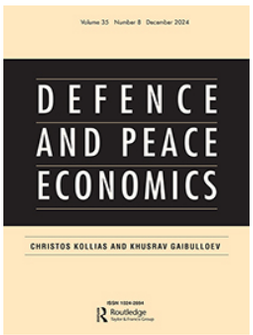

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Within Ethnic Population Inequality and within Self-Determination Movement Violence

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Abstract

Dual bargaining commonly characterizes a number of self-determination (SD) conflicts. SD organizations making self-determination claims contest the state but also contest rival SD organizations. This article examines variation in SD organization violence against other SD organizations. It hypothesizes that (i) higher levels of ethnic population inequality (WPI) are pivotal for explaining violence between SD organizations, and (ii) the relationship occurs at higher rates when an SD organization in the SD movement has previously used violence against the state. Survey-based data on WPI from 1992 to 2005 and SD organization violence demonstrate that higher WPI associates with an increased probability of an SD organization using violence against other SD organizations. The association is driven by situations in which an SD organization within the SD movement previously used violence against the state. The findings are robust to secondary analysis at the ethnic group level, inclusion of additional covariates, sensitivity tests for omitted variable bias, various model specifications, subset analyses, matching techniques and tests for reverse causality. This article demonstrates that ethnic population inequality levels as well as SD organization interactions with the state may have meaningful consequences for violent behavior between SD organizations.

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Dual bargaining characterizes a number of self-determination (SD) conflicts (Cunningham 2011). For instance, Israel and Palestinian organizations engage in conflict, but Palestinian SD organizations also fight one another. Hamas-Fatah conflicts have resulted in hundreds of deaths. Several other examples illustrate conflictual behavior between SD organizations operating in the same SD movement. The Kurdistan Workers' Party (PKK) in Turkey has engaged in significant fatal violent behavior toward rival Kurdish organizations, paralyzing society in some southeastern Turkish cities (Marcus 2009). Iraqi Kurdistan, too, witnessed fatal intra-Kurdish violence with Kurdistan Democratic Party-Patriotic Union of Kurdistan fighting (Gunter 1996).

Yet, SD organizations operating in other SD movements[1] have used lower relative amounts of violence.[2] For instance, despite a number of factors that might suggest higher organizational propensity for violence (e.g. low GDP PC levels, internal population religious diversity), Oromo SD organizations in Ethiopia have used violence against one another at lower rates compared to Iraqi and Iranian Kurdish SD organizations (data source: Cunningham, Dahl, and Frugé 2020).

Variability in violence between SD organizations[3] within the same SD movement motivates inquiry. In addition to the immediate consequences of violence, within-SD movement violence can also hurt bargaining with the state and prolong disputes. Israeli-Palestinian factors hinder resolution,

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but the Hamas-Fatah political cleavage and violence may also contribute to commitment problems and information asymmetry with Israel.[4] Civil war research suggests that relationships between rebel groups have significant implications for civil war outcomes (Akcinaroglu 2012). Examining violence at the secondary bargaining level, that is when SD organizations within an SD-claimed ethnic population use violence against one (organization-organization) another improves our understanding of broader civil war and conflict dynamics at the primary bargaining level (organization-state).

Existing research provides some understanding of the conditions in which we observe intra-opposition violence, including in civil war contexts, focusing on the economic incentives (e.g. Fjelde and Nilsson 2012) for violence. Other evidence from intra-opposition violence studies suggests that organizations making claims on behalf of an ethnic population use violence against one another at higher rates because of competition for support from a similar constituent population (e.g. Conrad et al. 2021).

A related line of literature examines SD movements, which predominantly revolve around ethnic identities and make claims on behalf of a similar constituent population, and provides evidence for competition levels within the SD movement as a factor for violence against other SD organizations (e.g. Cunningham, Bakke, and Seymour 2012). We have less understanding, however, of why some ethnic-based opposition movements see more internal violence while others see less. Existing studies on intra-SD movement violence examine less two features that may influence SD organization violence against other SD organizations. First, evidence finds within population inequality to be a predictor of ethnic violence severity against the state (e.g. Huber and Mayoral 2019), and the relationship is thought to occur through a capacity mechanism. Yet the relationship between within population inequality and other types of violence, such as intra-movement violence, has been less examined. Second, interactions with the state by other SD organizations have been understudied as a possible factor influencing an SD organization's violence against other SD organizations. That is, an SD organization's behavior may be interdependent with the behavior of other SD organizations, including their behavior toward the state (e.g. Raleigh and Choi 2017).

This article first investigates if within ethnic population income inequality (WPI), found to be a determinant of other types of violence, including ethnic violence onset (Kuhn and Weidmann 2015) and severity (Huber and Mayoral 2019) against the state, influences the probability of SD organizational violence against other SD organizations. Higher WPI is theorized to reduce the financing and participation in violence costs, resulting in both richer and poorer members of the ethnic population contributing to violence through a capacity mechanism (Esteban and Ray 2011).

It second considers a conditional relationship, which is consistent with extant evidence on the conditional effects of WPI in civil war contexts (Janus and Riera-Crichton 2015). The effect of WPI is hypothesized to be conditioned by whether an SD organization within the SD movement recently used violence against the state. Recent SD organization violence against the state is expected to increase competition levels between SD organizations, increasing incentives for violence, and resulting in WPI maintaining a larger effect. That is, capacity mechanisms (though WPI variability) are expected to occur at higher rates when incentives for violence (recent violence against the state by an SD organization) are higher.

Existing survey-based data on WPI (Huber and Mayoral 2019) are linked with data on SD organization violence against other SD organizations (Cunningham 2013; Cunningham, Bakke, and Seymour 2012) (data range: 1992–2005). OLS analysis demonstrates that higher levels of WPI associate with an SD organization using violence against other SD organizations at a higher rate. Specifically, moving from the lowest to highest WPI values is associated with an increase of <0.01% to 6.44% in the predicted probability of violence against other SD organizations.

The data moreover demonstrate a conditional relationship. The association between WPI and SD organization violence against other SD organizations is driven by SD organizations that operate in SD movements where an SD organization has recently used violence against the state. Among SD organizations where an SD organization has recently used violence against the state, moving from the lowest to highest WPI values associates with an increase of <0.01% to 10.26% in the predicted

probabilities of violence against other SD organizations. In contrast, SD organizations where an SD organization has not recently used violence against the state, different values of WPI are not statistically distinguishable from one another with regard to violence against other SD organizations.

The findings are robust to secondary analysis at the ethnic population level, inclusion of additional covariates, sensitivity tests for omitted variable bias, various model specifications, subset analyses, matching techniques, and tests for reverse causality.

This article makes three key contributions to existing studies on ethnic civil war and conflict in general and SD conflicts more specifically. First, this article relates to inquiries on the relationship between economic factors and ethnic civil war and conflict. Studies have highlighted the role of inter-ethnic population inequality on ethnic civil war, that is, civil war between an ethnic population and the state (e.g. Cederman, Weidmann, and Gleditsch 2011; Janus and Riera-Crichton 2015). Findings have demonstrated a relationship between WPI and violence onset (Kuhn and Weidmann 2015) and severity (Huber and Mayoral 2019) against the state.

Yet, studies on WPI demonstrate its effect on inter-ethnic violence, providing less guidance on the relationship between WPI and intra-ethnic population violence. By contrast, this article's contribution lies with extending findings on ethnic violence against the state to intra-self-determination (SD) movement violence. This article adds to the theoretical expectations of WPI reducing financing and participation in violence costs (Esteban and Ray 2011) by extending findings on ethnic violence against the state to a novel outcome – violence between SD organizations.

Second, and more specifically, it contributes to studies on intra-SD movement (Bakke, Cunningham, and Seymour 2012) and on intra-rebel movement violence (e.g. Warren and Troy 2015). The SD literature has addressed intra-movement violence but has focused on the causal impact of the incentives for violence stemming from intra-movement political factors (Cunningham, Bakke, and Seymour 2012) and lootable resources (Fjelde and Nilsson 2012). A related literature examines a different population – rebel groups or broader categories of militant groups – and the determinants of organization against organization violence (e.g. Bacon 2018; Christia 2012; Gade; Hafez 2020; Phillips 2019; Raleigh and Choi 2017). In complement, this article establishes empirically that intra-SD movement violence is impacted by intra-SD population economic factors.[5]

Third, this study contributes specifically to examination of dual-bargaining dynamics (e.g. Metternich et al. 2013; Rudloff and Findley 2016). Evidence suggests that factors relevant to a secondary contest (within SD factors) may influence violence in the first contest (SD actors v. the state) (e.g. Cunningham, Bakke, and Seymour 2012). By contrast, this study provides evidence that violence in the first contest (SD organization violence against the state) may influence violence in the second contest (violence against other SD organizations). By focusing on how SD-state interactions can influence within-SD dynamics, this study contributes insight into how violent behavior may result from first and second contest dynamics in dual-bargaining situations (e.g. Raleigh and Choi 2017).

WPI and Violence Against the State in Dual Bargaining Contexts

This section articulates a theoretical expectation linking (i) WPI and (ii) the interaction of WPI and an SD organization use of violence against the state with SD organization violence against other SD organizations. Dual bargaining exists between an SD movement and the government as well as within the self-determination movement (Cunningham, Bakke, and Seymour 2012). That is, an SD organization contests the state as well as other SD organizations. Facing intra-movement competitors, an SD organization may have incentives to use violence against other SD organizations. Yet, because acting violently is challenging, SD organizational violence is first theorized to be a product of its capacity for violence. Higher WPI can lower financing and labor costs (Esteban and Ray 2011), increasing an SD organization's capacity for violent tactics against other SD organizations.

Yet, the effect of WPI through a capacity mechanism may be conditional on the quality of SD organizations' interactions with the state. Using violence against the state may increase competition

levels between SD organizations. That is, an SD organization's use of violence against the state results in an SD organization mobilizing for violent tactics, which may increase political competition between SD organizations$_a$ through changes in anticipated threats, concessions, and civilian support. The increasing competition may then increase the incentives for violence against other SD organizations.

The Challenges of Violence: WPI and Capacity

An SD organization does not only contest against the state. Rather, dual bargaining exists as an SD organization commonly contests with other SD organizations for political primacy (Cunningham, Bakke, and Seymour 2012). Intra-SD movement competition can produce internal security dilemmas (Lyall 2010). Because an SD organization may face other SD organizations using violence, SD organization violence against other SD organizations may provide specific benefits, incentivizing its use. Violence can be used to neutralize an opponent before a rival SD organization attempts the same.

Despite the incentives for violence, violence is costly, and not all SD organizations are capable of violence against other SD organizations. An SD organization is thus expected to use violence against other organizations when it can.

SD organizations that operate among a population with a high level of WPI are theorized to have more capacity to use violence. Violence capacity has been theorized to require both financial resources and labor. As researchers have noticed, fighting capacity may require richer ethnic members to direct, organize, and fund the violence and poorer ethnic members to administer violence.[6] High WPI may reduce opportunity costs for both (Esteban and Ray 2011).

Importantly, WPI, and not lower overall levels of wealth and income, is expected to contribute more to violence. Lower overall income in the SD-claimed ethnic population can contribute to the supply of fighters, but violence commonly requires financing (Esteban and Ray 2011). If a high number of people in the ethnic population are poor, organizations are unable to finance violence. High WPI contributes to intra-movement violence by providing more financial resources to violence. Richer members of the SD population are more easily able to finance violence and fund poorer members to administer violence, as evidenced by the role of rich ethnic elites in leading ethnic conflict (Brubaker and Laitin 1998, Horowitz 2000; Fearon and Laitin 2000). That is, violence financing costs are low, which increases organizational capacity for violence.

High WPI first provides more financial resources for violence. Richer members of the ethnic population can more easily finance violence and fund poorer members to administer violence, increasing organizational capacity (Esteban and Ray 2011). Higher WPI and lower financing costs of violence are evidenced by studies on inter-ethnic violence (Huber and Mayoral 2019; Kuhn and Weidmann 2015).

High WPI secondly lowers the labor costs for violent tactics. Personal involvement in violence has an opportunity cost, reducing time and energy to work. Higher levels of WPI produce a larger supply of individuals with lower costs of administering violence, resulting in more potential fighters (Esteban and Ray 2011). Evidence across multiple contexts highlights economically disadvantaged individuals' disproportionate level of participation in political violence (Honaker 2011; Humphreys and Weinstein 2008). Higher WPI thus generates a larger supply of potential fighters and has been found to increase capacity[7] for ethnic violence onset (Kuhn and Weidmann 2015) and severity against the state (Huber and Mayoral 2019). High WPI is expected to have a similar effect on other situations where violence is incentivized, such as violence against other SD organizations.

In sum, violence can be used to strategically benefit an SD organization in its intra-movement political contest. Higher WPI lowers financing and labor costs, increasing an SD organization's capacity for violent tactics against other SD organizations.

H_1: An increasing level of WPI in an SD-claimed ethnic population raises an SD organization's probability of violence against other SD organizations.

The Conditioning Effect of Other SD organizations' Violence against the State

While SD disputes involve contesting the state, there exists variability in the extent of SD organization violence against the state. For instance, Kurdish organizations in Turkey have used violence against the Turkish government more frequently compared to Native American organizations use of violence against the U.S. government (source: Cunningham, Dahl, and Frugé 2020).

Variability in the use of violence against the state by SD organization$_{a1}$ in SD movement$_a$ may influence other SD organizations$_a$ to use violence against organizations in SD movement$_a$. When SD organization$_{a1}$ has recently used violence against the state, SD organization$_{a1}$ may have already devoted resources to increasing its military resources or may have increased incentives for further militarization, generating higher levels of political competition within SD movement$_a$ through three pathways.

First, SD organization$_{a1}$ violence against the state may (1) signal SD organization$_{a1}$'s willingness to threaten militarily another entity, such as SD organization$_{a2}$. SD organization$_{a2}$ may respond with increased militarization. As SD organization$_{a2}$ militarizes, an SD movement$_a$ an internal security dilemma is generated and results in heightened levels of political competition between SD organizations$_a$.

Second, SD organization$_{a1}$'s use of violence against the state may also heighten internal SD movement$_a$ competition because of changes in concession likelihood from the state. SD organization violence against the state is associated with concessions (Evidence suggests that organizations engaged in peace talks may motivate non-participating organizations to use violence; Pearlman 2009; Kydd and Walter 2002; Shedd 2008; Sisk 1993; Blaydes and De Maio 2010 for evidence from South Sudan). Concessions to SD organization$_{a1}$ in turn may generate higher levels of political competition. SD organization$_{a2}$ may lose political relevance in that it may result in a reduction in relative resources – as SD organization$_{a1}$ has obtained resources from the state as well as from civilians who may support SD organization$_{a1}$ because of the benefits gained from its attention or concessions from the state.

Third, SD organization$_{a1}$'s use of violence against the state may heighten competition levels with SD organization$_{a2}$ by changes in civilian support levels. Observational evidence from Nigeria suggests that exposure to separatist violence (actor unidentified) can increase support for a separatist organization (the Indigenous People of Biafra) (Lewis 2022). Evidence from Palestinian SD organization violence against Israel suggest an association between SD organization attacks and civilian support (Bloom 2004). SD organization$_{a1}$'s use of violence may result in civilian support, reducing absolute and relative levels of support for other SD organizations$_a$. It is possible that violence against the state may affect competition levels through changes in civilian support levels.

Higher willingness to threaten militarily, more concessions or anticipated concessions from the state, and high civilian support for SD organization$_{a1}$ may then influence internal SD movement$_a$ resource distribution, providing more resources – or anticipated resources – to SD organization$_{a1}$, the SD organization that used violence against the state. Changes in the distribution of resources may then increase intra-SD movement$_a$ political competition. That is, competition levels between SD organizations may not function solely as a result of the number of SD organizations (see also Bakke, Cunningham, and Seymour 2012 for a discussion of fragmentation and political competition conceptualizations) but also result from the fluctuations in relative strength levels.[8]

Increases in intra-SD movement$_a$ political competition may then generate incentives for violence between SD organizations$_a$ (see Azam 2001 for existing theoretical explanations for within ethnic resource distribution changes and intra-ethnic violence; see observational evidence related to material and political resources distribution fluctuations and fighting between rebel groups; Fjelde

and Nilsson 2012). Evidence for political competition, as proxied by the number of organizations within a movement and the introduction of a new organization to a movement, demonstrates an association with violence between organizations (Cunningham, Bakke, and Seymour 2012). Because other factions within the same SD movement may pose a larger immediate threat than the state (Lyall 2010), finite resources are likely to be devoted to using violence to maintain relevance or for survival (see also Cunningham, Bakke, and Seymour 2012 for a theoretical explanation linking internal political competition to intra-SD movement violence as organizations compete for political relevance.)

Because SD organization$_{a1}$ violence against the state is expected to drive competition levels between SD organizations and increase incentives for violence, WPI is expected to have a conditional relationship with SD organization violence against other SD organizations. That is, WPI is expected to affect capacity for violence, but capacity for violence is not expected to result in violence if incentives for violence approach 0. WPI is expected to have a larger effect on SD organization violence when competition between SD organizations$_a$ is higher – more specifically, under conditions of recent SD organization violence against the state.[9]

> **H_2:** The effect of WPI on SD organization$_{a1}$ violence against other SD organizations$_a$ is expected to be conditional on recency of violence against the state by an organization in the SD movement$_a$. Under conditions of more recent violence against the state by an SD organization, the effect of WPI on SD organization$_{a1}$ violence is expected to be larger.

One concern with the theoretical expectation lies with potential differences depending on which SD organization$_a$ used violence against the state. If SD organization$_{a1}$ used violence against the state, political competition within the SD movement$_a$ is expected to increase. Because political completion with SD movement$_{a2}$ is expected to increase, incentives for violence against other SD organizations for both SD organization$_{a1}$ and SD organization$_{a2}$ are expected to be generated. However, it is possible that any results may be driven by SD organization$_{a1}$ behavior (that is, the SD organization which used violence against the state), whose incentives for violence against the state as well as violence against other SD organizations$_a$ are driven by a secondary factor. In other words, an omitted variable drove SD organization$_{a1}$ to conduct violence against the state and also drove SD organization$_{a1}$ to conduct violence against SD organization$_{a2}$. And SD organization$_{a2}$ does not experience an increase in risk of violence against other SD organizations$_a$. To address this possibility, an additional theoretical expectation removes SD organizations that used recent violence against the state and were the only SD organization to do so. This theoretical expectation is designed to focus on how SD organization violence against the state generates higher political competition for all SD organizations within the SD movement and thus incentives for violence against other SD organizations$_a$.

Empirical Strategy

SD organization data with yearly measures of violence against other SD organizations (Cunningham, Dahl, and Frugé 2020) are combined with intra-ethnic population inequality data (Huber and Mayoral 2019). This produces a dataset ranging from 1992 to 2005 with SD organization-year the unit of analysis. Not all SD movements from Cunningham et al. (2020) match with the ethnic groups from Cederman et al. (2011). Approximately forty-seven percent (47/99) of SD movements are matched to an ethnic group and are included in the analysis for this article. The 99 SD movements in the Cunningham et al. dataset translates 735 SD organizations. After matching the datasets, 334 SD organizations with inequality data remain. In terms of the number of countries, 59 countries present in the Cunningham et al. dataset are reduced to 34 countries.

Variables

The dependent variable is a yearly measure of SD organization use of fatal violence against other SD organizations (Cunningham, Dahl, and Frugé 2020).

The first independent variable is a Gini coefficient of WPI. The measure is sourced from Huber and Mayoral (2019) and is developed from survey data. The measure is time invariant[10] and is developed by averaging survey-year responses per ethnic group in $country_i$.

Survey data provide a number of benefits compared to alternative WPI measures such as those based on nightlight activity. WPI measures based on nightlight activity require computing scores based on smaller area-based averages, which do not capture internal variation within each area and face challenges calculating measurements from urban areas.

Challenges with developing a Gini measure based on survey data relate to heterogenous income-related questions across distinct surveys. For cross-country comparisons, standardization is required. Based on pre-existing approaches (Solt 2009), Huber and Mayoral (2019) first calculate survey Gini country-level measures. Then, using alternative Gini country measures, a ratio-based approach is used to adjust the WPI Gini measure.[11]

The second independent variable is an interaction term of the WPI measure and a dichotomous indicator of whether an SD $organization_{a1}$ operates within an SD $movement_a$ where an SD $organization_a$ used fatal violence against the state in the previous one year (1) or did not (0) variable source: Cunningham, Dahl, and Frugé 2020). This variable indicates if any SD $organization_a$ used violence against the state or not in the previous year.

At the ethnic population-level, covariates to address possible confounders include (ln) size of the claimed SD population (the ethnic population) (see Warren and Troy 2015). Also included is the (ln) number of organizations in the SD $movement_{t-1}$ as a measure of baseline political competition (Cunningham, Bakke, and Seymour 2012; Cunningham, Dahl, and Frugé 2020). Another motivation for inclusion of the covariate is that a higher number of SD organizations may increase exponentially the opportunities for violence against other SD organizations. The number of SD organizations is especially relevant as linear increases in the number of SD organizations may then relate non-linearly to dyadic combinations and thus opportunities for violence against other SD organizations.

At the organization level, SD organizations that make independence $claims_{t-1}$ are more likely to use violence against the state (Cunningham, Bakke, and Seymour 2012), motivating inclusion of a dichotomous measure. A measure for the number of years since the SD organization engaged in violence against other SD organizations is also included in the models to address the possibility that current SD organization violence is a result of previous SD organization violence (Cunningham, Bakke, and Seymour 2012). Descriptive statistics can be found above in Table 1

Analysis

Models 1-2 regress (OLS) violence against other SD organizations on the WPI measure.[12] Although the outcome is dichotomous, OLS is used to avoid dropping a significant number of observations in the models run with country-fixed effects. Models 1 and 2 include the WPI and covariates and year-fixed effects. Model 2 also includes country FE. Standard errors are clustered at the organization level. The full models to examine H_1 (equation 1) and H_2 (equation 2) are specified as:

Equation$_1$ (H_1)

$$Y_{it} = \alpha + \beta_1 WPI_m + \beta_2 X_{it}{}' + \beta_3 X_{mt}{}' + \beta_4 X_{ct}{}' + \tau_c + \theta + {}_{it} \quad (1)$$

Table 1. Descriptive statistics of primary variables

Variable	Obs	Mean	Std. dev.	Min	Max
SD organization violence	2,696	0.02	0.15	0.00	1.00
WPI	2,696	0.34	0.09	0.24	0.69
Movement violence against state	2,696	0.42	0.49	0.00	1.00
Independence demands	2,696	0.65	0.48	0.00	1.00
Number of SD organizations$_{t-1}$, ln	2,691	1.75	0.64	0.00	3.09
SD population, ln	2,358	7.86	1.44	4.90	10.22
Country population, ln	2,696	10.49	1.6	6.56	13.86
GDP PC$_{t-1}$, ln	2,690	8.58	1.23	5.46	10.38
Democracy$_{t-1}$	2,692	0.69	0.46	0.00	1.00
Media score	2,692	1.92	0.86	1.00	4.00
Time since DV=1	2,696	12.01	10.23	0.00	46.00
Year	2,696	1998.62	3.95	1992	2005

At the country-level, country population size and economic and regime features may have confounding effects, influencing WPI and SD organization violence. Measures for (ln) country population, (ln) GDP PC$_{t-1}$, and Democracy$_{t-1}$ (based on Polity2≥6) scores are included (Coppedge et al. 2020). A measure for country media freedom is included to address possible reporting bias (Whitten-Woodring and Van Belle 2017). Country and year fixed effects are included to account for time and spatial invariant unobservables.

Equation$_2$ (H_2)

$$Y_{it} = \alpha + \beta_1 WPI_m + \beta_2 SDmovement\ recent\ violence_{mt} + \beta_3(WPI_m * SDmovement\ recent\ violence_{mt}) + \beta_4 X_{it}' + B_5 X_{mt}' + B_6 X_{ct}' + \tau_c + \theta + \varepsilon_{it} \quad (2)$$

Y_{it} reflects violence against other SD organizations per organization (*i*) during each year (*t*) whereby WPI refers to inequality levels measured at the self-determination movement (*m*) level. SD organization recent violence against the state is also measured at the *m* level during each year *t*. X_{it}' is a vector of organization covariates measured at year, X_{mt}' is a vector of self-determination movement covariates measured at each year, and X_{ct}' is a vector of country covariates measured at each year. τ_e and θ indicate country- and year-fixed effects.

The WPI measure in Models 1,2 produces a positive coefficient ($p < 0.01$), indicating a positive association between WPI and an SD organization using violence against other SD organizations. Models 1 and 2 provide support for H_1. See Table 2.

Figure 1 illustrates the predicted probabilities generated by the WPI measure and are based on Model 1. A one sample standard deviation increase from the WPI mean (0.34 to 0.43) increases the probability of violence against other SD organizations from 1.58% to 2.88%. The result is an approximately 82% increase in violence probability. Results are more substantive with comparing values at the opposite ends of the WPI spectrum. Moving from the lowest to highest WPI value is associated with an increase of <0.01% to 6.44% predicted probability of violence against other SD organizations. The results provide additional support for H_1.

H_2 specifies an association between the interaction of WPI and an SD organization$_a$'s previous violence against the state and SD organization$_{a1}$'s violence against other SD organizations$_a$. Models 3–6 regress (OLS) violence against other SD organizations on the interaction term with standard errors clustered at the organization level and the same covariates as those in Table 1. Models 3, 4 examine the full dataset. Models 5, 6 include a subset whereby SD organizational violence against the state = 0 or at least one other SD organization previously used violence against the state = 1. This is to test if another SD organization that used violence against the state influences an SD organization's use of violence against other SD organizations.

As hypothesized, the interaction term generates a positive coefficient ($p < .05$) across the four models (Table 3). The positive association between WPI and violence against other SD organizations measure is larger when an SD organization has recently used violence against the state.

Table 2. OLS regression analysis of WPI and SD organization violence, 1992–2005

VARIABLES	(1) SD organization violence	(2) SD organization violence
WPI	0.146*	0.240**
	(0.0797)	(0.113)
Independence demands	0.00727	−0.0109
	(0.00744)	(0.00855)
Movement violence against state	0.0269**	0.0142***
	(0.0107)	(0.00507)
GDP PC_{t-1}, ln	−0.00644	−0.0115
	(0.00650)	(0.0155)
Number of SD $organizationst_{t-1}$, ln	0.00282	0.0112
	(0.00565)	(0.00756)
SD population, ln	0.00247	0.00249
	(0.00537)	(0.00556)
Country population, ln	−0.00722**	0.104
	(0.00366)	(0.117)
$Democracy_{t-1}$	0.0219	0.0313**
	(0.0133)	(0.0142)
Media score	−0.00234	−0.0117
	(0.0101)	(0.00773)
Time since DV=1	−0.000505*	−0.000216
	(0.000276)	(0.000290)
Year FE	Yes	Yes
Country FE		Yes
Constant	0.0566	−1.074
	(0.101)	(1.134)
Observations	2,130	2,130
R-squared	0.049	0.094

Robust standard errors in parentheses. SE clustered on SD organization. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

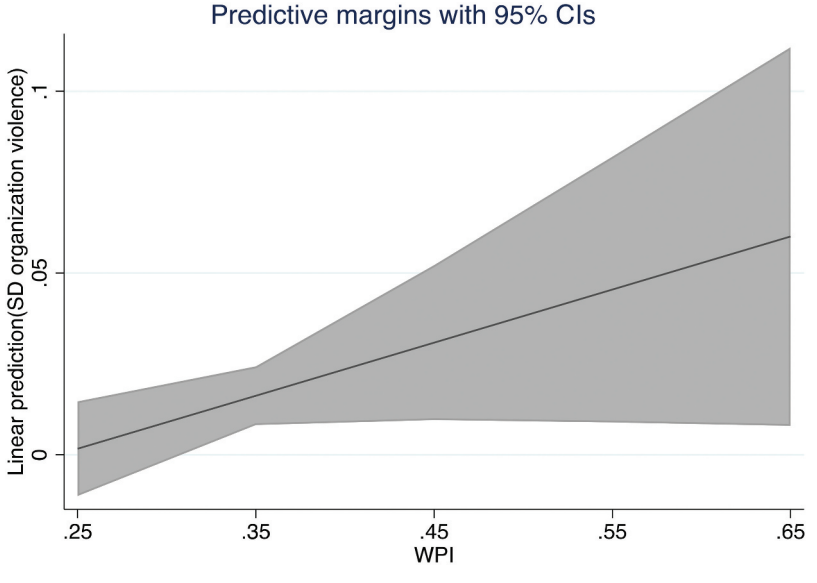

Figure 1. The effect of WPI on violence against other SD organizations.

Table 3. OLS regression analysis of WPI, SD organization recent violence against state, and SD organization violence, 1992–2005

VARIABLES	(3) SD organization violence	(4) SD organization violence	(5) SD organization violence	(6) SD organization violence
WPI	−0.0199	−0.163	−0.0606	−0.368
	(0.0478)	(0.228)	(0.0466)	(0.262)
Movement violence against state	−0.0477	−0.117*	−0.0640*	−0.186**
	(0.0310)	(0.0606)	(0.0332)	(0.0726)
Movement violence against state*WPI	0.219**	0.396**	0.233**	0.593**
	(0.0893)	(0.192)	(0.0996)	(0.229)
Independence demands	0.00875	−0.0124	0.00983	−0.00590
	(0.00738)	(0.00880)	(0.00674)	(0.00706)
GDP PC_{t-1} ln	−0.00690	−0.0155	−0.0118***	−0.0190
	(0.00650)	(0.0161)	(0.00376)	(0.0176)
Number of SD $organizationst_{t-1}$, ln	0.00140	0.00745	0.00185	0.00283
	(0.00557)	(0.00756)	(0.00436)	(0.00660)
SD population, ln	−0.000966	−0.00102	−0.00601**	−0.00519
	(0.00528)	(0.00544)	(0.00242)	(0.00432)
Country population, ln	−0.00480	0.0910	−0.00164	0.0863
	(0.00363)	(0.120)	(0.00201)	(0.118)
$Democracy_{t-1}$	0.0190	0.0272*	0.00435	0.0193
	(0.0134)	(0.0148)	(0.00808)	(0.0174)
Media score	−0.00183	−0.0103	−0.0132***	−0.0106
	(0.00995)	(0.00784)	(0.00465)	(0.00804)
Time since DV=1	−0.000437	−0.000224	−0.000549*	−0.000581
	(0.000274)	(0.000289)	(0.000286)	(0.000357)
Year FE	Yes	Yes	Yes	Yes
Country FE		Yes		Yes
Constant	0.120	−0.737	0.203***	−0.548
	(0.0990)	(1.189)	(0.0616)	(1.163)
Observations	2,130	2,130	2,017	2,017
R-squared	0.053	0.097	0.061	0.107

Robust standard errors in parentheses. SE clustered on SD organization. *** p<0.01, ** p<0.05, * p<0.1.

To address the possibility that only SD organizations that recently used violence against the state are driving the results, SD organizations that committed violence against the state in the last year and are the only SD organization to do so are set to missing values, leaving analysis to situations where no violence against the state was conducted or only SD organizations where other SD organizations in the SD movement used violence against the state. This subset analysis is designed to measure the behavior of SD $organization_{a1}$ as a result of the behavior of other organizations in SD $movement_a$. Note that a value of 1 depends on the behavior of other SD organizations in the same SD movement. The primary result is maintained when examining the subset (Models 5,6).

Predicted probabilities are graphed below in Figure 2 and are generated from models 3 and 5. Among SD organizations operating in SD movements where an SD organization did not use violence against the state in the previous year, increasing levels of WPI are not associated with an increased probability of violence against other SD organizations. When recent violence has not been used against the state, SD organizations across diverse values of WPI are statistically indistinguishable from one another with regard to violence against other SD organizations. That is, an SD organization operating in an SD population with a WPI level one standard deviation below the sample mean and an SD organization operating in an SD population with a WPI level one standard deviation above the sample mean do not have a statistically meaningful difference in predicted probability of violence against other SD organizations.

In contrast, among SD organizations operating in SD movements where an SD organization used violence against the state in the previous year, a positive association is observed between WPI and the probability of violence against other SD organizations. At the mean WPI value, the predicted

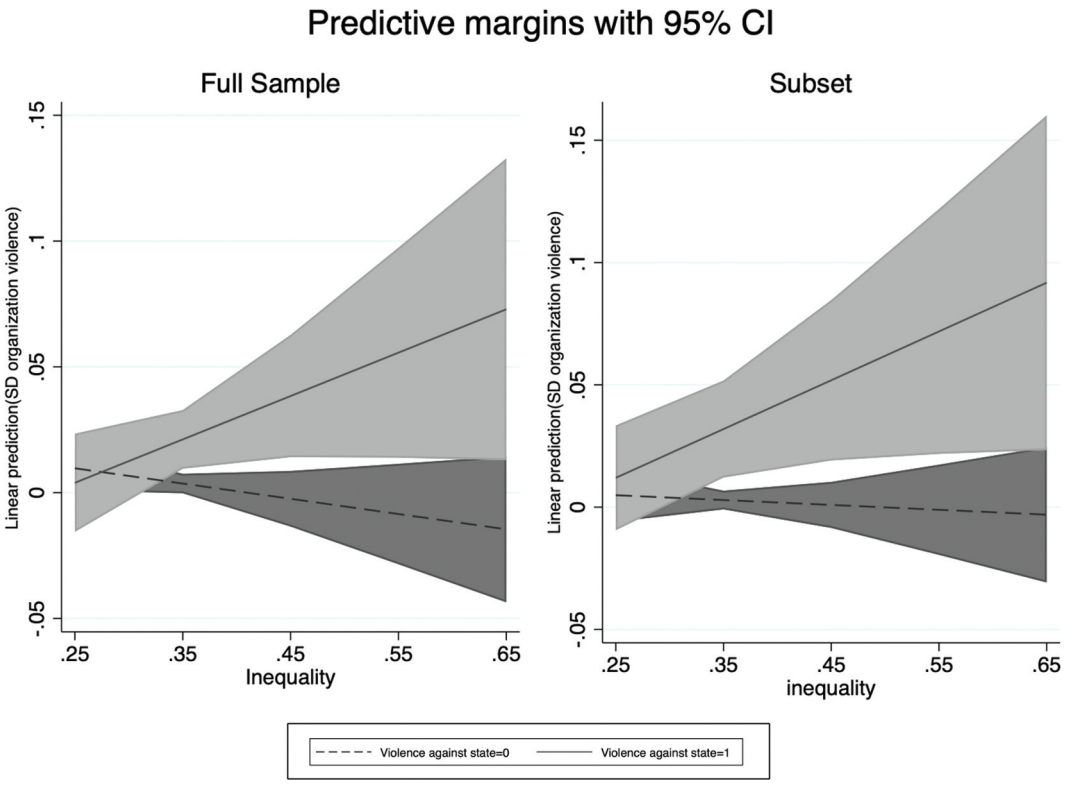

Figure 2. The effect of WPI and SD organization recent violence against the state on violence against other SD organizations

probability of violence against other SD organizations equals 2.49%. One standard deviation increase in WPI corresponds to a 4.56% predicted probability. That is, a WPI standard deviation increase is associated with an approximately 83% increase in predicted probability of violence against other SD organizations. Comparing the minimum and maximum WPI values generates predicted probabilities of < 0.01 % and 10.26%, a substantive increase. The predicted probabilities provide additional support for violence against the state conditioning the relationship of WPI and SD violence against other SD organizations. The relationship between WPI and SD violence against other SD organizations is driven by cases of recent violence against the state with no statistical evidence of WPI influencing violence against other SD organizations where recent violence against the state = 0.

Several examples illustrate the statistical relationship between WPI and violence against other SD organizations. The Moro population in the Philippines is characterized by higher levels of WPI relative to transnational and regional comparisons (0.68; highest value in sample). Despite making claims on behalf of the Moro population, fatal violence is observed between the Moro National Liberation Front (MNLF), Moro Islamic Liberation Front, and the Abu Sayyaf Group (ASG). Moro SD organizations engaged in violence against other Moro SD organizations in 8.70% of the Moro SD organization-years in the dataset (sample mean = 2.34).

WPI is high (0.44) among Iranian Kurds, and the Irani Revolutionary Organization of the Toilers of Kurdistan has used violence against other Iranian Kurdish organizations. Other prominent explanations for violence between SD organizations such as the number of organizations do not explain the violence levels. The number of Iranian Kurdish SD organizations averages ≈ 1 sample standard deviation below that of the sample mean.

Other examples include SD organizations making claims on behalf of Tuaregs and Azawad in Mali. The Tuareg population maintains a WPI level of .44 which is approximately 1 standard deviation above the sample mean. Various related SD organizations, including the Revolutionary Army for the Liberation of Azaouad, Mouvement Populaire de Liberation de l'Azaouad (MPLA), and Popular Front for the Liberation of the Azawad (PFLA) have used violence against other Azawad-based SD organizations. In the sample, 8.51% of Tuareg SD organization-years observed violence against other Tuareg SD organizations, which is more than 2.5 times greater than the sample mean.

The three examples – the Moro, Iranian Kurdish, and Azawad SD movements – illustrate SD organizations operating in contexts with above-sample average levels of previous violence with the state. The observation is concordant with a broad range of expectations that economic factors may influence violence disproportionately in contexts with incentives for violence, such as certain ethnic population sizes (e.g. Janus and Riera-Crichton 2015).

In contrast, in Ethiopia in 2000, despite several features suggestive of higher intra-SD movement violence levels, lower levels of violence between Oromo SD organizations are observed. For instance, in 2000, 11 Oromo-based SD organizations operated within a broader Oromo SD movement (sample average ≈ 5). Religiously, the population is primarily divided among Christianity and Islam with a slight majority estimated to be Muslim. Demands and tactics also differed. Differences in demands and tactics were observed among organizations such as the Oromo Peoples' Democratic Organization (OPDO), which operated in closer conjunction with the government (Gudina 2007), and the Oromo Liberation Front (OLF), which used violence at higher rates against the government. The Oromo population also experienced inter-ethnic economic discrepancies in the form of federal resource distributions disproportionate to population size and regional contributions (Gudina 2003) and maintained low absolute income levels (Oromo population corrected natural logarithm of GDPPC = 9.49; sample mean = 18.16) and anecdotal reports of relatively (to the rest of Ethiopia) low levels of public services (Gudina 2007; Ayenew 1998; Merera 2002).

Despite the high number of SD organizations, religious divisions, differences in demands and tactics, and low economic levels, we observe lower levels of violence between Oromo SD organizations compared to other SD organizations making demands on behalf of populations with higher levels of WPI (e.g. Moro population). In 2000, none of the 11 Oromo-based SD organizations used violence against other Oromo SD movement organizations. And from 1992 to 2005 Oromo SD organizations used violence against other Oromo SD organizations 2.61% of the Oromo SD organization-years. Oromo WPI is relatively low (0.29) and below the sample mean and median values (note: sample standard deviation = .089). It is possible that the relatively low WPI value may explain the relative lack of violence between Oromo SD organizations.

Further Analysis

Further analyses examine the robustness of the primary results. Tests include ethnic population-level analysis, examination of omitted variable bias, various model specifications, subset analyses, matching techniques and tests for reverse causality. All results are located in the Supplementary Information.

Because WPI is an ethnic population-level measure, further analysis is conducted on a modified dataset with the ethnic population-year as the unit of analysis. A measure for ethnic population intra-SD violence is calculated by generating the mean level of violence against other SD organizations undertaken by all of the SD organizations within an ethnic population per year. That is, a yearly dependent variable is created from the number of SD organizations using violence divided by the total number of SD organization. The resulting ratio captures the extent of intra-ethnic population violence per year at the ethnic population level. The measure for ethnic population violence is then regressed (OLS) on WPI. The WPI measure produces a positive coefficient, ($p < 0.10$), again indicating an association

between WPI and intra-SD movement violence, consistent with the SD organization-level analysis (Table B1).

Further tests examine the possibility of omitted variable bias, a concern for studies using observational data. Additional covariates are included to address possible confounders. Distinct ideologies (Gade, Hafez, and Gabbay 2019), identities (Conrad et al. 2021), and grievances (Mosinger 2018) may affect intra-opposition violence as well as WPI, raising confounding concerns. Focusing on SD movements controls somewhat for ideological distinctions (for example, as compared to studies on the Syrian opposition movement, which contains SD, religious, secular, and sectarian sub-movements; see Gade, Hafez, and Gabbay 2019). One possible intra-SD ideological distinction is demands of independence and demands limited to the confines of current state borders. A measure of the percentage of SD organizations with independence demands within the ethnic population-year is included. Inclusion of the measure does not substantively change the primary results (Table C1).

Measures for ethnic population concentration and recent political status downgrades (in previous five years) are included (variable sources: Girardin et al. 2015). Other economic and resource-related variables, ethnic population level (ln) GDP PC (measured at 1990 and 1995), the presence of diamonds and petroleum in the territory of the SD movement, are included (variable source: Huber and Mayoral 2019; see; Fjelde and Nilsson 2012 for research on lootable resources and inter-rebel group violence; see Weinstein 2006 for participation selection effects that may affect violence). To address possible demographic cofounders, measures for the relative size of the largest linguistic and religious subpopulation within the ethnic population (Girardin et al. 2015) are included. For instance, more ethnically or religiously diverse SD populations may generate or associate with more internal political differences or preferences for intra-SD population violence. A less demographically dominant linguistic or religious subpopulation may also face more challenges from other subpopulations within the ethnic population. Results for the WPI and interaction term remain mainly consistent with the primary analysis with the inclusion of the additional covariates (Tables C2-C9).[13]

Simultaneous inclusion of all the additional covariates generates results that mainly consistent with the primary findings. The main difference lies with estimating the relationship between WPI and SD organization violence against other SD organizations without country FE. A positive coefficient is estimated but a conventional level of statistical significance is not reached. The second model adds country FE and generates results consistent with primary analysis. Moreover, estimating the relationship with the interaction term generates results consistent with the primary analysis (see Table C10).

Yet, unobservables and observed measures that incompletely measure the concept of interest may still confound the primary results. Moreover, incomplete measures may result from measurement error, a concern which complicates measurement endeavors on relatively fluid populations such as ethnic groups and concepts such as wealth. While it is challenging to estimate any measurement error related to the WPI measure, sensitivity analyses can estimate the extent of unobservables – whether through omission or measurement error – required to reduce the WPI coefficient to 0. To quantify concerns over omitted variables and measurement effort, the WPI measure coefficient stability with and without additional covariates is examined, while scaling R^2 movement (Oster 2019). Oster recommends bounding an R^2_{max} value that equals the maximum R^2 value if all relevant covariates are included in the mode. To bound an R^2_{max} value, the R^2 from the primary model is bounded by $^{R2}_{max} = 1.3R^2$ (see recommendations for assuming R^2_{max}; Oster 2019).

Results from the test produce a value of 1.65 with the addition of year- and country-fixed effects, which suggest that the magnitude of coefficients from unobservables would have to be 1.65 times larger than the observables for the WPI effect to equal 0 (Table C11).

Further tests examine various model specifications. The primary models are run with logit models (Table D5) and OLS regression with standard errors clustered at the country level (Table D6). Results remain mainly consistent with the primary analysis, although $p = .20$ for the interaction term measures with country-fixed effects.

Various subset analyses are run as the primary results may be limited to certain conditions. Rather than income differentials within an SD-based population influencing violence, absolute income or economic levels may influence participation in violence. It is possible that WPI may influence SD organization violence only under conditions of low GDP PC. Countries are subset into those below and above the GDP PC mean, and the primary models rerun (Tables D1,D2). In the GDP PC >mean subset, results are inconsistent with the primary analysis. Results demonstrate that WPI, SD organization recent violence against state, and their interaction associate positively with the SD organization violence against other SD organizations measure in the GDP PC <mean subset. The effects of WPI may be limited to countries with lower GDP PC levels. Possible explanations include absolute income levels affecting participation in violence and/or government capacity to repress and deter violence between SD organizations. Future research would benefit by distinguishing between these, as well as other, explanations.

As described in the covariates section, as the number of other SD organizations increases, the number of possible dyadic interactions increases exponentially. Exponential increases in dyadic interactions suggest more opportunities and distinct baselines for violence under conditions of different numbers of SD organizations. While this challenge is a concern to the monadic research design, including a covariate for the natural logarithm of the number of SD organizations in the primary model controls for distinct baseline levels. To further address this concern, the sample is subsetted into natural logarithm of the number of SD organizations >mean and < mean. Analysis is run in each subset, and the results from both subsets are consistent with the primary analysis (D3,4).

Coarsened exact matching is employed for improved balancing of the treated and untreated observations and reducing model dependence (Iacus, King, and Porro 2012). Variables for country population (ln), ethnic population (ln), (ln) number of organizations, independence claims, democracy, (ln) GDP PC, SD organization recent use of violence against the state, and time since SD organization use of violence against other SD organizations are selected for matching. The measures for country population, ethnic population, and number of factions are first recoded into measures with three values to facilitate matching and to maintain a sufficient number of observations post-matching. After matching, imbalance improves significantly (Multivariate $L1$ moves from 0.76 to 0.16). SD organizational violence is then regressed on a dichotomous version of WPI (divvied at median value) as well as regressed on the WPI*other SD organization violence against the state (Table D7). The WPI and the interaction term measures produce positive coefficients, consistent with the primary analysis ($p < 0.05$).

To address reverse causality concerns, the WPI measure from multiple survey years is used to produce a measure for ΔWPI. The measure is based on the first and last survey years in which WPI data are available. Using the ethnic population-year dataset described above, the ΔWPI measure is regressed on the measure of the percentage of SD organizations engaged in violence. The measure for the percentage of SD organizations engaged in violence produces a negative coefficient and does not reach a conventional level of statistical significance. The results do not indicate that intra-SD movement violence is causing higher levels of WPI (Table E1).

Because there is limited within-ethnic population variability in the ΔWPI measure, additional tests are performed to address reverse causality concerns. It is possible that reverse causation occurred whereby violence in the more distant past generated WPI levels that are stable over the short term. A measure for the extent of ethnic population violence against other SD organizations from the period of 1960 to 1991 – the time period prior to the start of the current dataset – is generated. That is, a measure of SD organization violence against SD organizations aggregated at the movement level from 1960 to 1991 is generated. This measure is designed to control for the extent of intra-movement violence prior to the first year of WPI measurement. An additional measure is the natural logarithm of the number of instances of organization years of fatal violence against other SD organizations. The WPI measure is then regressed on the extent of previous violence, and a positive coefficient is generated. While the positive coefficient does not necessarily mean reverse causality is a problem and that current

WPI levels are caused by previous violence levels, it raises the possibility. Even if previous intra-movement violence is affecting current WPI levels, this does not necessarily mean the relationship is not bidirectional. However, to adjust the possibility that previous SD organization against other SD organization violence is driving both current WPI and SD organization levels, I include both a count of the number of intra-movement fatal violence events and the natural logarithm for the number of intra-movement fatal violence events. Results for the primary base inequality measure as well as the interaction term remain consistent with the main analysis. See Tables E2, E3.

Covariates

A number of covariates display consistent results across model specifications. The measure for the natural logarithm of SD organizations (lagged one year) produces a positive coefficient across the main model specifications, which is consistent with existing evidence (Cunningham et al. 2012). In models 2 and 4, the coefficient approaches a conventional level of statistical significance ($p = 0.14$). Similar coefficients and standard errors are found in Table 3, which includes the primary interaction term as a coefficient.

Two country-level factors display statistical relationships with violence toward other SD organizations. Democracy levels (lagged) relate statistically to intra-SD movement violence, as the measure generates a positive coefficient ($p < 0.05$) in the models with country FE. It is possible that democracies or democratization may provide more opportunities for SD organizations to use violence through lower costs of political mobilization and interactions with other SD organizations. The natural logarithm of the country population maintains a negative coefficient ($p < 0.05$ in Model 1) in models without country FE. It is not clear why country population may relate negatively to intra-SD movement violence.

Conclusion

Research on SD movements has addressed intra-movement political factors and intra-movement violence but has examined (i) less the effect of intra-population economic factors and (ii) possible interactive effects between internal economic factors and different violence types. This article first applies WPI, a variable theorized to be relevant for cleavages (Esteban and Ray 2012) and with evidence for its relevancy for inter-ethnic group violence (Huber and Mayoral 2019) to intra-ethnic violence for ethnic populations with SD demands. Results from OLS analysis demonstrate (i) a positive association between higher levels of WPI and SD organization use of violence against other SD organizations

This article second considers how violence dynamics in the first contest (violence against the state) may influence violence levels in the second context (between SD organizations), which is consistent with violence in other civil war and conflict settings (e.g. Raleigh and Choi 2017). The findings illustrate that (ii) the association between WPI and violence against other SD organizations is conditioned by SD organization recent use of violence against the state.

Several avenues of future research may build on the findings of this study. First, while this study controls for independence demands and previous use of violence against other SD organizations, this study assumes a certain level of homogeneity in organization type. Yet, other SD organization distinctions may interact with WPI to produce distinct levels of SD organization capacity for violence or incentives for violence. A similar approach may consider how the interaction of WPI and recent SD violence against the state may also interact with SD organization attributes. Researchers on civil war and ethnic civil war have identified rebel group attributes as relevant for variability in violent behavior (Cunningham, Gleditsch, and Salehyan 2013; Gade, Hafez, and Gabbay 2019; Vogt et al. 2015). The self-determination and ethnic conflict literatures would benefit from increased data focus on individual organization attributes – and among organizations that use violence as well as non-

violence. Such a focus would allow researchers to address why SD organizations in the same SD movement engage in different tactics.

Second, this study examines SD organization violence as a binary outcome. The current data are unable to quantify violence severity as an outcome. Future research may be done to estimate the extent of violence severity in terms of attack number or fatalities. Qualitative distinctions in violence type may also result from the interaction of WPI and recent SD movement violence.

Third, this study posits political competition changes as mediating the relationship between WPI*recent violence and SD organization violence. While the first dimension of political competition, changes in violence expectations, is challenging to observe, empirical testing the other two – attention/concessions from the state and changes in civilian support – offers further avenues for researchers and understanding of what drives SD organization to use violence against each other.

The results provide insight for policymakers. Despite attention on SD and ethnic population violence with the state, violence can also occur within the ethnic population. As violence within the ethnic population is likely to have important consequences for interactions with the state (e.g. Raleigh and Choi 2017), policymakers should pay close attention to economic factors, specifically WPI. Similarly, policymakers should be aware that incentives for violence may be insufficient for violence internal to the ethnic population. Rather, the interactive effect of capacity and incentive-related variables for violence is a determinate for when SD organizations are likely to use violence against other SD organizations.

Notes

1. An SD movement is defined as a form of collective mobilization around the same demand and on behalf of the same population. The population is commonly based on an ethnic identity. The demand relates to greater self-determination, that is, more demands for political, economic, or cultural autonomy for that population. Oromo nationalism (demands for greater Oromo autonomy or independence) illustrates an example of an SD movement.
2. This study examines fatal violence. Violence between SD organizations that does not result in at least one fatality is not examined out of theoretical and empirical concerns. There may be challenges related to observing non-fatal violence (lower likelihood to be reported) as well as conceptual challenges in classifying what constitutes non-fatal violence.
3. Within an SD movement, SD organizations are actors that have goals in line with self-determination for the ethnic population. Unlike more amorphous SD movements, SD organizations have management structures. Examples include the Oodua People's Congress, which operates within the Yoruba self-determination movement in Nigeria.
4. See, for instance, evidence on divided internal movements and bargaining dynamics, including tactic type (Pearlman 2009), concessions (Cunningham 2011), civil war onset and incidence (Cunningham 2013), repression (La Spada 2022), civil war duration (Cunningham 2006), and post-civil war peace duration (Rudloff and Findley 2016).
5. Focusing on SD movements, which primarily revolve around ethnic-based populations, is also advantageous because evidence suggests that ethnic similarity and difference may relate meaningfully to intra-opposition violence (Conrad et al. 2021). Limiting the study's scope to SD movements holds constant ethnicity and a demand type (SD-related demands) between organizations.
6. Governments too may rely on poorer members to administer violence as evidenced by Mauritania's use of the Black Moors (Haratines) to attack and loot Black Africans' lives and property while White Moors (Beydans) oversaw the violence of 1990-91 (Fleischman 1994).
7. Note that other factors may also influence organization capacity and thus violence against other SD organizations. External support, organizational structure, and variability in relations with civilians may influence violence through a capacity mechanism. Alternative explanations that may influence violence through capacity are empirically examined.
8. See also evidence that fluctuations in competition levels may relate to rebel organizational targeting of civilians (Wood and Kathman 2015).
9. See also evidence in DR-Congo and South Sudan that violence among one actor type may result from violence across actor types (Raleigh and Choi 2017).
10. According to the Huber and Mayoral (2019) data, WPI changes slowly. Their study includes a WPI measure (termed G^R-Pre) that is calculated based on surveys prior to year t. The correlation between the time invariant

(average) WPI measure and the G^R-Pre is high ($r = .94$), suggesting WPI changes slowly over time. See Table 5 in their Appendix.

11. Measurement error is a concern for subnational Gini measurements. Notably the Huber and Mayoral Gini measure and the country-level SWIID Gini measures, in contrast to some existing WPI measures based on nightlights, all display symmetry surrounding their means, generating confidence in the survey-based approach (Huber and Mayoral 2019, Appendix C).
12. Logit models are run in robustness checks.
13. The coefficient for the WPI measure does not reach a conventional level of statistical significance with inclusion of relative size of the largest linguistic subpopulation and the petroleum in the models without country FE. The models with the interaction term remain consistent, however.

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References

Akcinaroglu, S. 2012. "Rebel Interdependencies and Civil War Outcomes." *Journal of Conflict Resolution* 56 (5): 879–903. https://doi.org/10.1177/0022002712445741.

Ayenew, M. 1998. *Some Preliminary Observations on Institutional and Administrative Gaps in Ethiopia's Decentralization Processes. Regional and Local Development Studies*. Addis Ababa, Ethiopia: Addis Ababa University.

Azam, J. P. 2001. "The Redistributive State and Conflicts in Africa." *Journal of Peace Research* 38 (4): 429–444. https://doi.org/10.1177/0022343301038004002.

Bacon, T. 2018. "Is the Enemy of My Enemy My Friend? How Rerrorist Groups Select Partners." *Security Studies* 27 (3): 345–378.

Bakke, K. M., K. G. Cunningham, and L. J. Seymour. 2012. "A Plague of Initials: Fragmentation, Cohesion, and Infighting in Civil Wars." *Perspectives on Politics* 10 (2): 265–283. https://doi.org/10.1017/S1537592712000667.

Blaydes, L., and J. De Maio. 2010. "Spoiling the Peace? Peace Process Exclusivity and Political Violence in North-Central Africa." *Civil Wars* 12 (1–2): 3–28. https://doi.org/10.1080/13698249.2010.484896.

Bloom, M. M. 2004. "Palestinian Suicide Bombing: Public Support, Market Share, and Outbidding." *Political Science Quarterly* 119 (1): 61–88. https://doi.org/10.2307/20202305 .

Brubaker, R., and D. D. Laitin. 1998. "Ethnic and Nationalist Violence." *Annual Review of Sociology* 24 (1): 423–452. https://doi.org/10.1146/annurev.soc.24.1.423.

Cederman, L. E., N. B. Weidmann, and K. S. Gleditsch. 2011. "Horizontal Inequalities and Ethnonationalist Civil War: A Global Comparison." *American Political Science Review* 105 (3): 478–495. https://doi.org/10.1017/S0003055411000207.

Christia, F. 2012. *Alliance Formation in Civil Wars*. Cambridge University Press.

Conrad, J., K. T. Greene, B. J. Phillips, and S. Daly. 2021. "Competition from Within: Ethnicity, Power, and Militant Group Rivalry." *Defence and Peace Economics* 32 (6): 757–772. https://doi.org/10.1080/10242694.2021.1951595.

Coppedge, M., J. Gerring, C. Henrik Knutsen, S. I. Lindberg, J. Teorell, D. Altman, M. Bernhard, et al. 2020. ""V-Dem Codebook v10" Varieties of Democracy (V-Dem) Project." *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3557877.

Cunningham, D. E. 2006. "Veto Players and Civil War Duration." *American Journal of Political Science* 50 (4): 875–892. https://doi.org/10.1111/j.1540-5907.2006.00221.x.

Cunningham, K. G. 2011. "Divide and Conquer or Divide and Concede: How Do States Respond to Internally Divided Separatists?" *American Political Science Review* 105 (2): 275–297. https://doi.org/10.1017/S0003055411000013.

Cunningham, K. G. 2013. "Actor Fragmentation and Civil War Bargaining: How Internal Divisions Generate Civil Conflict." *American Journal of Political Science* 57 (3): 659–672. https://doi.org/10.1111/ajps.12003.

Cunningham, K. G., K. M. Bakke, and L. J. Seymour. 2012. "Shirts Today, Skins Tomorrow: Dual Contests and the Effects of Fragmentation in Self-Determination Disputes." *Journal of Conflict Resolution* 56 (1): 67–93. https://doi.org/10.1177/0022002711429697.

Cunningham, K. G., M. Dahl, and A. Frugé. 2020. "Introducing the Strategies of Resistance Data Project." *Journal of Peace Research* 57 (3): 482–491. https://doi.org/10.1177/0022343319880246 .

Cunningham, D. E., K. S. Gleditsch, and I. Salehyan. 2013. "Non-State Actors in Civil Wars: A New Dataset." *Conflict Management and Peace Science* 30 (5): 516–531. https://doi.org/10.1177/0738894213499673.
Esteban, J., L. Mayoral, and D. Ray. 2012. "Ethnicity and conflict: An empirical study." *The American economic review* 102 (4): 1310–1342.
Esteban, J., and D. Ray. 2011. "A Model of Ethnic Conflict." *Journal of the European Economic Association* 9 (3): 496–521. https://doi.org/10.1111/j.1542-4774.2010.01016.x.
Fearon, J. D., and D. D. Laitin. 2000. "Violence and the Social Construction of Ethnic Identity." *International Organization* 54 (4): 845–877. https://doi.org/10.1162/002081800551398.
Fjelde, H., and D. Nilsson. 2012. "Rebels Against Rebels: Explaining Violence Between Rebel Groups." *Journal of Conflict Resolution* 56 (4): 604–628. https://doi.org/10.1177/0022002712439496.
Fleischman, J. 1994. *Mauritania's campaign of terror*. Africa, NY: Human Rights Watch.
Gade, E. K., M. M. Hafez, and M. Gabbay. 2019. "Fratricide in Rebel Movements: A Network Analysis of Syrian Militant Infighting." *Journal of Peace Research* 56 (3): 321–335. https://doi.org/10.1177/0022343318806940.
Girardin, L., P. Hunziker, L.-E. Cederman, N.-C. Bormann, and M. Vogt. 2015. GROW^{up} - *Geographical Research on War, Unified Platform*. ETH Zurich. http://growup.ethz.ch/.
Gudina, M. 2003. "The elite and the quest for peace, democracy, and development in Ethiopia: lessons to be learnt." *Northeast African Studies* 10 (2): 141–164.
Gudina, M. 2007. "Ethnicity, Democratisation and Decentralization in Ethiopia: The Case of Oromia." *Eastern Africa Social Science Research Review* 23 (1): 81–106. https://doi.org/10.1353/eas.2007.0000 .
Gunter, M. M. 1996. "The KDP-PUK Conflict in Northern Iraq." *The Middle East Journal* 50 (2): 224–241.
Hafez, M. M. 2020. "Fratricidal Rebels: Ideological Extremity and Warring Factionalism in Civil Wars." *Terrorism and Political Violence* 32 (3): 604–629. https://doi.org/10.1080/09546553.2017.1389726.
Honaker, J. 2011. "Unemployment and Violence in Northern Ireland: A Missing Data Model for Ecological Inference." *Mimeo* 10: 1–31. Accessed August 15, 2020. https://hona.kr/papers/files/ni.pdf.
Horowitz, D. L. 2000. *Ethnic Groups in Conflict*. Berkeley: University of California Press.
Huber, J. D., and L. Mayoral. 2019. "Group Inequality and the Severity of Civil Conflict." *Journal of Economic Growth* 24 (1): 1–41. https://doi.org/10.1007/s10887-019-09162-6 .
Humphreys, M., and J. M. Weinstein. 2008. "Who Fights? The Determinants of Participation in Civil War." *American Journal of Political Science* 52 (2): 436–455. https://doi.org/10.1111/j.1540-5907.2008.00322.x.
Iacus, S. M., G. King, and G. Porro. 2012. "Causal Inference without Balance Checking: Coarsened Exact Matching." *Political Analysis* 20 (1): 1–24. https://doi.org/10.1093/pan/mpr013.
Janus, T., and D. Riera-Crichton. 2015. "Economic Shocks, Civil War and Ethnicity." *Journal of Development Economics* 115:32–44. https://doi.org/10.1016/j.jdeveco.2015.01.003.
Kuhn, P. M., and N. B. Weidmann. 2015. "Unequal We Fight: Between-And Within-Group Inequality and Ethnic Civil War." *Political Science Research and Methods* 3 (3): 543–568. https://doi.org/10.1017/psrm.2015.7.
Kydd, A., and B. F. Walter. 2002. "Sabotaging the Peace: The Politics of Extremist Violence." *International Organization* 56 (2): 263–296. https://doi.org/10.1162/002081802320005487.
La Spada, E. 2022. "Costly Concessions, Internally Divided Movements, and Strategic Repression: A Movement-Level Analysis." *International Studies Quarterly* 66 (4). https://doi.org/10.1093/isq/sqac052.
Lewis, J. S. 2022. "What Drives Support for Separatism? Exposure to Conflict and Relative Ethnic Size in Biafra, Nigeria." *Nations and Nationalism*. https://doi.org/10.1111/nana.12907.
Lyall, J. 2010. "Are Coethnics More Effective Counterinsurgents? Evidence from the Second Chechen War." *American Political Science Review* 104 (1): 1–20. https://doi.org/10.1017/S0003055409990323.
Marcus, A. 2009. *Blood and Belief: The PKK and the Kurdish Fight for Independence*. New York: NYU Press.
Metternich, N. W., C. Dorff, M. Gallop, S. Weschle, and M. D. Ward. 2013. "Antigovernment Networks in Civil Conflicts: How Network Structures Affect Conflictual Behavior." *American Journal of Political Science* 57 (4): 892–911. https://doi.org/10.1111/ajps.12039.
Mosinger, E. S. 2018. "Brothers or Others in Arms? Civilian Constituencies and Rebel Fragmentation in Civil War." *Journal of Peace Research* 55 (1): 62–77. https://doi.org/10.1177/0022343316675907.
Oster, E. 2019. "Unobservable Selection and Coefficient Stability: Theory and Evidence." *Journal of Business & Economic Statistics* 37 (2): 187–204. https://doi.org/10.1080/07350015.2016.1227711.
Pearlman, W. 2009. "Spoiling Inside and Out: Internal Political Contestation and the Middle East Peace Process." *International Security* 33 (3): 79–109. https://doi.org/10.1162/isec.2009.33.3.79 .
Phillips, B. J. 2019. "Terrorist Group Rivalries and Alliances: Testing Competing Explanations." *Studies in Conflict & Terrorism* 42 (11): 997–1019. https://doi.org/10.1080/1057610X.2018.1431365 .
Raleigh, C., and H. J. Choi. 2017. "Conflict Dynamics and Feedback: Explaining Change in Violence Against Civilians within Conflicts." *International Interactions* 43 (5): 848–878. https://doi.org/10.1080/03050629.2017.1235271.
Rudloff, P., and M. G. Findley. 2016. "The Downstream Effects of Combatant Fragmentation on Civil War Recurrence." *Journal of Peace Research* 53 (1): 19–32. https://doi.org/10.1177/0022343315617067.
Shedd, J. R. 2008. "When Peace Agreements Create Spoilers: The Russo-Chechen Agreement of 1996." *Civil Wars* 10 (2): 93–105. https://doi.org/10.1080/13698240802062648.

Sisk, T. D. 1993. "The Violence-Negotiation Nexus: South Africa in Transition and the Politics of Uncertainty." *Negotiation Journal* 9 (1): 77–94. https://doi.org/10.1111/j.1571-9979.1993.tb00691.x.

Solt, F. 2009. "Standardizing the World Income Inequality Database." *Social science quarterly* 90 (2): 231–242.

Vogt, M., N. C. Bormann, S. Rüegger, L. E. Cederman, P. Hunziker, and L. Girardin. 2015. "Integrating Data on Ethnicity, Geography, and Conflict: The Ethnic Power Relations Data Set Family." *Journal of Conflict Resolution* 59 (7): 1327–1342. https://doi.org/10.1177/0022002715591215.

Warren, T. C., and K. K. Troy. 2015. "Explaining Violent Intra-Ethnic Conflict: Group Fragmentation in the Shadow of State Power." *Journal of Conflict Resolution* 59 (3): 484–509. https://doi.org/10.1177/0022002713515400.

Weinstein, J. M. 2006. *Inside Rebellion: The Politics of Insurgent Violence*. Cambridge University Press. https://doi.org/10.1017/CBO9780511808654.

Whitten-Woodring, J., and D. A. Van Belle. 2017. "The Correlates of Media Freedom: An Introduction of the Global Media Freedom Dataset." *Political Science Research and Methods* 5 (1): 179–188. https://doi.org/10.1017/psrm.2015.68.

Wood, R. M., and J. D. Kathman. 2015. "Competing for the Crown: Inter-Rebel Competition and Civilian Targeting in Civil War." *Political Research Quarterly* 68 (1): 167–179. https://doi.org/10.1177/1065912914563546.