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INTRODUCING MACEDA: NEW MICRO-DATA ON AN INDIGENOUS SELF-DETERMINATION CONFLICT

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Introducing MACEDA: New micro-data on an indigenous self-determination conflict

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Abstract

This article introduces MACEDA, a micro-level data set on the self-determination (SD) conflict between the Chilean state and the indigenous Mapuche. Although SD disputes are one of the most common conflicts in the world, and indigenous movements represent about 40% of all SD movements, this is the first micro-data focused on an indigenous SD conflict. MACEDA covers the period 1990-2016, including more than 2,600 events collected from local media. As indigenous conflicts are much less violent in terms of casualties, we take a flexible definition of conflict, based on its constituent events, and we discuss the comparability and generalization of our approach. To illustrate the usefulness of these micro-data in the analysis of conflict-related theories, we present a descriptive empirical analysis on the strategies of indigenous resistance, and we discuss how the data can be used in the causal analysis of conflicts.

Keywords: conflict database, self-determination, indigenous, Mapuche

Introduction

Recent research on conflict points out self-determination (SD) disputes as one of the more prevalent around the world. Cross-country databases on SD conflicts (Cunningham, 2014), movements (Sambanis *et al.*, 2018), and organizations (Cunningham *et al.*, 2020) have contributed to delimiting the scope and importance of these struggles. To further improve our knowledge about SD conflicts, it is relevant to develop detailed data at a more disaggregated level and to understand differences among movements claiming SD. We tackle both challenges by introducing the first micro-data on an indigenous SD conflict.

Indigenous groups are ‘conquered descendants of earlier inhabitants of a region who live primarily in conformity with traditional social, economic, and cultural customs that are sharply distinct from those of dominant groups.’ (Gurr, 1993).¹ The indigenous SD movements are prevalent all over the world, and they represent about 40% of all SD movements.² Their conflicts have specific features that make them interesting cases for research. Indigenous resistance is usually less violent than other SD conflicts. Most movements do not seek session or independence, but rather claim rights over their ancient lands and legal recognition of their traditional institutions and rules (Minde, 2008). Consistent with this objective, indigenous movements have their own repertory of tactics. For instance, many indigenous groups rely on land invasions, a type of strategy usually not included in the standard conflict databases.

This article introduces the first micro-data specifically focused on an indigenous SD dispute: the Mapuche - Chilean State Conflict Events Database (henceforth, MACEDA). This SD conflict is one of the oldest and more persistent in the Americas, and disputes over land and greater autonomy reemerged intensively the early 90s. MACEDA reports more than 2,600 conflict events, manually coded mainly from local media. An event is described in terms of when and where it occurred, who were the actors, and how tactics were used (Gleditsch *et al.*, 2014). The data report daily events in a period or more than 25 years, from 1990 to 2016, at the municipality level. The confronting actors are identified and followed over time and space. Regarding strategies, MACEDA informs about a range of tactics and actions performed by the Mapuche SD movement, including a distinction between violent and non-violent ones.

¹Another widely used definition of indigenous is based on ILO’s Indigenous and Tribal Peoples Convention, 1989 (No. 169).

²Considering groups described in MAR (Gurr, 1993), 38% of the SD movements reported by Sambanis *et al.* (2018) and 25% of the SD organizations in Cunningham *et al.* (2020) are indigenous. Nevertheless, many SD movements are not included in the list by MAR. To address this issue, we have used a broader list of indigenous groups based on ILO’s definition. Using that list, we find that 42% of the SD movements in Sambanis *et al.* (2018) and 46% of SD organizations in Cunningham *et al.* (2020) are indigenous.

Indigenous SD conflicts are usually not registered in the most common cross-country conflict micro-level datasets.³ Although existing in many parts of the world and relevant in terms of social and economic consequences, indigenous confrontations are much less violent in terms of casualties and often disregarded by international media. In order to capture specific features of these indigenous confrontations, we have taken a flexible definition of conflict based on its constituent events. Nevertheless, using this kind of definition makes it more difficult to classify universally what constitutes a conflict event (Eck, 2012). In order to make MACEDA comparable to other conflicts, and to allow the use of our classification to build data in other settings, the sets of events in MACEDA are constructed as categories and subcategories that can be matched with the coding scheme of the widely used Conflict and Mediation Event Observations framework (CAMEO, Gerner *et al.*, 2002).

MACEDA contributes to the understanding of indigenous SD conflicts in Latin America (Warren & Jackson, 2003), but also similar disputes in other regions of the world. This is the case of SD movements such as the Native Canadians, Native Americans, and aboriginal people in Australia, New Zealand, and Taiwan.⁴ Beyond the study of indigenous SD movements, MACEDA can contribute to other areas of conflict studies. As both violent and non-violent tactics are identified, the data are useful in analyzing strategies of resistance (Chenoweth *et al.*, 2011; Dahl *et al.*, 2016). Information at the actor-level allows the study of strategic interactions among actors, including dyadic confronting actors (Harbom & Wallensteen, 2008; Cunningham *et al.*, 2017). The inclusion of coercion data shows the dynamic role of state repression on the conflict (Osorio *et al.*, 2018; Schubiger, 2019).

We provide some empirical applications that illustrate MACEDA's potential use for the descriptive analysis of some of these aspects of conflict. We analyze the use of violent and non-violent tactics by indigenous SD actors. The results imply that an increase in violence correlates with a more fragmented movement, other actors using violent tactics, and more forceful repression by the state. As micro-data is well suited for econometric methods focused on causal inference of disaggregated mechanisms (Blattman & Miguel, 2010), we discuss how those methods can be used in our data to deal with problems of endogeneity and identification in order to go beyond the descriptive analysis.

The rest of the article is organized as follows. In the next section, we provide a

³In Appendix C, we provide a detailed comparison of MACEDA with other fine-grained event datasets that include the same conflict, and with data focusing specifically on SD. We show that MACEDA has much better coverage, is more detailed and accurate and tends to have less reporting bias than other data sets.

⁴There is also a growing literature in development economics interested in the relationship between early indigenous reservations and the state. See, for instance, (Dippel, 2014; Aragón, 2015; Leonard & Parker, 2020)

historical background on the conflict between the Mapuche and the Chilean state and its characteristics as a SD conflict. In section 3, we introduce and describe MACEDA. In section 4, we use our data to test some hypotheses previously discussed in the literature. The last section concludes.

Background

The Mapuche are the historical indigenous inhabitants of South-Central Chile. They are composed of several sub-ethnic groups who share a common social and religious structure and a common language, *Mapudungun*. The Mapuche account for almost 80% of the indigenous population in Chile and about 10% of the total population (around 1.7 millions according to the 2017 Census). Many currently live in urban areas (around one-third in Santiago, the capital). However, the majority of the rural Mapuche population live in the southern regions of Araucanía, BioBío, Los Ríos, and Los Lagos. They are one of the most disadvantaged populations in the country, with worse economic and social conditions than the rest of the Chilean society.

The Mapuche territory was never *de facto* part of the Spanish empire and remained independent of Chile until the end of the nineteenth century, when it was incorporated under the effective Chilean sovereignty in a series of military occupations and confrontations between 1860 and 1883. The Mapuche (around 100,000 persons according to the 1907 Census) were confined to almost 3,000 dispersed reservations, covering less than 10% of its original domain (Bengoa, 2000). Since then, the Mapuche have systematically been claiming their previous land, along with political and social recognition.

The current phase of the conflict started in 1990, after the end of the Chilean military dictatorship. The new democratic governments failed to develop an effective institutional framework to provide solutions to the historical Mapuche SD claims. The initial pacific protests and land invasions promptly turned towards more violent actions, especially when the Chilean state responded with increasingly aggressive repression. Since then, the conflict between the Mapuche SD movement and the state has been persistent and increasingly violent (Pairican, 2014; Rojas Pedemonte & Miranda, 2015).

The literature classifies the conflict between the Mapuche movement and the Chilean state as an SD one. The SD Movements (SDM) data set by Sambanis *et al.* (2018) list the Mapuche as an active movement since 1978. The Strategies of Resistance Data Project (SRPD) by Cunningham *et al.* (2020), which provides data at the organization-year level, identifies eight Mapuche organizations in Chile.

The Mapuche movement, like the rest of the indigenous movements in the Americas,

often emphasizes autonomy and SD as one of its main claims. In this case, SD is a broad concept, ranging from independence (only in extreme and rare cases) to more moderate extensions in internal autonomy. The leading organizations in our period of study (1990-2016), namely *Consejo de Todas las Tierras* (CTT), *Coordinadora Arauco Malleco* (CAM), and *Weichan Auka Mapu* (WAM), have made continuous explicit claims regarding SD.⁵ Even the more institutionalized organizations, such as the Mapuche political party *Wallmapuwen*, present their demands in terms of territorial and political SD.

MACEDA: Data construction and description

Definition of a conflict event in MACEDA

There are two main ways to define a conflict event. The first one is based on clearly observable variables such as fatalities (e.g. Sundberg & Melander (2013)). The use of death tolls has evident advantages in terms of external validity and comparability across different conflicts. The UCDP Armed Conflict dataset (Gleditsch *et al.*, 2002) and the most recent UCDP Georeferenced Events Dataset (Sundberg & Melander, 2013) are examples of comprehensive databases based on conflict-related casualties.

However in many SD conflicts the movements rely mostly on nonviolent strategies, and fatalities rarely occur. In this type of conflict, a more flexible definition is required. This alternative is to define conflict by its constituent events. Conflict events then consist of a set of actions that occur between designated actors. This is the approach, for instance, of the Armed Conflict Location and Event Dataset (ACLED), which defines conflict as ‘nine types of events, both violent and nonviolent, that occur within the context of civil wars and/or periods of political instability’ (Raleigh *et al.*, 2010).

We follow the latter approach. Defining the conflict as a set of actions gives more flexibility to researchers, but it makes it more difficult to determine which behavior constitutes a conflict event universally. To overcome this problem, we classify them in a comparable and reproducible way.

We define an indigenous SD conflict event as *a set of actions occurring in the context of the conflict at a given place and time*. Actions may be both violent and non-violent. The set of actions, which is the core of this definition, are grouped in four categories and

⁵The CTT, since its formation at the beginning of the period, proposed to generate the conditions to obtain political rights to Mapuche people in the context of autonomy and SD within a multinational state (Pairican, 2014). In its founding manifesto *Planteamiento político-estretégico de la CAM* (2000), CAM states that the two main objectives are autonomy and territorial political control. The more radical and recent organization WAM proposes ‘to fight until obtaining complete autonomy from the Chilean state’ in the *Declaración Pública WAM* of 2016.

further divided into several subcategories:

- **Attack:** an event in which a group has the specific intention to damage other groups, or other public or private property. It is the most violent expression of the conflict; all attacks are coded as violent events. Subcategories: arson, bombing, attack with firearms, attacks with light weapons, and other attacks.
- **Protest:** a public expression of dissent towards some idea or action related to the conflict. Protest events can be either violent or non-violent. Subcategories: riot, demonstration, hunger strike, dry hunger strike, roadblock, block exit or entry, invasion of private or public property (other than land), and other protests.
- **State Coercion:** the use of either state repression or the law against the Mapuche movement. Subcategories: police raids, anti-terrorism law implementation, violent repression, arrest, eviction, court conviction, indictment, and other coercions.
- **Land Invasion:** seizing or occupation of land by members of the indigenous SD movement. A land invasion is violent if confrontation is reported at the moment of invading; otherwise, the occupation is peaceful. Subcategories: violent and peaceful land invasion.

These categories are relevant for describing the specific indigenous conflict that we study. However, they are also intended to be comparable with other databases and reproducible to build data for similar conflicts. For comparative purposes, we match our set of events with the coding scheme of the widely used CAMEO framework (Gerner *et al.*, 2002). Appendix A describes the correspondence between MACEDA and CAMEO subcategories.

The match between MACEDA and CAMEO considers the first three categories listed. As for the fourth one, land invasion, there is no correspondence (see Appendix A for a discussion). Land invasion is a fundamental strategy not only in the conflict under study but also in many indigenous SD conflicts. Also called land occupation, this resistance strategy is widely used in peasant revolts as well (Hobsbawm, 1974; Hidalgo *et al.*, 2010). While invasions often start as a non-violent kind of protest, many times they turn violent and, in some occasions, resemble an organized armed occupation. Despite its importance, the conflict literature has largely ignored the land occupations. Neither CAMEO nor datasets such as ACLED or the Global Terrorism Database (GDT) consider and explicitly code land invasions as a confrontation strategy.

In fact, land invasions are relevant to a variety of conflicts. In indigenous uprisings in Latin America, the occupation of land is a salient strategy of confrontation. For instance, one of the first actions by the Zapatista offensive in Mexico (at the beginning

of 1994) was to occupy more than 60,000 hectares of land owned by non-indigenous farmers (Villafuerte, 1999). Land invasions by indigenous groups also have taken place in Argentina, Brazil, Ecuador and Colombia. Other SD indigenous movements beyond Latin America also rely on land invasions as a resistance tactic, including Native Canadians (Borrows, 2005), Native Americans (Wetzell, 2009), and aboriginal people in Australia and New Zealand (Cox *et al.*, 2016).

Data construction

MACEDA is a media-based event data set. The choice of media as the primary source is obligatory. Police or judicial files are not accessible, law courts do not report ethnic information, and data from civil organizations is recent, sporadic, and typically not public.

First, we select a subset of media reports from a specific source using an automatic search with keywords. We use keywords based on eventual participants of the conflict due to the high number of actions that have the same name but are unrelated to the conflict.⁶ Secondly, we manually select conflict-related media reports and identify events and their characteristics.⁷ The use of human-based coding instead of machine-based is justified given the specificity of our search (Hammond & Weidmann, 2014).

Each media report may contain no event (then it is disregarded), one single event, or several events. At the same time, several media sources may report the same event. In this case, we use the one with the most information, and we complement that information with the other reports. The data identifies all sources used in each event.

Media sources

The primary media source is *El Mercurio*, which has the highest circulation and is the oldest Chilean newspaper (founded in 1827). One of the most important features of *El Mercurio* is its digital availability throughout the period considered. This newspaper has been used by many authors as a source of information to study the conflict (e.g., Pairican, 2014). From the more than 21 thousand news reports obtained from the search with keywords, we ended up with 2,059 events.

⁶We divided keywords of eventual participants in three sub-categories: (i) ethnic generic names: Mapuche, Pehuenche, Lafkenche, *Araucano* and *Indígena*; (ii) Mapuche organizations: *Coordinadora Arauco Malleco*, *Consejo de Todas las Tierras* and *Identidad Territorial Lafquenche*.; and (iii) generic participants: *Comunero*, *Encapuchado*. The organization are the leading Mapuche organizations in conflict Pairican (2014).

⁷All media reports were coded twice by different research assistants, compared for consistency, and then cross-checked.

The use of media can induce several biases on the collection of conflict data (Weidmann, 2015). A significant bias is the editorial slant of the media. In our case, *El Mercurio*, which is a right-wing and conservative media, exhibits a persistent bias against the Mapuche movement. The bias induces, for instance, an over-reporting of violence and an under-reporting of state repression. The literature recommends the use of diverse sources to attenuate this editorial bias (Salehyan, 2015). Therefore, we expanded MACEDA using several alternative media sources. As these media do not cover the entire period, we rely on several of them, as long as they are available for several consecutive years. From more than 15 thousand news reports, we include 1,016 events recorded in these alternative media sources. About 500 events are reported in both sources. We describe these alternative media sources in detail in Appendix B.

In addition, we verified and complemented our media-based data with public communications from some of the Mapuche organizations included in MACEDA. We use the official web page of CAM and the communiques by WAM.⁸ This additional information is not used to increase the number of conflict events, but to complete the ones given by the principal sources. The use of non-Mapuche sources reduces the chances of strategic self-reporting.

Appendix B provides a detailed discussion about the media sources in MACEDA, including a description of all the media sources and the reasons to include each one of them. We also discuss the extent of editorial bias in our media sources, as reported by the Chilean literature. Finally, we describe the time evolution and the distribution of event types by sources, and we characterize the subset of repeated observation.

Data description

The final version of MACEDA includes 2,619 conflict events between the indigenous Mapuche group and the Chilean state in the period 1990-2016. For each event, MACEDA reports 38 variables that contain information on the characteristics of the event.

Identification.

Each event has a unique identification code. There is also an identification code for *related events*, which are previous events mentioned as having a direct relationship.⁹

⁸In the case of CAM we use *Weftum*, which was the official web page of the group. In the case of WAM, we include their communique from April 2016 in which they adjudicate several attacks on the Mapuche area since 2012.

⁹For instance, MACEDA event id 2008025 is an attack where a Mapuche activist was killed by police on January 3rd, 2008. This event has been described as one of the main turning points in the conflict. In MACEDA, this event is related to 19 other events (such as demonstrations, land invasions, and attacks) that followed as a direct response according to media reports.

MACEDA reports the date of the event. The temporal evolution of the conflict is described in Figure 1. The figure includes all the events reported in MACEDA. Black and red lines report the total number of year and annualized quarter events, respectively.

[Figure 1 in here]

MACEDA reports the location of the event at the municipality level and the specific location where the events take place. Figure 2 displays the intensity of conflict in the two regions that concentrate 86% of the events (Araucanía and Biobío). The total number of events are higher in rural Mapuche municipalities, where attacks and land invasions are the more frequent type of events, and in urban areas, where demonstrations and state coercion prevail.

[Figure 2 in here]

Type of event.

The event types are classified into four categories: attacks (38.5% of events), protests (25.8%), state coercion (20.7%), and land invasions (15%). The subcategories of the events allows distinguishing violent and non-violent actions. Considering events other than state coercion, 53.4% of the events in MACEDA are violent. All attacks are violent, including 571 cases of arson and 166 attacks with firearms, but for other event types non-violent actions are prevalent. MACEDA codes 244 pacific demonstrations and 70 riots, and out of the 374 reported land invasions, only 32 started as violent occupations. Other protests are mostly non-violent, such as 57 hunger strikes. The main events reported in the 540 observations for state coercion are arrests (186) and evictions (150). Also, 23 events are violent police repressions and 79 are police raids.

Actors.

MACEDA codes 15 categories of actors, which are classified into Mapuche and non-Mapuche persons and organizations. In 96% of the events, one of the actors is Mapuche (organizations, communities, or persons), and the other is non-Mapuche (state institutions, private companies, landowners, etc.).¹⁰

Among Mapuche actors, 42.1% are communities and organizations (that we identify with their specific and standardized names), 11.1% are pro-Mapuche demonstrators, and the rest are Mapuche individuals and non-identifiable Mapuche groups.¹¹ Among non-Mapuche, state institutions are the most frequent actor (51%), but private entities such

¹⁰There are few cases in which an event involves only Mapuche (1.3%) or only non-Mapuche (2.7%).

¹¹While some indigenous communities act independently, the main Mapuche organizations act as coordinators of those communities in their SD claims.

as landowners (19.3%) and forestry companies (15.7%) are relevant as well. Additional information on actors includes the number of persons involved, the use of weapons by any actor (if there was a confrontation between actors), related actors, and which actor initiated the event.

Consequences.

A set of variables summarize the consequences of the event. One variable indicates if there was a destruction of assets and properties in the event, which was the case in 20% of the events. Usually destroyed property are trucks, cars, agricultural machinery, storehouses and barns, among others. Whenever available, there is a variable reporting the estimated cost of the lost property. The number of arrested, wounded, and dead persons are also reported. From 1990 until 2016, MACEDA registered 21 casualties, less than one per year. But the severity of the conflict is better reflected in the 2,746 arrested and more than 803 wounded persons reported.

Empirical application: Strategies of the actors in the conflict

To illustrate how MACEDA can be used in future research, we present an empirical application analyzing the strategies undertaken by the actors in conflict. Conflict actions may be violent or non-violent as the result of different actors adopting different strategies, but also because an actor can change its tactics over time. Previous literature suggests that when the movement is more fragmented, it is more difficult for actors to coordinate and for the state to negotiate. This implies an increase in the use of violence (Sambanis *et al.*, 2018; Cunningham, 2013). Moreover, organizations and other actors compete to capture the constituency of the movement and tend to imitate the tactics used by other actors (Cunningham *et al.*, 2017). Therefore, there is a potential correlation between the type of tactics used by actors in a given period.

To test these hypotheses, we construct panel data from MACEDA at the actor-quarter level. We consider all Mapuche organizations and communities that have participated in at least five events in the data. To measure the strategies of those actors in each period, we use the fraction of violent to total events by each actor in a given quarter. The variable takes the value of zero if an actor did not participate in any event in a given quarter. The empirical strategy is an OLS regression where the fraction of violent events is the main dependent variable. We include actor fixed effects to control for time-invariant unobserved heterogeneity at the actor level. We also include quarter fixed effects. Table I displays the results.

[Table I in here]

The estimates in column (1) imply that as the movement is more fragmented (measured as the log of the number of actors active in the previous quarter), the more violent the tactics of the actors are the next quarter. The results in column (2) support that the actors' choice for violence depends on others' previous levels of violence (considering the mean of the violence of other actors in the previous quarter). The coefficient in column (2) implies that a one standard deviation increase in violence from the other actors increases the likelihood of a violent strategy by an actor in 5% above the mean in the next period.¹²

Previous studies have also shown that a strong opposition by the state increases the actors' choice for violent tactics (Osorio *et al.*, 2018) and the fragmentation in the movement (Schubiger, 2019). To test these hypotheses, we proxy state response with the (log of) number of arrests in the previous quarter. The results in column (3) of Table I indicate that adopting violent strategies is correlated with state coercion in the previous quarter. In column (4) of Table I, we use the log of the number of active actors as dependent variable to proxy for fragmentation in the movement. The results indicate a positive correlation between the increase in state repression and fragmentation in the next quarter. The coefficient implies that a 50% increase in the number of arrests increases the number of active actors in 8.5%.

These results must be taken as partial correlations and not causal effects. As MACEDA records data at high time-frequency for a large period, the data is suitable for the use of techniques focused on causal inference. For instance, the panel structure allows the use of difference-in-difference strategies, while daily data supports the implementation of temporal regression discontinuity techniques. Based on MACEDA, Corvalan (2020) studies the effect of the election of Mapuche mayors on the conflict in a dynamic panel. To provide identification, the author takes advantage of the electoral reform that precedes the 2004 election as an exogenous variation for Mapuche electoral success. The spatial disaggregation in MACEDA is another feature that makes it suitable for the implementation of microeconomic techniques for causal inference. For instance, Jaimovich & Toledo (2020) combine MACEDA with historical rainfall data to implement instrumental variable estimates of the causal effects of the failed land reform of the 1970s in the current SD conflict in rural areas.

¹²The results presented in this section are robust to changes in the definitions of actors and consistent with an alternative empirical strategy using multinomial logit.

Conclusion

SD conflicts have spread worldwide, and indigenous groups are a substantial share of the movements involved in them. While recent macro-data have allowed a better understanding of cross-country differences of these SD conflicts, micro-level data is better suited for understanding the different mechanisms driving these aggregate relationships (Blattman & Miguel, 2010). This article introduces MACEDA, the first micro-data specifically focused on an indigenous SD dispute.

Several actors are reported in MACEDA, including various organizations and dozens of indigenous communities. These actors have adopted a range of strategies that have changed over time, some violent but many others non-violent. This suggests that indigenous SD movements rely on a mixed set of resistance strategies, including some actions not sufficiently studied in the literature, such as land invasions.

Future research may benefit from micro-data like MACEDA for developing generalizable theories about SD and other kinds of conflicts. Firstly, considering a variety of strategies beyond violent events is fundamental for the understanding of contemporary conflicts (Gleditsch, 2020). Secondly, subnational data is consistent with the actor-oriented theoretical frameworks used in the study of contentious politics (González & Vüllers, 2020). Moreover, incorporating strategies like land invasions provides a bridge with theories of conflict over contested rural property in the framework of peasant movements and land reforms (Albertus, 2015).

Replication data

The dataset, codebook, and do-files for the empirical analysis in this article, along with the online appendix, are available at <https://www.prio.org/jpr/datasets/>. All analyses were conducted using STATA. See also <https://www.mapuchedataproject.cl>

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Bio Sketches

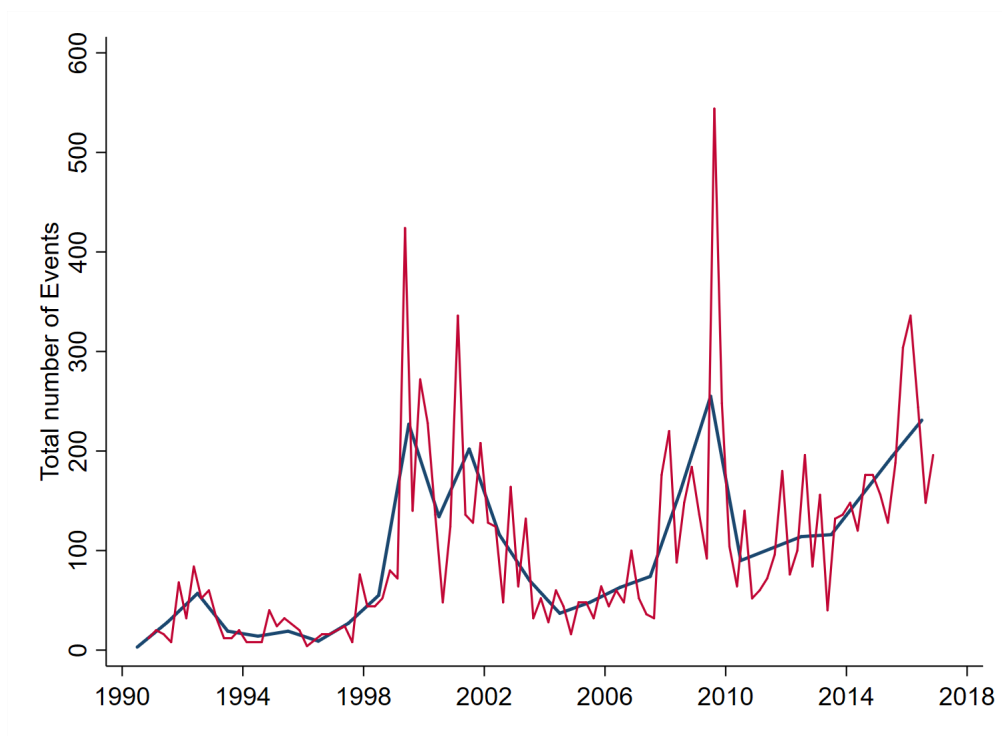
PEDRO CAYUL, b.1990, Master in Economics (Universidad de Chile, 2016); PhD Candidate in Development Economics, Graduate Institute, Geneva (2018-). Research interests: Conflict, political economy and development.

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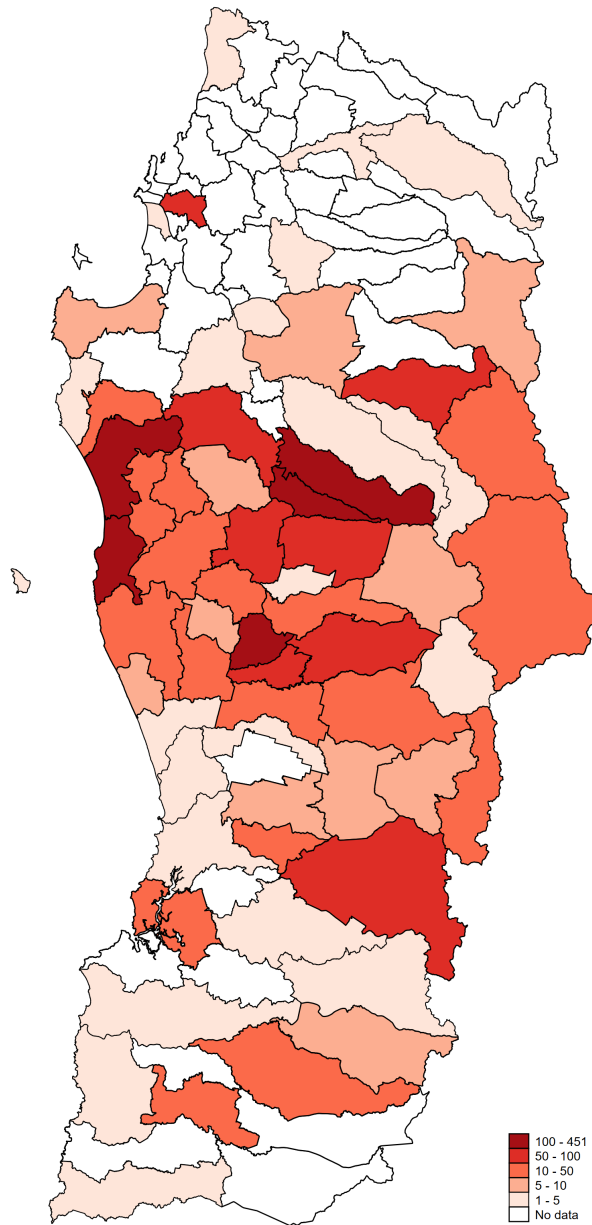
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Figure 1. MACEDA: The dynamic of the conflict



Notes. Number of quarterly and annual conflict events

Figure 2. MACEDA: Conflict by municipality



Notes. Number of conflict events at municipality level. The colors represent the intensity of events in four ranges: 0-49, 50-99, 100-199, 200 and more. The color white represents that there are no conflict events. The map covers the two regions with more events prevalence: Araucanía and Biobío

Table I. Correlates of violence by Mapuche actors

| | <i>Violence</i> (1) | <i>Violence</i> (2) | <i>Violence</i> (3) | <i>Log(number of actors)</i> (4) | <i>Violence</i> (5) |
|---|------------------------|------------------------|------------------------|-------------------------------------|------------------------|
| Log(number of actors) _{t-1} | 0.058* (0.024) | | | | 0.038 (0.025) |
| Violence by other actors _{t-1} | | 0.070† (0.038) | | | 0.070* (0.032) |
| Log(arrests) _{t-1} | | | 0.020** (0.007) | 0.170** (0.015) | 0.012† (0.006) |
| Observations | 1,248 | 1,248 | 1,248 | 1,248 | 1,248 |
| <i>R</i> ² | 0.021 | 0.009 | 0.017 | 0.209 | 0.025 |

Notes. OLS estimations, with actor and quarter fixed effects. Standard errors are robust. †,*, ** represent significance at the 10%, 5% and 1% levels, respectively. In all columns, except (4), the dependent variable is the fractions of violent events per organization during a quarter.