this does not preclude the possibility that some observations exert inordinate leverage on the quantity of interests (Blaydes and Kayser 2011). Since my sample includes relatively few observations for mass-based coalition than elite-based coalition, it is likely that a specific country's observations could greatly influence the results. Almost all individual-level controls exhibit the expected effects. Table C.5 in Appendix include the full models.

Model 1 test first two hypotheses (H 1 and H 2) expecting the relationship between that authoritarian regimes with mass-based coalitions and strong mass party organization, and universal welfare provision. The coefficient estimate of *Mass-Based Coalition* and *Mass Party Organization Index* are significant and positive, which mean that authoritarian regimes with key explanatory variables are more likely to provide universal welfare than autocracies with elite-based ones or weak mass party. These findings are consistent with my theoretical expectations. Also, the findings of mass party organization index align with previous research indicating that party institutions are linked to increased welfare provisions (Rasmussen and Knutsen 2021).

To test the third conditional hypothesis (H 3), Model 2 includes interaction terms between *Mass-Based Coalition* and *Mass Party Organization Index*. The coefficient estimate

Table 1: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies

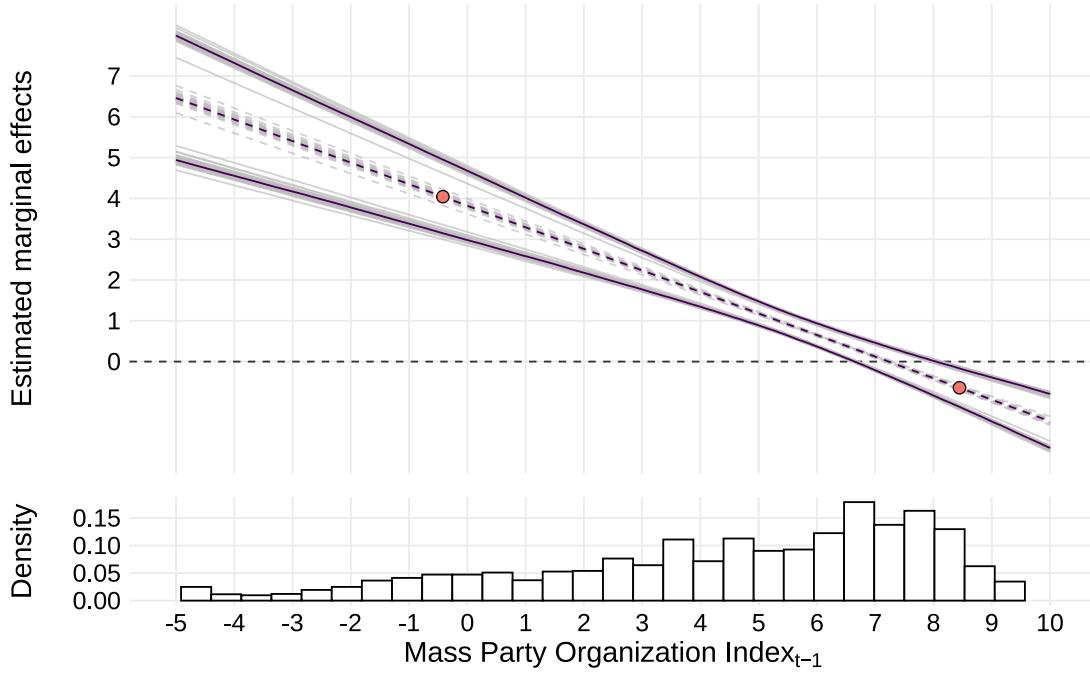
	Model 1	Model 2	Model 3	Model 4
Mass-Based Coalition (vs. Elite-Based)	0.14 (0.09)		0.81*** (0.14)	3.82*** (0.43)
Mass Party Organization Index		0.05*** (0.01)	0.04*** (0.01)	0.57*** (0.07)
Mass-Based Coalition × Mass Party Organization Index				-0.53*** (0.07)
Ln(GDPpc + 1)	-0.01 (0.05)	0.05 (0.05)	0.08 (0.05)	0.07 (0.05)
Annual GDP Growth	0.67** (0.22)	0.09 (0.20)	0.03 (0.22)	0.02 (0.22)
Resource Dependence (Per GDPpc)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.02 (0.01)
Civil War Experience	0.04 (0.03)	0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)
Repression: Human Rights	0.07** (0.03)	0.11*** (0.03)	0.13*** (0.03)	0.13*** (0.03)
CSO Consultation	0.13*** (0.02)	-0.01 (0.02)	0.04 (0.02)	0.02 (0.02)
CSO Participatory Environment	-0.05** (0.02)	0.14*** (0.02)	0.14*** (0.02)	0.13*** (0.02)
Hereditary Dimension	-0.31 (0.29)	0.60 (0.34)	0.45 (0.34)	0.43 (0.34)
Military Dimension	0.03 (0.06)	0.16** (0.06)	0.17** (0.06)	0.12 (0.06)
Ruling Party Dimension	0.37*** (0.09)	0.36*** (0.08)	0.35*** (0.09)	0.30*** (0.09)
Personalist Dimension	0.12* (0.05)	-0.15** (0.05)	-0.09 (0.05)	-0.10 (0.05)
Country-fixed	YES	YES	YES	YES
Year-fixed	YES	YES	YES	YES
No. of countries	100	100	94	94
Year coverage	1947-2011	1966-2011	1966-2011	1966-2011
AIC	3635.64	1683.89	1480.37	1424.05
BIC	3713.38	1757.82	1558.29	1507.53
No. of observation	2,922	2,180	1,931	1,931

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

of the interaction term is negative and significant, demonstrating that the impact of autocracies with a mass-based ruling coalition on universal welfare provision is diminishing as the level of mass party organization index increases, which is consistent with my theoretical argument.

Based on Model 2 of Table 1, I visualized the relationship between key explanatory

variables and welfare universalism in Figure 2, assuming that autocrats with mass-based coalitions have fewer incentives to provide universal welfare due to information problems resolved through mass party organization. Figure 2 illustrates that the impact of mass-based coalitions on universal welfare provision decreases with increasing level of mass party organization.



Note: The figure depicts the impact of mass-based coalitions on welfare universalism, with the main result from the full model highlighted in color. Each line plot is shown with 95% confidence intervals. The colored points represent the estimated marginal effects at the bottom and top ten percentiles of the mass party organization index. Grey lines represent the marginal effects of models using the jackknife method, with each model excluding one country from the analysis.

Figure 2: Marginal Effect of Mass Coalition by Mass Party Organization Level

I run cross-sectional jackknife analyses, which systematically remove each cross-sectional unit (that is, country) and re-estimates the models to check the robustness of results for the coefficient estimates for interaction between *Mass-Based Coalition* and *Mass Party Organization Index* on *Welfare universalism*. Figure 2 suggests that I have robust supporting evidence for the third hypothesis (H 3). Table 1 and Figure 2 both show that autocrats with mass-based coalitions are more likely to provide universal welfare, but

such incentives diminish when autocrats successfully institutionalize masses and resolve the information problem.

## Robustness checks

First, since I restrict my samples to authoritarian regimes, the choice of political regime measurement can affect the results. Thus, I test the same model specifications with different regime measurements. The appendix provides results from benchmark models without controls and full models with controls using different regime measurements. As alternative measurements, I use the "Regime of the World" (RoW) ([Lührmann, Tannenberg and Lindberg 2018](#)) and the "Lexical Index of Democracy" (LIED) ([Skaaning, Gerring and Bartusevicius 2015](#)) from the V-Dem dataset to create a binary variable that identifies authoritarian regimes. Appendix Tables [C.5](#) and [C.6](#) demonstrate that different regime measurements do not change the results.

Second, I create the ruling coalition variable using a measure from the V-Dem dataset that identifies regimes' most important support groups. However, this measure applies a relatively high threshold to assess the relevance of each group. Alternatively, I impose rules requiring the coalition to include at least one mass-based support group. The raw variable for regime support groups quantifies which groups the current political regime relies on to maintain power, determining which groups support the regime and whether their withdrawal would significantly impact the regime's survival probability. This variable, ranging from 0 to 1, is calculated by averaging a set of dichotomous responses to multiple selection questions. My thresholds range between 0.5 and 0.75.

When responses to support group variables exceed the 0.5 threshold, it indicates that at least half of the experts consider the group a significant part of the coalition. Using this criterion, I create a set of binary variables for various social groups, as well as additional binary variables based on different threshold values to indicate whether at least one mass-based social group is part of the ruling coalition.

Appendix Figure C.4 demonstrates the threshold effects of alternative ruling coalition measurements on universal welfare provisions, as reported in Appendix Table C.8. Models across varying thresholds (0.5 to 0.75 in increments of 0.05) produce consistent results that align with the main findings. Increasing the threshold tightening the criteria for a mass-inclusive coalition strengthens the effect size of key explanatory variables. It follows my theoretical expectation as a higher threshold ensures a ruling coalition includes more definitively mass-based social groups.

Figure C.4 demonstrates the threshold effects of alternative ruling coalition measurements on universal welfare provisions, as reported in Appendix Table C.8. Models across varying thresholds (0.5 to 0.75 in increments of 0.05) produce consistent results that align with the main findings. Increasing the threshold, thereby tightening the criteria for a mass-inclusive coalition, strengthens the effect size of key explanatory variables. This aligns with my theoretical expectation that a higher threshold ensures the ruling coalition includes more definitively mass-based social groups.

I also test specifications with a different set of controls to mitigate potential biases, although this typically reduces the sample size and could introduce post-treatment bias (Rasmussen and Knutsen 2021, 19). For example, if a regime's ability to use repression or its civil war experience depends on the costs of co-optation, these could be considered post-treatment, suggesting that I should test models without these controls. Additionally, control variables showing the extent of CSOs' engagement with policymaking can be endogenous to party structures. Since one of my key explanatory variables measures the level of mass party organization, it is important to test specifications without these variables. Appendix Table C.9 shows that the results remain stable when we include different combinations of controls in the full model.

Lastly, I test specifications with different lagged explanatory variables because the risk of omitting relates to confounding from similar trends or reverse causality. I lagged explanatory variables from 1 to 5 years. T1 is the same indicator in Table 1 that lagged all

explanatory variables by 1 year. Appendix Figure C.5 shows that until T3, the results are similar and consistent with the main findings.

## Conclusions

This paper investigates the dynamics of welfare provision in authoritarian regimes, emphasizing the strategy of co-opting specific societal groups to maintain power. It highlights the crucial channels that link autocratic leaders with masses, driven by the inherent information problems faced by autocrats. The study finds a significant association between the presence of mass-based coalitions or the extent of mass party organizations and the implementation of universal welfare provisions. However, as autocrats enhance their information management capabilities, particularly through the institutionalization of mass party organizations capable of detecting potential dissent, the propensity for generous welfare provision appears to diminish.

The empirical findings show that both mass-based coalitions and well-organized mass parties significantly influence the expansion of universal welfare provision. It suggests that some autocrats, despite the challenges of relying on mass supports, establish institutions that connect them to masses, aiding in threat detection and management. Nonetheless, the establishment of such institutions does not guarantee universal welfare provision. Instead, an improvement in the autocrats' ability to gather and process information can drive decrease in universal welfare provision.

This study contributes to the existing literature by investigating how coalitions and information problems influence autocratic welfare strategies. While previous research has emphasized the importance of coalition size in shaping autocratic co-optation strategies, this study focuses on the role of information problems that autocrats inherently face. I anticipate that this insight will contribute to theoretical frameworks on autocratic welfare by emphasizing the importance of information management over coalition size.

Future research can look at how different factors, both internal and external to the regime, influence welfare strategies. Furthermore, more targeted data collection is required to better understand the mechanisms that improve autocrats' information management capabilities. Such studies could shed more light on the circumstances that lead autocrats to adopt various ruling strategies, enriching our understanding of political tactics in authoritarian settings.

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# Appendix

## A Distribution of social groups in ruling coalitions, 1960-2020

### The share of mass-based and elite-based coalitions, 1960-2020

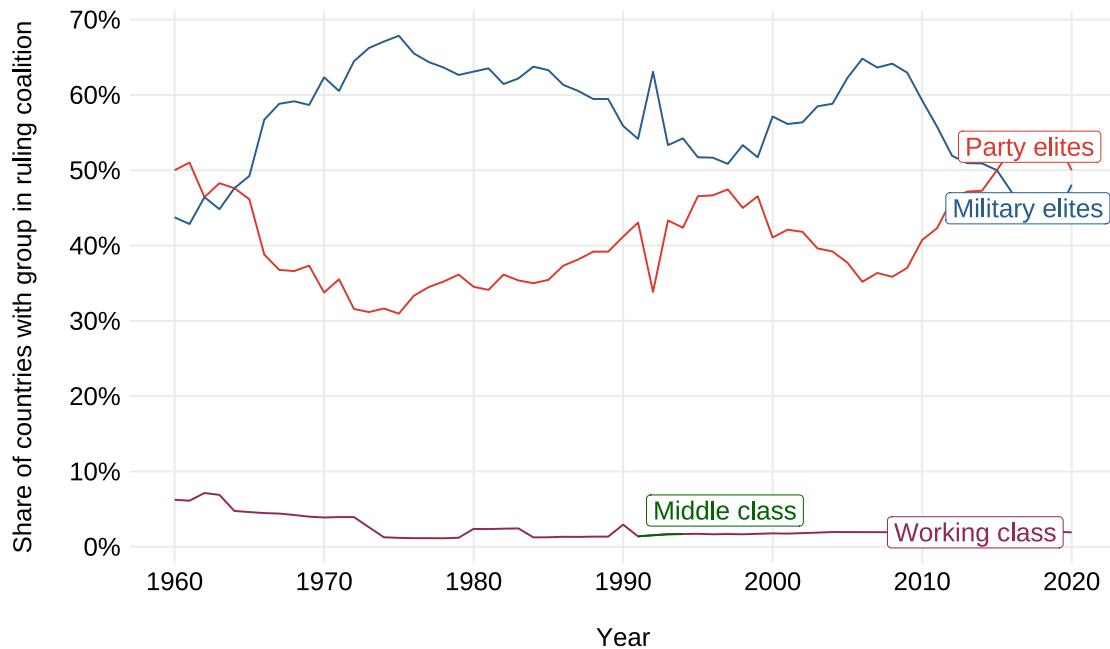


Figure A.1: The share of mass-based and elite-based coalitions, 1960-2020

Autocrats tend to maintain smaller coalitions due to the costs of gaining support (Bueno de Mesquita et al. 2005) and strive to institutionalize them in a manageable manner (Svolik 2012). Figure C.3 shows that authoritarian regimes have much more elite-based coalitions, such as military or party elites, than mass-based coalitions. However, authoritarian regimes with mass-based coalitions show varying welfare universalism. Thus, I anticipate that authoritarian regimes with mass-based coalitions will have distinct contexts for such coalitions, which justifies the inclusion of fixed effects in my models.

## B Benchmark and full models

Table B.1: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: RoW

	Model 1	Model 2	Model 3	Model 4
<i>Random Effects</i>				
Mass-Based Coalition (vs. Elite-Based)	-0.036 (0.089)		0.364*** (0.096)	0.517* (0.207)
Mass Party Organization Index		0.054*** (0.004)	0.050*** (0.005)	0.050*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.028 (0.034)
Num.Obs.	6,241	3,612	3,073	3,073
AIC	14936.1	4745.7	3739.8	3740.4
BIC	14956.3	4764.3	3764.0	3770.6
RMSE	0.80	0.47	0.44	0.44
<i>Country-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)	-0.042 (0.090)		0.364*** (0.097)	0.510* (0.212)
Mass Party Organization Index		0.054*** (0.004)	0.050*** (0.005)	0.050*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.027 (0.034)
Num.Obs.	6,241	3,612	3,073	3,073
AIC	14803.2	4635.1	3642.8	3644.2
BIC	14816.6	4647.5	3660.9	3668.3
RMSE	0.79	0.46	0.44	0.44
<i>Country-Year-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)	0.228** (0.074)		0.389*** (0.097)	0.512* (0.212)
Mass Party Organization Index		0.054*** (0.004)	0.047*** (0.005)	0.048*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.023 (0.035)
No. of Countries	146	119	110	110
Year Coverage	1900-2023	1966-2020	1966-2020	1966-2020
Num.Obs.	6,241	3,612	3,073	3,073
AIC	12076.6	4528.2	3551.7	3553.3
BIC	12090.1	4540.5	3569.8	3577.4

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table B.2: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Mass-Based Coalition (vs. Elite-Based)	0.135 (0.087)	0.814*** (0.143)	3.822*** (0.430)	0.135 (0.087)	0.814*** (0.143)	3.822*** (0.430)	0.135 (0.087)	0.814*** (0.143)	0.135 (0.087)	0.814*** (0.143)	3.822*** (0.430)	
Mass Party Organization Index	0.050*** (0.005)	0.039*** (0.006)	0.566*** (0.071)	0.050*** (0.005)	0.039*** (0.006)	0.566*** (0.071)	0.050*** (0.005)	0.039*** (0.006)	0.050*** (0.005)	0.039*** (0.006)	0.039*** (0.006)	
Mass-Based Coalition × Mass Party Organization Index			-0.528*** (0.071)			-0.528*** (0.071)			-0.528*** (0.071)		-0.528*** (0.071)	
Ln(GDPpc + 1)	-0.006 (0.048)	0.046 (0.050)	0.079 (0.054)	0.072 (0.053)	-0.006 (0.048)	0.046 (0.050)	0.079 (0.054)	0.072 (0.053)	-0.006 (0.048)	0.046 (0.050)	0.079 (0.054)	
Annual GDP Growth	0.674** (0.223)	0.088 (0.202)	0.028 (0.218)	0.017 (0.215)	0.674** (0.223)	0.088 (0.202)	0.028 (0.218)	0.017 (0.215)	0.674** (0.223)	0.088 (0.202)	0.028 (0.218)	
Resource Dependence (Per GDPpc)	0.009 (0.011)	0.007 (0.012)	0.024+ (0.013)	0.019 (0.013)	0.009 (0.012)	0.024+ (0.013)	0.019 (0.012)	0.024+ (0.013)	0.009 (0.012)	0.024+ (0.013)	0.019 (0.012)	
Civil War Experience	0.044 (0.034)	0.019 (0.031)	-0.012 (0.034)	-0.007 (0.033)	0.044 (0.034)	0.019 (0.033)	-0.012 (0.034)	-0.007 (0.033)	0.044 (0.034)	0.019 (0.033)	-0.012 (0.034)	
Repression: Human Rights	0.075** (0.026)	0.112** (0.027)	0.133*** (0.027)	0.075** (0.027)	0.112** (0.026)	0.133*** (0.027)	0.075** (0.027)	0.112** (0.027)	0.133*** (0.027)	0.075** (0.027)	0.133*** (0.027)	
CSO Consultation	0.126*** (0.018)	-0.009 (0.020)	0.037 (0.023)	0.021 (0.023)	0.126*** (0.018)	-0.009 (0.020)	0.021 (0.023)	0.037 (0.023)	0.126*** (0.018)	-0.009 (0.020)	0.037 (0.023)	
CSO Participatory Environment	-0.051** (0.017)	0.143*** (0.019)	0.135*** (0.020)	0.131*** (0.017)	-0.051** (0.019)	0.143*** (0.020)	0.135*** (0.017)	0.131*** (0.019)	-0.051** (0.020)	0.143*** (0.017)	0.135*** (0.020)	
Hereditary Dimension	-0.309 (0.294)	0.597+ (0.338)	0.448 (0.342)	0.434 (0.337)	-0.309 (0.294)	0.597+ (0.338)	0.448 (0.342)	0.434 (0.337)	-0.309 (0.294)	0.597+ (0.338)	0.448 (0.337)	
Military Dimension	0.030 (0.057)	0.160** (0.060)	0.173** (0.064)	0.117+ (0.063)	0.030 (0.057)	0.160** (0.060)	0.117+ (0.064)	0.173** (0.063)	0.030 (0.057)	0.160** (0.063)	0.117+ (0.064)	
Ruling Party Dimension	0.375*** (0.085)	0.359*** (0.079)	0.352*** (0.086)	0.296*** (0.085)	0.375*** (0.079)	0.352*** (0.086)	0.296*** (0.085)	0.352*** (0.079)	0.375*** (0.085)	0.352*** (0.079)	0.296*** (0.085)	
Personalist Dimension	0.118* (0.047)	-0.149** (0.049)	-0.087 (0.053)	-0.099+ (0.052)	0.118* (0.047)	-0.149** (0.049)	-0.087 (0.053)	-0.099+ (0.052)	0.118* (0.047)	-0.149** (0.049)	-0.087 (0.053)	
Random Effects	YES	YES	YES	NO	YES	YES	NO	NO	NO	NO	NO	
Country-Fixed	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year-Fixed	No	No	No	No	No	No	No	No	No	No	No	
Num.Obs.	2922	2180	1931	2922	2180	1931	2922	2180	1931	1931	1931	
AIC	3959.6	1959.9	1742.4	1686.0	3763.6	1773.9	1570.4	1514.0	3635.6	1683.9	1480.4	
BIC	5006.1	2818.6	2549.4	2498.7	4224.1	2103.7	1898.8	1848.0	3713.4	1757.8	1558.3	
RMSE	0.45	0.35	0.35	0.45	0.35	0.35	0.35	0.45	0.35	0.35	0.35	

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## C Robustness check

### Different regime measurements

First, I use Regimes of the World (RoW) from the Varieties of Democracy (V-Dem) dataset to create a binary variable that identifies authoritarian regimes. The RoW dataset divides regimes into four types based on Robert Dahl's polyarchy theory, which defines democracy as the presence of elected officials, free and fair elections, freedom of expression, alternative sources of information, associational autonomy, and inclusive citizenship ([Lührmann, Tannenberg and Lindberg 2018](#)). I consider a country to be an autocracy if it lacks *de facto* multi-party elections, free and fair elections, or even a minimal fulfillment of Dahl's institutional prerequisites for democracy. Alternatively, an electoral autocracy subjecting the chief executive to at least *de jure* multiparty competition qualifies.

Additionally, I use the dataset of Lexical Index of Democracy (LIED) from the V-Dem dataset, which covers all independent countries of the world from 1800 to 2021 ([Skaaning, Gerring and Bartusevicius 2015](#)). The LIED is a minimalist, procedural conception of democracy, providing information on six binary variables to identify electoral democracy: (1) elections for the legislature, (2) elections for the national executive, (3) multiparty competition, (4) male suffrage, (5) female suffrage, and (6) the quality of elections. I code a regime as an autocracy unless all six variables are coded one.

### Benchmark models

Table [C.3](#) and [C.4](#) show the results of benchmark models to assess the relationship between ruling coalition, mass party organization levels, and welfare universalism without control variables when I use alternative regime measurements. I estimate four different models with random effects, country-fixed effects, and country- and year-fixed effects. Without control variables, *Mass Party Organization Index* is consistent and significant positive across different specifications while the individual *Mass-Based Coalition* is

only significant and positive in the model with country- and year-fixed effects. Also, the interaction term between *Mass-Based Coalition* and *Mass Party Organization Index* is negative as I expect, but not statistically significant regardless of varying specifications.

Table C.3: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: RoW

	Model 1	Model 2	Model 3	Model 4
<i>Random Effects</i>				
Mass-Based Coalition (vs. Elite-Based)	-0.036 (0.089)	0.364*** (0.096)	0.517* (0.207)	
Mass Party Organization Index		0.054*** (0.004)	0.050*** (0.005)	0.050*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.028 (0.034)
Num.Obs.	6,241	3,612	3,073	3,073
AIC	14936.1	4745.7	3739.8	3740.4
BIC	14956.3	4764.3	3764.0	3770.6
RMSE	0.80	0.47	0.44	0.44
<i>Country-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)	-0.042 (0.090)	0.364*** (0.097)	0.510* (0.212)	
Mass Party Organization Index		0.054*** (0.004)	0.050*** (0.005)	0.050*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.027 (0.034)
Num.Obs.	6,241	3,612	3,073	3,073
AIC	14803.2	4635.1	3642.8	3644.2
BIC	14816.6	4647.5	3660.9	3668.3
RMSE	0.79	0.46	0.44	0.44
<i>Country-Year-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)	0.228** (0.074)	0.389*** (0.097)	0.512* (0.212)	
Mass Party Organization Index		0.054*** (0.004)	0.047*** (0.005)	0.048*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				-0.023 (0.035)
No. of Countries	146	119	110	110
Year Coverage	1900-2023	1966-2020	1966-2020	1966-2020
Num.Obs.	6,241	3,612	3,073	3,073
AIC	12076.6	4528.2	3551.7	3553.3
BIC	12090.1	4540.5	3569.8	3577.4

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table C.4: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: LIED from Skaaning et al. (2015)

	Model 1	Model 2	Model 3	Model 4
<i>Random Effects</i>				
Mass-Based Coalition (vs. Elite-Based)				
	0.067 (0.088)		0.556*** (0.102)	1.376*** (0.297)
Mass Party Organization Index				
		0.060*** (0.005)	0.057*** (0.005)	0.057*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				
			-0.138** (0.047)	
Num.Obs.	5741	3088	2659	2659
AIC	13348.9	4016.3	3163.7	3156.2
BIC	13368.8	4034.4	3187.3	3185.7
RMSE	0.77	0.46	0.44	0.44
<i>Country-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)				
	0.061 (0.089)		0.560*** (0.103)	1.384*** (0.298)
Mass Party Organization Index				
		0.060*** (0.005)	0.057*** (0.005)	0.057*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				
			-0.139** (0.047)	
Num.Obs.	5741	3088	2659	2659
AIC	13212.2	3913.6	3074.3	3067.3
BIC	13225.5	3925.6	3091.9	3090.8
RMSE	0.76	0.46	0.43	0.43
<i>Country-Year-Fixed</i>				
Mass-Based Coalition (vs. Elite-Based)				
	0.313*** (0.073)		0.553*** (0.104)	1.325*** (0.300)
Mass Party Organization Index				
		0.060*** (0.005)	0.054*** (0.005)	0.055*** (0.005)
Mass-Based Coalition × Mass Party Organization Index				
			-0.130** (0.048)	
Num.Obs.	5741	3088	2659	2659
AIC	10600.0	3840.8	3015.2	3009.2
BIC	10613.4	3852.8	3032.8	3032.8
RMSE	0.61	0.45	0.43	0.43

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

### *Full models*

Table C.5 and C.6 show the results of ordinary least squares (OLS) models to assess the relationship between ruling coalitions, mass party organization levels, and universal welfare provisions, with random effects and varying fixed effects for country and/or year, testing the research hypotheses. The first set of models with random effects, Model 1, Model 2 and Model 3, show that all key explanatory variables have coefficient estimates as I expect. *Mass-Based Coalition* and *Mass Party Organization Index* are likely to be associated with greater welfare universalism when other covariates are held constant. When I include interaction term between *Mass-Based Coalition* and *Mass Party Organization Index*, the constituent terms are still significant and positive, while the coefficient estimate of interaction term is negative and significant as I expect in the third hypothesis. Between Model 5 and 8 with only country-fixed effects and Model 9 and 12 with country- and year-fixed effects (main models), the results for quantity of interests are similar with the random effect models.

Table C.5: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: Row

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Mass-Based Coalition (vs. Elite-Based)	0.442*** (0.084)	1.189*** (0.390)	3.093*** (0.084)	0.442*** (0.055)	1.189*** (0.132)	3.093*** (0.056)	0.442*** (0.062)	1.189*** (0.062)	0.442*** (0.062)	1.189*** (0.062)	1.189*** (0.062)	3.093*** (0.390)
Mass Party Organization Index	0.058*** (0.005)	0.046*** (0.006)	0.368*** (0.062)	0.058*** (0.005)	0.046*** (0.006)	0.368*** (0.062)	0.058*** (0.005)	0.046*** (0.006)	0.058*** (0.005)	0.046*** (0.006)	0.046*** (0.006)	0.368*** (0.062)
Mass-Based Coalition × Mass Party Organization Index			-0.321*** (0.062)			-0.321*** (0.062)			-0.321*** (0.062)			-0.321*** (0.062)
Ln(GDPpc + 1)	-0.037 (0.049)	-0.009 (0.055)	0.027 (0.056)	0.020 (0.055)	-0.037 (0.049)	-0.009 (0.053)	0.027 (0.056)	-0.037 (0.055)	-0.037 (0.056)	-0.037 (0.053)	-0.037 (0.056)	1.189*** (0.390)
Annual GDP Growth	0.605** (0.227)	0.227 (0.210)	0.015 (0.224)	-0.016 (0.223)	0.605** (0.227)	0.227 (0.210)	0.015 (0.224)	-0.016 (0.223)	0.227 (0.223)	0.227 (0.223)	0.227 (0.223)	0.368*** (0.062)
Resource Dependence (Per GDPpc)	0.014 (0.012)	0.024+ (0.013)	0.047** (0.014)	0.045** (0.014)	0.014 (0.012)	0.024+ (0.013)	0.047** (0.014)	0.045** (0.014)	0.014 (0.014)	0.024+ (0.014)	0.047** (0.014)	0.045** (0.014)
Civil War Experience	0.087* (0.035)	0.023 (0.032)	0.020 (0.034)	0.087* (0.035)	0.023 (0.034)	0.020 (0.035)	0.087* (0.035)	0.023 (0.034)	0.023 (0.034)	0.087* (0.035)	0.023 (0.034)	0.020 (0.034)
Repression: Human Rights	0.072** (0.026)	0.119*** (0.027)	0.144*** (0.028)	0.144*** (0.028)	0.073** (0.026)	0.144*** (0.027)	0.119*** (0.026)	0.144*** (0.027)	0.144*** (0.028)	0.073** (0.026)	0.144*** (0.028)	0.144*** (0.028)
CSO Consultation	0.103*** (0.018)	-0.035+ (0.019)	-0.026 (0.021)	-0.033 (0.018)	0.103*** (0.019)	-0.035+ (0.021)	-0.026 (0.019)	-0.035+ (0.021)	-0.033 (0.021)	0.103*** (0.019)	-0.035+ (0.021)	-0.033 (0.021)
CSO Participatory Environment	-0.032+ (0.017)	0.141*** (0.019)	0.136*** (0.020)	0.134*** (0.020)	-0.032+ (0.017)	0.141*** (0.019)	0.136*** (0.020)	0.134*** (0.020)	0.134*** (0.020)	-0.032+ (0.019)	0.134*** (0.020)	0.134*** (0.020)
Hereditary Dimension	-0.318 (0.299)	0.478 (0.346)	0.338 (0.344)	-0.318 (0.342)	-0.318 (0.299)	0.478 (0.346)	0.338 (0.344)	-0.318 (0.342)	0.338 (0.344)	-0.318 (0.299)	0.478 (0.344)	0.338 (0.344)
Military Dimension	0.054 (0.057)	0.149* (0.062)	0.149* (0.064)	0.106+ (0.064)	0.054 (0.064)	0.149* (0.064)	0.149* (0.064)	0.106+ (0.064)	0.106+ (0.064)	0.149* (0.064)	0.149* (0.064)	0.106+ (0.064)
Ruling Party Dimension	0.415*** (0.086)	0.385*** (0.081)	0.337*** (0.087)	0.301*** (0.087)	0.415*** (0.086)	0.385*** (0.086)	0.337*** (0.087)	0.301*** (0.087)	0.301*** (0.087)	0.385*** (0.086)	0.385*** (0.087)	0.337*** (0.087)
Personalist Dimension	0.086+ (0.048)	-0.195*** (0.052)	-0.146** (0.055)	-0.158** (0.055)	0.086+ (0.048)	-0.195*** (0.055)	-0.146** (0.055)	-0.158** (0.055)	-0.158** (0.055)	0.086+ (0.055)	-0.146** (0.055)	-0.158** (0.055)
Random Effects	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
Country-Fixed	No	No	No	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year-Fixed	No	No	No	No	No	No	No	No	No	No	No	No
No. of countries	94	98	88	94	98	88	94	98	94	98	98	98
Year coverage	1966-2011	1947-2011	1966-2011	1966-2011	1947-2011	1966-2011	1947-2011	1966-2011	1947-2011	1966-2011	1947-2011	1966-2011
AIC	4286.0	2274.9	1953.8	1927.0	4090.0	2086.9	1777.8	1751.0	362.0	1966.9	1687.8	1661.0
BIC	5338.1	3143.8	2776.5	2755.3	4552.9	2418.4	2108.0	2086.8	4040.1	2071.2	1766.2	1745.0
RMSE	0.46	0.38	0.37	0.36	0.46	0.38	0.37	0.36	0.46	0.38	0.37	0.36
Num.Obs.	3018	2245	1991	1991	3018	2245	1991	1991	3018	2245	1991	1991

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

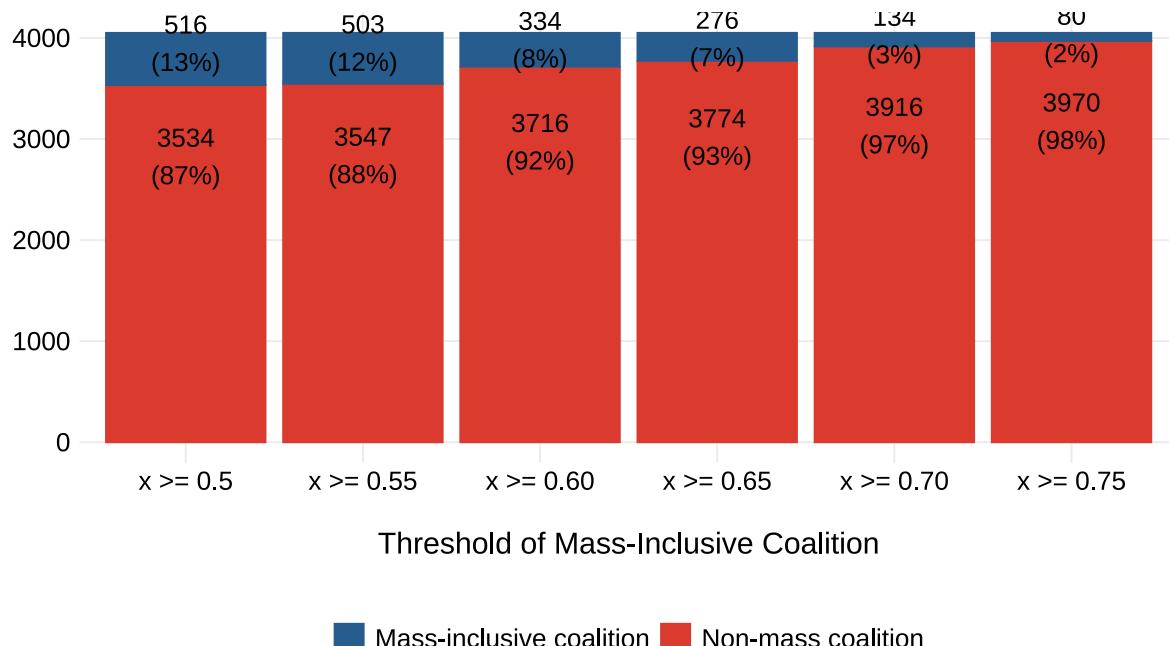
Table C.6: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: LIED from Skaaning et al. (2015)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Mass-Based Coalition (vs. Elite-Based)	0.440*** (0.084)	1.142*** (0.127)	2.904*** (0.377)	0.440*** (0.084)	1.142*** (0.127)	2.904*** (0.377)	0.440*** (0.084)	1.142*** (0.127)	2.904*** (0.377)	1.142*** (0.127)	2.904*** (0.377)	
Mass Party Organization Index	0.053*** (0.005)	0.046*** (0.006)	0.343*** (0.060)	-0.297*** (0.060)	0.053*** (0.005)	0.046*** (0.006)	0.343*** (0.060)	0.053*** (0.005)	0.046*** (0.006)	0.343*** (0.060)	0.343*** (0.060)	
Mass-Based Coalition × Mass Party Organization Index												-0.297*** (0.060)
Ln(GDPpc + 1)	-0.042 (0.049)	-0.002 (0.051)	0.053 (0.054)	-0.042 (0.049)	-0.002 (0.054)	0.053 (0.054)	-0.042 (0.049)	-0.042 (0.054)	-0.042 (0.054)	-0.002 (0.051)	0.053 (0.054)	0.045 (0.054)
Annual GDP Growth	0.641** (0.227)	0.058 (0.206)	-0.066 (0.219)	0.641** (0.218)	0.058 (0.227)	-0.066 (0.206)	0.641** (0.218)	0.058 (0.227)	0.641** (0.227)	0.058 (0.227)	-0.066 (0.219)	-0.096 (0.218)
Resource Dependence (Per GDPpc)	0.010 (0.012)	0.005 (0.012)	0.027** (0.013)	0.026* (0.013)	0.010 (0.012)	0.005 (0.012)	0.027* (0.013)	0.026* (0.013)	0.027* (0.013)	0.010 (0.012)	0.005 (0.012)	0.026* (0.013)
Civil War Experience	0.118*** (0.035)	0.066* (0.031)	0.025 (0.034)	0.118*** (0.034)	0.032 (0.035)	0.066* (0.034)	0.025 (0.034)	0.032 (0.034)	0.118*** (0.034)	0.066* (0.034)	0.025 (0.034)	0.032 (0.034)
Repression: Human Rights	0.034 (0.027)	0.072** (0.027)	0.095*** (0.028)	0.034 (0.027)	0.072** (0.027)	0.095*** (0.027)	0.072** (0.027)	0.095*** (0.027)	0.072** (0.027)	0.034 (0.027)	0.072** (0.027)	0.095*** (0.027)
CSO Consultation	0.131*** (0.019)	-0.004 (0.020)	0.043+ (0.023)	0.131*** (0.023)	-0.004 (0.019)	0.043+ (0.023)	0.131*** (0.023)	-0.004 (0.023)	0.131*** (0.023)	-0.004 (0.023)	0.043+ (0.023)	0.034 (0.023)
CSO Participatory Environment	-0.043* (0.018)	0.154** (0.019)	0.131*** (0.020)	-0.043* (0.018)	0.154*** (0.020)	-0.043* (0.018)	0.154*** (0.020)	-0.043* (0.018)	0.154*** (0.020)	-0.043* (0.018)	0.154*** (0.020)	0.095*** (0.020)
Hereditary Dimension	-0.166 (0.312)	0.948* (0.373)	0.805* (0.371)	-0.166 (0.312)	0.948* (0.371)	-0.166 (0.312)	0.948* (0.371)	-0.166 (0.312)	0.948* (0.371)	-0.166 (0.312)	0.948* (0.371)	0.805* (0.371)
Military Dimension	0.098+ (0.058)	0.204*** (0.061)	0.209** (0.064)	0.098+ (0.064)	0.204*** (0.064)	0.098+ (0.064)	0.204*** (0.064)	0.098+ (0.064)	0.204*** (0.064)	0.098+ (0.064)	0.204*** (0.064)	0.166** (0.064)
Ruling Party Dimension	0.437*** (0.087)	0.357*** (0.083)	0.381*** (0.087)	0.348*** (0.087)	0.437*** (0.083)	0.357*** (0.087)	0.348*** (0.087)	0.357*** (0.087)	0.348*** (0.087)	0.437*** (0.087)	0.357*** (0.087)	0.348*** (0.087)
Personalist Dimension	0.118* (0.049)	-0.167** (0.051)	-0.132* (0.054)	-0.145** (0.054)	0.118* (0.049)	-0.167** (0.054)	0.118* (0.054)	-0.167** (0.054)	0.118* (0.054)	-0.167** (0.054)	0.118* (0.054)	-0.145** (0.054)
Random Effects	YES	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO
Country-Fixed	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Fixed	No	No	No	No	No	No	No	No	No	No	No	YES
Num.Obs.	2913	2133	1911	2913	2133	1911	2913	1911	2913	2133	1911	1911
AIC	4070.9	1985.2	1735.8	1711.3	3874.9	1799.2	1561.8	1537.3	3746.9	1709.2	1471.8	1447.3
BIC	5116.8	2840.7	2546.9	2527.9	4335.1	2127.8	1889.6	1870.6	3824.6	1782.8	1549.6	1530.6
RMSE	0.46	0.36	0.35	0.35	0.46	0.36	0.35	0.35	0.46	0.36	0.35	0.35

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## Threshold effects of alternative coalition measurements on universal welfare provision

Figure C.2 illustrates the distribution of coalitions categorized by the presence of at least one mass-based social group across varying threshold values from 0.5 to 0.75. The bars represent the number and percentage of coalitions that include (blue) or exclude (red) mass-based social groups. As the threshold increases, a higher percentage of coalitions are classified without mass-based groups, demonstrating a decrease of mass-inclusive coalition from 13% at a threshold of 0.5 to just 2% at 0.75. This visualization highlights the sensitivity of coalition classification to the threshold setting and underscores the diminishing identification of mass-based groups in coalitions as stricter criteria are applied.



Note: This figure illustrates the distribution of mass-inclusive coalitions as thresholds vary from 0.5 to 0.75. Each bar represents the percentage of coalitions that include at least one mass-based social group or include no mass-based social group, demonstrating how sensitivity to group inclusion changes with different threshold settings.

Figure C.2: Distribution of mass-inclusive coalition across varying values of thresholds

Figure C.3 shows the distribution of authoritarian regimes that have mass-inclusive coalitions or non-mass coalitions. I set the threshold value as 0.5, which implies that half and more experts evaluate certain social group(s) are part of ruling coalition as a sup-

porter of autocrats. Given threshold, autocracies with mass-inclusive coalitions varies from 9% to 20% in the sample.

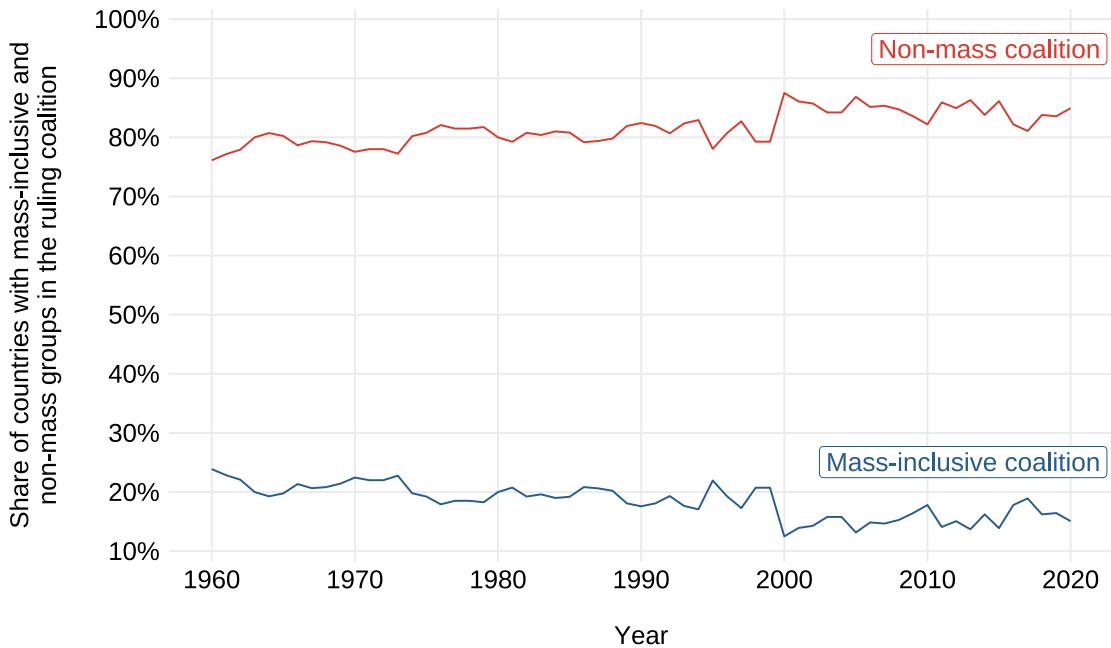


Figure C.3: The Share of countries with mass-inclusive and non-mass groups in the ruling coalition, 1960-2020

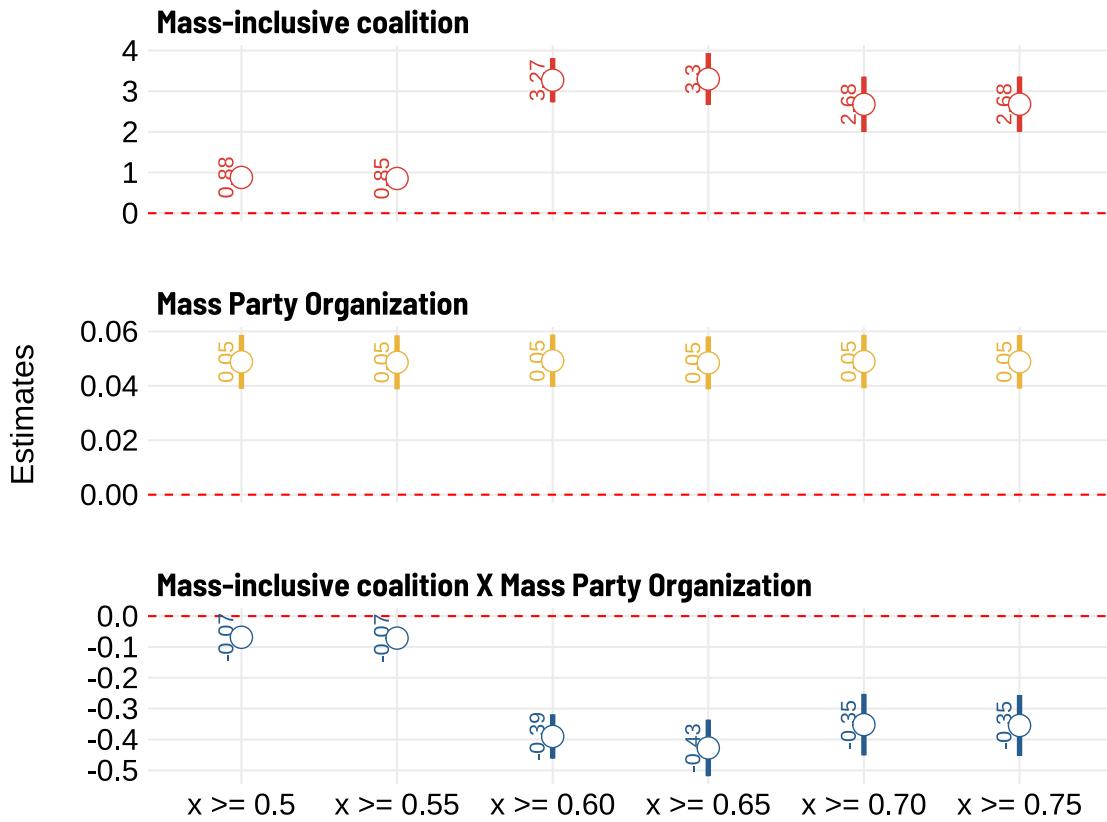
To increase confidence that the main results presented in Table 1 are consistent with my argument, I estimate same models with alternative ruling coalition variable indicating mass-inclusive or non-mass coalitions. Table C.7 represents that models with alternative measurement to ruling coalition also shows consistent and expected results as well as main results do.

Table C.8 reports the full models across varying thresholds (0.5 to 0.75 in increments of 0.05) producing consistent results that align with the main findings. Increasing the threshold tightening the criteria for a mass-inclusive coalition strengthens the effect size of key explanatory variables. It follows my theoretical expectation as a higher threshold ensures a ruling coalition includes more definitively mass-based social groups. Figure C.4 summarizes the results of Table C.8.

Table C.7: Alternative Measurement of Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies

	Model 1	Model 2	Model 3
Mass-Inclusive Coalition (vs. Non-Mass, $x \geq 0.5$ )	0.50*** (0.04)	0.46*** (0.05)	0.85*** (0.08)
Mass Party Organization Index		0.04*** (0.01)	0.05*** (0.01)
Mass-Inclusive Coalition $\times$ Mass Party Organization Index			-0.07*** (0.01)
Ln(GDPpc + 1)	0.16*** (0.04)	0.07 (0.05)	0.09 (0.05)
Annual GDP Growth	0.25 (0.18)	0.15 (0.20)	0.11 (0.20)
Resource Dependence (Per GDPpc)	-0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
Civil War Experience	0.02 (0.03)	0.02 (0.03)	0.01 (0.03)
Repression: Human Rights	0.02 (0.02)	0.07** (0.03)	0.08** (0.03)
CSO Consultation	0.05*** (0.02)	-0.02 (0.02)	-0.01 (0.02)
CSO Participatory Environment	-0.05** (0.02)	0.14*** (0.02)	0.13*** (0.02)
Hereditary Dimension	0.60*** (0.16)	0.55 (0.33)	0.60 (0.33)
Military Dimension	0.00 (0.05)	0.11* (0.06)	0.09 (0.06)
Ruling Party Dimension	0.29*** (0.08)	0.30*** (0.08)	0.30*** (0.08)
Personalist Dimension	-0.03 (0.04)	-0.16** (0.05)	-0.17*** (0.05)
Country-fixed	YES	YES	YES
Year-fixed	YES	YES	YES
Year coverage	1947-2011	1966-2011	1966-2011
No. of countries	107	93	93
AIC	4493.61	1589.11	1554.42
BIC	4574.18	1668.73	1639.72
No. of observation	3,634	2,180	2,180

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$



Note: Dots show the coefficient estimates on universal welfare provision, and vertical lines display the 95% confidence intervals.

Figure C.4: Threshold effects of mass-inclusive coalition on universal welfare provision

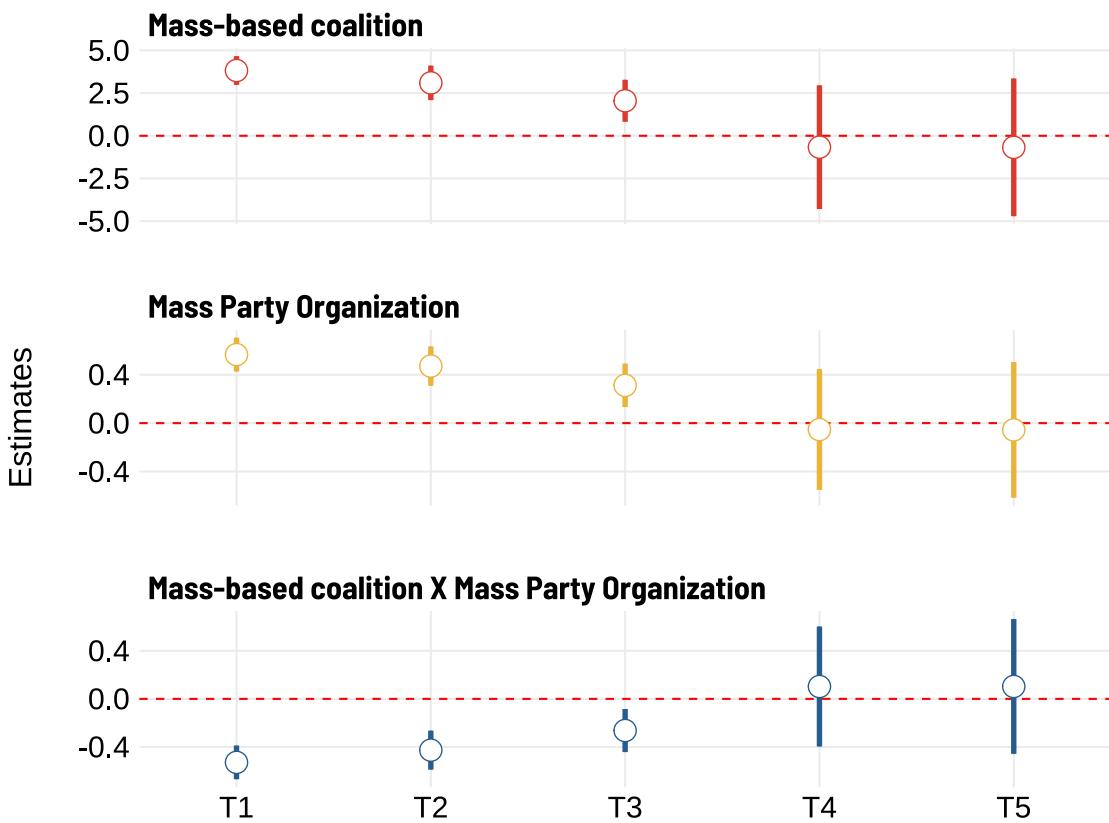
Table C.8: Alternative Measurement of Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Mass-Inclusive Coalition (vs. Non-Mass)	0.497*** (0.039)	0.465*** (0.048)	0.493*** (0.082)	0.493*** (0.040)	0.474*** (0.049)	0.486*** (0.052)	0.264*** (0.056)	0.434*** (0.079)	3.272*** (0.278)	0.314*** (0.107)	0.533*** (0.325)	0.571*** (0.095)	2.678*** (0.098)	0.371*** (0.347)	2.681*** (0.090)	0.347*** (0.086)	2.681*** (0.347)	
Mass Party Organization Index	0.043*** (0.005)	0.049*** (0.005)	0.048*** (0.005)	0.049*** (0.005)														
Mass-Inclusive Coalition $\times$ Mass Party Organization Index	-0.069*** (0.010)	-0.069*** (0.012)	-0.071*** (0.012)															
Ln(GDPpc + 1)	0.162*** (0.040)	0.072 (0.049)	0.088+ (0.040)	0.163*** (0.049)	0.073 (0.049)	0.109+ (0.049)	0.154*** (0.041)	0.065 (0.050)	0.092+ (0.049)	0.051 (0.041)	0.099+ (0.049)	0.143*** (0.049)	0.066 (0.050)	0.148*** (0.050)	0.068 (0.051)	0.068 (0.050)		
Annual GDP Growth	0.245 (0.180)	0.145 (0.198)	0.108 (0.196)	0.251 (0.181)	0.143 (0.197)	0.103 (0.196)	0.227 (0.196)	0.102 (0.196)	-0.031 (0.200)	-0.020 (0.184)	-0.086 (0.184)	-0.015 (0.184)	-0.186 (0.184)	-0.186 (0.184)	-0.186 (0.184)	-0.186 (0.184)	-0.186 (0.184)	
Resource Dependence (Per GDPpc)	-0.013 (0.010)	0.006 (0.011)	0.004 (0.011)	-0.013 (0.010)	0.006 (0.011)	0.004 (0.011)	-0.013 (0.011)	0.009 (0.010)	0.011 (0.011)	-0.013 (0.011)	0.009 (0.010)	-0.011 (0.010)	0.009 (0.010)	-0.010 (0.010)	0.009 (0.010)	-0.010 (0.010)	0.009 (0.010)	
Civil War Experience	0.024 (0.030)	0.024 (0.030)	0.014 (0.030)	0.023 (0.030)	0.024 (0.030)	0.013 (0.030)	0.024 (0.030)	0.026 (0.030)	0.023 (0.030)	0.026 (0.030)	0.023 (0.030)	0.024 (0.030)	0.024 (0.030)	0.024 (0.030)	0.024 (0.030)	0.024 (0.030)	0.024 (0.030)	
Repression: Human Rights	0.017 (0.023)	0.074** (0.025)	0.076** (0.023)	0.017 (0.025)	0.074** (0.025)	0.075** (0.025)	0.017 (0.025)	0.050** (0.025)	0.107** (0.025)	0.099** (0.025)	0.113** (0.025)	0.106** (0.025)	0.110** (0.025)	0.110** (0.025)	0.110** (0.025)	0.110** (0.025)	0.110** (0.025)	
CSO Consultation	0.052** (0.015)	-0.021 (0.020)	0.052** (0.019)	-0.021 (0.019)	0.052** (0.019)	-0.022 (0.019)	-0.022 (0.019)	0.066*** (0.016)	-0.023 (0.016)	-0.028 (0.016)	-0.028 (0.016)	-0.015 (0.016)	-0.065*** (0.016)	-0.016 (0.016)	-0.020 (0.016)	-0.020 (0.016)	-0.020 (0.016)	
CSO Participatory Environment	-0.049** (0.018)	0.134*** (0.018)	0.138** (0.018)	-0.047** (0.018)	0.140*** (0.018)	0.137*** (0.018)	0.140*** (0.018)	0.137*** (0.018)	-0.056*** (0.019)	0.149*** (0.019)	0.135*** (0.019)	-0.058*** (0.019)	0.144*** (0.019)	0.129*** (0.019)	0.153*** (0.019)	0.153*** (0.019)	0.153*** (0.019)	
Hereditary Dimension	0.595*** (0.163)	0.554+ (0.330)	0.589+ (0.328)	0.595*** (0.163)	0.556+ (0.330)	0.603+ (0.327)	0.556+ (0.166)	0.658*** (0.335)	0.576+ (0.335)	0.652*** (0.166)	0.587+ (0.336)	0.668*** (0.336)	0.588+ (0.336)	0.669*** (0.336)	0.669*** (0.336)	0.669*** (0.336)	0.669*** (0.336)	
Military Dimension	0.001 (0.052)	0.115+ (0.058)	0.094 (0.058)	0.002 (0.052)	0.115+ (0.058)	0.093 (0.052)	0.115+ (0.058)	-0.050 (0.053)	0.132* (0.059)	-0.050 (0.059)	0.144* (0.059)	0.103+ (0.059)	-0.053 (0.059)	0.150* (0.059)	-0.053 (0.059)	0.150* (0.059)	0.150* (0.059)	
Ruling Party Dimension	0.293*** (0.075)	0.293*** (0.075)	0.305*** (0.075)	0.297*** (0.075)	0.305*** (0.075)	0.305*** (0.075)	0.305*** (0.075)	0.329*** (0.075)	0.329*** (0.075)	0.329*** (0.075)	0.329*** (0.075)	0.329*** (0.075)	0.312*** (0.075)	0.312*** (0.075)	0.312*** (0.075)	0.312*** (0.075)	0.312*** (0.075)	
Personalist Dimension	-0.032 (0.042)	-0.158** (0.048)	-0.167** (0.042)	-0.030 (0.048)	-0.157** (0.048)	-0.166** (0.048)	-0.030 (0.048)	-0.165** (0.048)	-0.165** (0.048)	-0.165** (0.048)	-0.165** (0.048)	-0.165** (0.048)	-0.149** (0.048)	-0.149** (0.048)	-0.149** (0.048)	-0.149** (0.048)	-0.149** (0.048)	
Num.Obs.	3654	2180	3634	2180	3634	2180	3634	2180	3634	2180	3634	2180	3634	2180	3634	2180	3634	
AIC	493.6	1589.1	1554.4	4502.1	1586.1	1548.7	4582.7	1665.7	1634.0	4714.1	1733.5	1622.8	4716.1	1743.5	1663.2	4704.4	1750.3	1707.2
BIC	4574.2	1668.7	1639.7	4582.7	1665.7	1634.0	4714.1	1733.5	1622.8	4716.1	1743.5	1663.2	4704.4	1750.3	1707.2	4707.9	1751.1	1706.4
RMSE	0.45	0.25	0.34	0.45	0.35	0.34	0.46	0.25	0.24	0.46	0.35	0.46	0.35	0.46	0.35	0.46	0.35	0.35
Threshold	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.60	0.65	0.65	0.70	0.70	0.75	0.75	0.75	0.75	0.75
Country-Fixed	YES	YES																
Year-Fixed	YES	YES																

Note: Standard errors are shown in parentheses. + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

## Temporal effects of ruling coalition and mass party organizations on universal welfare provision in autocracies

T4 and T5 show that the temporal influences of key explanatory variables, which are lagged by 4 and 5 years respectively, on universal welfare provisions are insignificant. This may be due to the reduction in sample size or to the possibility that autocrats' strategic use of mass party organization under mass-based coalitions is not a long-term strategy.



Note: Dots show the coefficient estimates on universal welfare provision, and vertical lines display the 95% confidence intervals.

Figure C.5: Temporal effects of ruling coalition and mass party organizations on universal welfare provision in autocracies

## **Model specifications with different set of control variables**

I examine various specifications using different control variables to address potential biases, although doing so often reduces the sample size and might introduce post-treatment bias ([Rasmussen and Knutsen 2021](#), 19). For example, variables such as a regime's reliance on repression or its historical experience with civil war may depend on the costs of co-optation, making them potentially post-treatment. Therefore, testing models without these variables is crucial. Similarly, variables reflecting the degree to which civil society organizations (CSOs) are involved in policymaking might be influenced by party structures, making them endogenous to one of my key explanatory variables—the level of mass party organization. Table [C.9](#) demonstrates that the stability of results persists across different combinations of control variables included in the full model.

Table C.9: Ruling Coalitions, Mass Party Organizations, and Universal Welfare Provisions in Autocracies: Control Respecifications

	Model 1: Additive	Model 2: Multiplicative
<i>Baseline: Full Model</i>		
Mass-Based Coalition (vs. Elite-Based)	0.814*** (0.143)	3.822*** (0.430)
Mass Party Organization Index	0.039*** (0.006)	0.566*** (0.071)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.528*** (0.071)
Num.Obs.	1,931	1,931
AIC	1480.4	1424.0
BIC	1558.3	1507.5
RMSE	0.35	0.35
<i>Without Repression</i>		
Mass-Based Coalition (vs. Elite-Based)	0.836*** (0.143)	3.848*** (0.433)
Mass Party Organization Index	0.033*** (0.006)	0.561*** (0.072)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.529*** (0.072)
Num.Obs.	1,931	1,931
AIC	1504.2	1448.5
BIC	1576.5	1526.4
RMSE	0.35	0.35
<i>Without Civil War Experience</i>		
Mass-Based Coalition (vs. Elite-Based)	0.806*** (0.140)	3.840*** (0.427)
Mass Party Organization Index	0.038*** (0.006)	0.568*** (0.071)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.531*** (0.071)
Num.Obs.	1,969	1,969
AIC	1489.1	1431.3
BIC	1561.7	1509.5
RMSE	0.35	0.35
<i>Without CSO Consult</i>		
Mass-Based Coalition (vs. Elite-Based)	0.818*** (0.143)	3.859*** (0.428)
Mass Party Organization Index	0.039*** (0.006)	0.572*** (0.071)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.535*** (0.071)
Num.Obs.	1,931	1,931
AIC	1481.2	1423.0
BIC	1553.5	1500.9
RMSE	0.35	0.35
<i>Without CSO Participation</i>		
Mass-Based Coalition (vs. Elite-Based)	0.895*** (0.144)	3.977*** (0.435)
Mass Party Organization Index	0.036*** (0.006)	0.577*** (0.072)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.542*** (0.072)
Num.Obs.	1,931	1,931
AIC	1527.7	1469.8
BIC	1600.1	1547.8
RMSE	0.36	0.35
<i>Without Both CSOs</i>		
Mass-Based Coalition (vs. Elite-Based)	0.965*** (0.145)	4.334*** (0.433)
Mass Party Organization Index	0.033*** (0.006)	0.627*** (0.072)
Mass-Based Coalition $\times$ Mass Party Organization Index		-0.594*** (0.072)
Num.Obs.	1,931	1,931
AIC	1570.2	1500.4
BIC	1637.0	1572.7
RMSE	0.36	0.35

Note: Standard errors are shown in parentheses, + p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## Linear Interaction Diagnostics

Even though I manipulate the conditional marginal effect of mass-based coalitions on welfare universalism, there are some potential issues that I should consider in order to fully grasp the meaning of the multiplicative term. Instead of assuming linearity for the interaction effect, I use the binning estimator proposed by [Hainmueller, Mummolo and Xu \(2019\)](#) to determine whether the marginal effect follows a linear function. I created only two bins indicating low and high levels of mass party organization index based on the moderator's median value because increasing the number of bins necessitates a sufficient number of observations. Then I estimate the marginal effects of a mass-based coalition based on the median value per bin. Figure C.6 does not show non-linear marginal effects that contradict the linear interaction effect assumption.

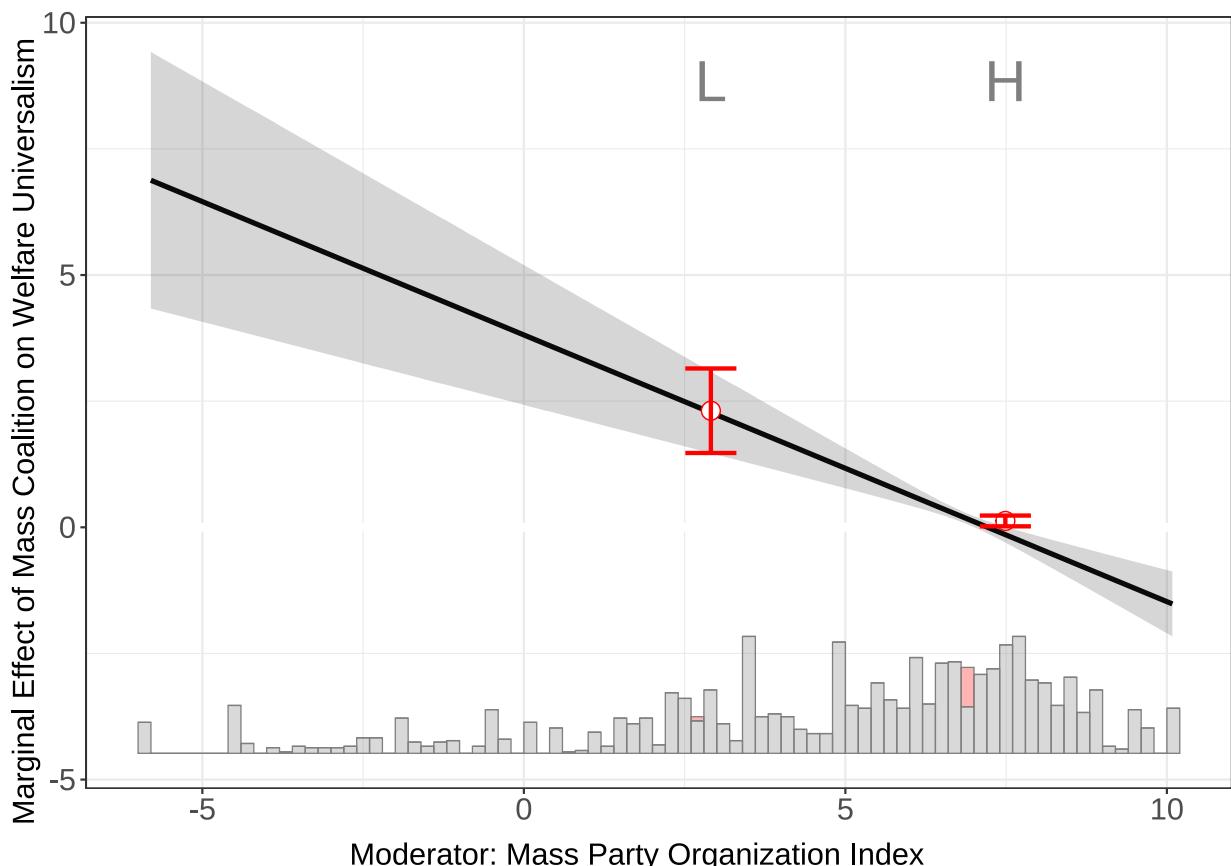


Figure C.6: Conditional marginal effects from binning estimator

## Appendix References

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