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"Is Communal Organization an Effective Deterrent to Crime? The Cases of Guatemala and Mexico"

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Is Communal Organization an Effective Deterrent to Crime? The Cases of Guatemala and Mexico[1]

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Abstract

We explore the impact that communal organization has upon the degree of violence experienced by a society. Under certain circumstances, this form of local government creates social networks that may protect these societies against noxious external agents, and may effectively constraint the behavior of its members. We are interested in assessing whether this type of organization effectively insulates communities against crime related violence. We use Guatemala and Mexico as case studies. We use panel data on homicides as a proxy for violence, and the proportion of indigenous population as a proxy for communal organization. Both variables are measured at the municipal level from the early 1990s to 2012. We analyze our data using matching techniques and regression analysis. The subject has policy implications far beyond indigenous and rural societies. We can learn about the mechanisms and types of public institutions that allow all sorts of communities to effectively shield themselves against criminal organizations. We also learn about the most efficient role of the state.

Keywords: communal organization, crime, violence, homicide, Mexico, Guatemala

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Is Communal Organization an Effective Deterrent to Crime?

The Cases of Guatemala and Mexico

After decades during which many countries in Latin America struggled to end the rule of autocratic regimes, and amid economic crises that seriously undermined the future of many generations, things seemed to improve. Democracy was, finally, the only game in town and though economic reforms were implemented with mixed results, these did provide greater macroeconomic stability, as compared to the 1980s and 1990s.

Yet, better political and economic institutions have not delivered the expected outcomes, especially in terms of quality of life. Fundamental needs such as order, security, justice and peace still have not been fulfilled. A plethora of criminal activities, many of these linked to drugs, guns and human trafficking, are underway in the region. Criminal organizations have mushroomed and strengthened, and the effects on citizens' wellbeing have been disastrous (Soares, 2006; PNUD, 2014; UNODC, 2014).

It should be noted, however, that crime and violence have not affected all of Latin America equally. Some regions and countries are more problematic than others, and there is also significant variance within countries themselves. For instance, in Mexico, a country that has suffered a significant rise in homicides in recent years, 72% of municipalities had fewer than 5 homicides during 2012 (out of a total of 2,473 municipalities).

There is a significant body of literature explaining the determinants of crime incidence, and of homicides in particular (e.g. Fajnzylber, *et al*., 1998 and 2002; Soares and Naritomi, 2010). In addition to structural factors, such as economic conditions, share of young population, and police capacity, both the literature and policy-makers agree that society plays a fundamental role in

preventing crime. Community participation (Mesquita and Loche, 2003; Pérez, 2003), social capital (Glaeser et al., 1996; Rosenfeld et al., 1999), and some of social capital's argued effects, such as trust (Lederman et al., 2002) are a focus of the literature.

In this paper we delve into a specific institution that, under specific circumstances, could minimize the risk of violence in general, and that of organized crime related violence in particular: communal organization.

By communal organization we mean a body of citizens that either legally, or illegally, substitutes or complements the state. It aims to provide a local public good, such as security, which is the focus of this paper.

It is important to note that not all communal organization will necessarily increase the welfare of citizens at a given locality. Increasing social capital does not imply that everyone will be better off (Levi, 1996; Portes and Landolt, 1996; Cleaver, 2005). The fact that citizens are able to organize themselves does not imply that it is for a "good" cause (Rubio, 1997; Cleaver, 2005). For instance, white citizens at American communities in the South during the 1960s and 1970s were well organized to discriminate against African Americans; the KKK was the extreme of this "successful" organization. Many lynchings in communities in Latin American countries are possible thanks to strong links among citizens, mainly within indigenous communities (Mendoza, 2008). Similarly, the organization of self-defense paramilitaries in Colombia, Peru, Guatemala or Mexico, requires society's active participation.

Yet, under certain conditions, communal organization is an effective deterrent to violence. We study the cases of Guatemala and Mexico to contribute to determine what these conditions are. These two countries have a strong tradition of communal organization dating back to pre-colonial times. This sort of organization is concentrated within localities with significant shares

of indigenous population. In these, there is strong sense of collective identity and belonging that helps to overcome the well-known problem of collective action for the provision of collective goods (Hardin, 1982; Oberschall and Kim, 1996).

Both countries are also similar in the current security crisis they face. Drug trafficking organizations (DTOs) are present in significant portions of their territories, creating a tense environment in which homicides have skyrocketed. Information in some countries in Latin America does not always allow for a precise assessment on whether a homicide was linked to a criminal organization, or not. We know, however, that DTOs significantly expanded in Latin America, diversifying their criminal activities to kidnaping, extortion, smuggling, among others, and that this had had a significant impact (UNODC, 2012 and 2014).

Nevertheless, the patterns of violence seem to be different. We observe significant differences in homicides rates in indigenous and non-indigenous municipalities in Mexico and Guatemala. The average homicide rate in Guatemala in recent years is systematically much lower in indigenous municipalities—measured as those in which more than 50% of the population consider themselves as indigenous people—than in non-indigenous municipalities. The average proportion is about 1 to 5, measured from 2009 to 2011. In contrast, in Mexico, the average homicide rate was almost identical in both indigenous—measured as the proportion of inhabitants that self-reports speaking at least one indigenous language—and non-indigenous municipalities from 1990 up to 2006. However, after the government intervention against organized crime by the Calderon administration, things changed in Mexico. From that point on, the average homicide rate skyrocketed in non-indigenous municipalities, but remained stable in indigenous municipalities.

We use this variance across countries to inquire into the conditions under which communal organization is an effective deterrent of violence. We argue that a strong communal organization may help to prevent the penetration of organized crime by reducing corruption of authorities, creating more efficient communication channels that can alert neighbors regarding criminal activities, and by increasing trust within a community. For criminals, a strong communal organization can also increase the probability of being captured and punished, thus affecting the cost-benefit analysis of committing a crime.

In the next section we develop our theoretical insights regarding the relationship between communal organization and crime on the basis of the existing literature. We then analyze the cases of Mexico and Guatemala to examine whether, and how, communal organization prevents crime and violence. We conclude with the implications of our findings for crime prevention and crime fighting policies.

Communal Organization and Crime

From a contractual perspective, the most basic transaction at the origin of a state entails that citizens exchange protection for taxes with a third party specialized in violence; this third party eventually turns into a state (North, 1981 and 1990; Levi, 1988; Olson, 1993).

High levels of crime and violence signal the lack of a state solid enough to control its own territory. On occasion, criminal organizations even tax citizens (Magaloni et al., 2012). In light of the incapacity of a state to fulfill its obligation to providing public security, citizens have to compensate. Citizens may organize themselves to complement or even substitute the state in its public security functions. This is not a new phenomenon, of course. It actually returns us to a primary state of human affairs, before the existence of the modern state.

We may infer that the mere decision of a group of individuals to organize in such a manner implies that the government is not fulfilling its part of the deal. In this sense, it is an inefficient state. In principle, the fact that a community is able to organize, and provide public security in addition to, or in substitution of formal authorities, should be a better state of affairs as compared to a disorganized and violent community.

When local communities organize themselves to self-provide policing services, it somehow equates to a basic form of statehood, in which transactions occur in a transparent way between a subset of the community that specializes in the use of violence, in exchange for some sort of payment. Payment could be money, or simply community recognition as such. This is not an anomalous circumstance. In some cases we have observed in Latin America, that the state has never had an actual presence in the communities, and they have always self-provided policing. In other cases, the state authorities have been expelled by the community and substituted by a communal form of organization, such as in Santiago and Panajachel in the Department of Atitlán in Guatemala, or in Nueva Jerusalem in the Mexican state of Michoacán.

Note that—even though, this form of organization sometimes fulfill its goal of providing security—this is not necessarily a more efficient form of organization, as compared to a formal state. However, under the scenario of an absent or inefficient state, self-provision of public security does not seem to be such a bad idea. We also observe some mixed organizations. For instance, in Nicaragua, the Sandinista government has managed to merge neighborhood organizations with the formal police to create a more solid defense against crime. The low crime rates that this country are tentative evidence of a successful type of communal crime-fighting organization.

Communal organization implies the existence of social capital. Lederman et al., (2002) find that some manifestations of social capital, such as trust of community members, have the effect of reducing violent crimes. Yet, other indicators of social capital do not seem to affect the incidence of crime. Similarly, Seligson (1999) finds that when individuals participate in groups for community improvement, they will be more likely to behave according to democratic norms, which should imply less criminal behavior. But participation in other kinds of associations—as Putnam (1993) predicts—does not have a significant effect on democratic behavior.

A community procuring public security is a specific case of the production of a public good. There is evidence in the literature showing that communal organization and social networks facilitate communities' access to public good provision. Díaz-Cayeros et al. (2014) show that municipalities in the Mexican state of Oaxaca that are ruled by indigenous customary law (*usos y costumbres*) have increased access to electricity, sewerage, and education, as compared to municipalities ruled by political parties. However, Eisenstadt (2007) finds that rules of *usos y costumbres*, in Oaxaca have not diminished post electoral conflicts.

There is of course wide variation on how citizens organize to generate a local public good. In terms of public security, geography is fundamental, and this is the logic at the core of communal organization. Citizens organize to defend a given territory, be it a country's region, a whole village, a productive unit (such as a livestock ranch), or a residential area within a city. In Guatemala City, and in many cities in Mexico, it is quite common to see closed streets, creating gated communities where neighbors have coordinated and put up their own resources to pay for private police and access control buildings.[2]

[2] Note that There are other criteria in addition to geography. Citizens may organize to protect themselves on the bases of religion, ethnicity, or national identities. There is plenty of evidence, for instance, showing that ethnic homogeneity favors public good provision (Baqir, 2002; Miguel, 2004; Miguel and Gugerty, 2005).

A society can also organize itself to break the law, many times for an alleged "just" cause, as in the case of lynching parties, or paramilitary groups.

In the case of several urban areas in Guatemala—and across Latin America—youth gangs are the main challengers to the state. *Pandillas* and *maras* are strong social networks, but the expected behavior is violent and criminal, and it gains members respect from their peers, and fear from outsiders. Many youth gangs make money by extorting small businesses. They have very effective control of the territory, and of the population, and they are able to enforce their rules. Gangs have killed hundreds of victims of extortion for not paying their fees. In some urban but highly indigenous neighborhoods, we notice the existence of communal organization to deal directly with extortionists (for example, in San Juan Sacatepéquez, Guatemala).

For Lederman, the difference between the positive and negative impact of social capital seems to be related to whether it is present within specific groups, or spread across society. In the former case, it will have negative effects; in the latter it will be beneficial for the social aggregate (Lederman et al., 2002).

Hypotheses and Causal Mechanism

In this paper we focus on homicides as proxy to crime. We do this for two reasons: first, data availability. In most countries, a state authority must formally register a homicide, independently of whether anyone denounces the crime. For almost all other crimes, the dark figure is significantly high. Second, a homicide signifies the extreme failure of a state to protect its citizens, which is the core part of the transaction of a state with citizens.

Our initial hypothesis states that, *ceteris paribus*, as communal organization increases, homicides should tend to decrease (Hypothesis 1). We identify two main mechanisms. First,

communal organization implies a more cohesive society, in which conflicts among citizens can be settled at a lower cost, preventing escalation and violent confrontation. Lederman et al. (2002) suggest that social capital reduces violent crime by lowering the costs of social transactions. Second, in a more cohesive society, individuals know and are known by a greater share of their fellow citizens, which should disincentivize crime within the community, decreasing homicides.

Since criminal organizations require a society's active or passive participation to successfully operate, as communal organization increases, *ceteris paribus*, the presence of criminal organizations should decrease, also reducing homicides (Hypothesis 2). Monitoring and sanctioning is facilitated when individuals in a society are more interconnected (Habyarimana et al., 2007; Díaz-Cayeros, et al., 2014). And, members of a society that side with criminal organizations can more easily be identified and punished, either by criminal law or by other social mechanisms. Similarly, outsiders are easily spotted and monitored.

Cases: Mexico and Guatemala

In addition to sharing 541 miles of border and multiple cultural commonalities, Guatemala and Mexico share serious problems of crime and violence (UNODC, 2014; Mendoza, 2008).

These two countries have a long tradition of communal organization that substitute, complement, or operate independently to legal authorities. Where this occurs, decision-making takes place in assemblies, and the specific rules, topics, and actual implementation of decisions vary widely across communities.

Indigenous communities sometimes organize themselves in parallel to existing formal authorities—especially in the Western Mayan Highlands of Guatemala, and in the Mexican states of Chiapas, Michoacán, Guerrero, and Yucatán. In these cases, it is up to the formal

authorities to decide how they fund and execute the mandate of the assembly. Thus, there is wide variation on the potential effects and success of this sort of organization.

In other places, communal institutions formally substitute institutions that the rest of the country has to observe. Such is the case of many municipalities in the Mexican state of Oaxaca, which, after fulfilling certain conditions, have opted for self-government, substituting municipal authorities, and creating *usos y costumbres* government (Eisenstadt, 2007; Díaz-Cayeros, 2014). In Guatemala, there are indigenous communities where the *Alcaldía Indígena* is still a respected institution that helps resolve local conflicts, before any intervention from the state.

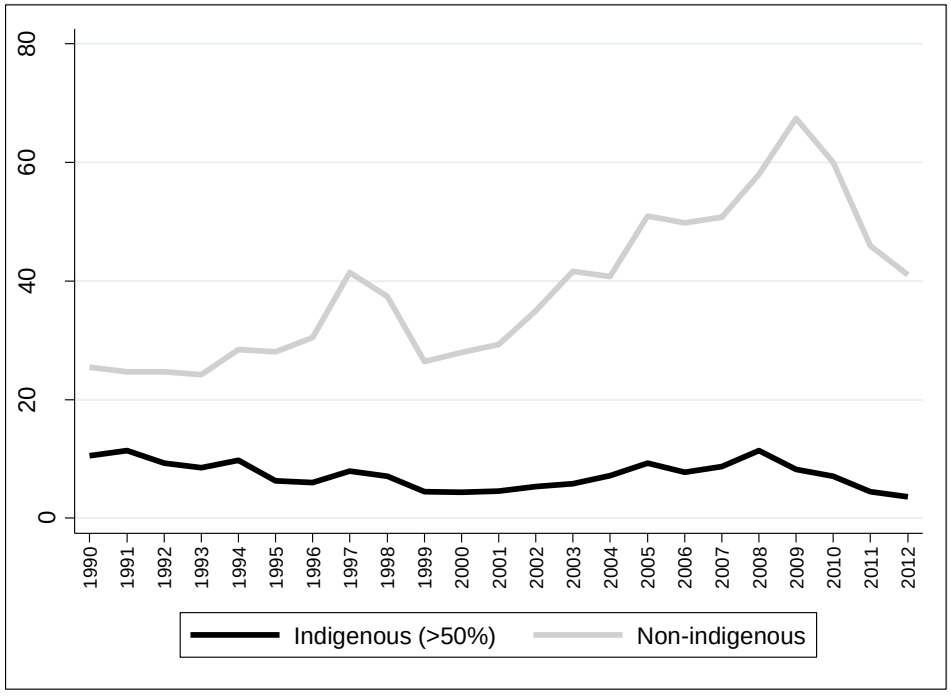
We approximate the existence of communal organization at a given municipality by determining whether there is a majority of indigenous population. Because of data availability, we have different proxies for Guatemala and Mexico. In Guatemala we measure by the share of population at a given municipality that self-identifies as having indigenous origins. In Mexico we use the share of the population that speaks an indigenous language. In both cases, we set the cut at 50%. The intuition is that communal organization is the customary way of organization for indigenous people; when they are the majority of the population at a given locality, the likelihood that they will set such a model of organization significantly increases.

In 2010, 157 of Guatemala´s municipalities fulfilled this condition (47% of all municipalities). In Mexico, 441 municipalities had a majority of citizens that spoke an indigenous language (18% of all municipalities).

Graphs 1 and 2 display the homicide rate per 100 thousand inhabitants at indigenous and non-indigenous communities in Guatemala and Mexico respectively. The contrast is striking. Guatemala's indigenous communities have systematically much lower levels of violence than non-indigenous communities. In Mexico, interestingly, up to 2007 the homicide rate for

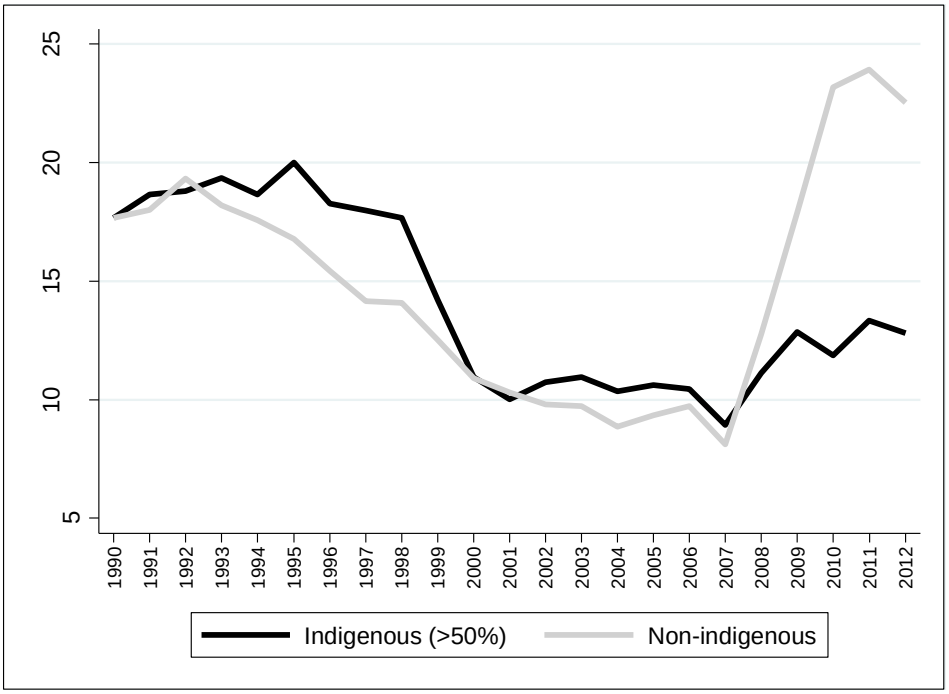
indigenous and non-indigenous communities was relatively similar at some periods, but in 2008 the two lines drastically diverge from each other. This date coincides with the Mexican government offensive against DTOs under President Felipe Calderón.

Graph 1 – Homicides per 100k habitants by indigenous population in Guatemala



Source: Instituto Nacional de Estadísticas of Guatemala (INE), Estadísticas Vitales (Defunciones 1990-2012).

Graph 2 – Homicides per 100k habitants by indigenous population in Mexico



Source: Mexico's Instituto Nacional de Geografía y Estadística (INEGI). Available at: http://www.inegi.org.mx/sistemas/olap/Proyectos/bd/continuas/mortalidad/DefuncionesHom.asp?s=est&c=28820&proy=mort_dh

In the following sections we delve deeper into our data to verify the relationship between communal organization and crime, making sure to focus on whether the similarities and differences between indigenous and non-indigenous communities are not caused by other intervening variables, such as poverty or geographical location.

Guatemala: Indigenous Communities Resilience to Violence

TO BE COMPLETED…

Mexico: Indigenous Communities Resilience to Organized Crime (but not to Violence)

To test our hypotheses regarding the relationship between homicides and communal organization, we use yearly data at the municipal level (2,454 municipalities) for the years between 1990 and 2012.

The existing official evidence states that confrontations among rival DTOs are responsible for most of the increase in deaths since 2008 (Poiré, 2011). If indigenous societies—as a proxy for the presence of communal organization—are actually relatively more resistant to organized crime, then the increase in deaths beginning in 2008 should mostly affect non-indigenous localities.

As we discussed earlier in this paper, the homicide rate per 100 thousand habitants seemed to be the same between municipalities having a majority of indigenous habitants, and those that do not. That is, up to the beginning of the war on drugs launched by the Mexican government and the significant escalation of violence in 2008. However, we were not yet controlling for potential endogeneity.

Ideally, we would have compared crime incidence at two otherwise identical polities, except that one polity has a form of communal organization, and the other does not. Yet, this experimental setting is not feasible. Thus, we use a second best. We use the municipality as unit of analysis, and not the specific locality because of data availability. As we mentioned before, we approximate the existence of communal organization by whether there is a majority of indigenous population at a given municipality.

To generate valid inferences that minimize endogeneity problems, we use a combination of coarsened exact matching (CEM)[3] and panel corrected standard errors (PCSE) regression models.[4]

First, there are specific municipal characteristics that systematically differentiate indigenous and non-indigenous communities, which may also determine the frequency of homicides; poverty and population size are two such characteristics. To minimize this potential issue, we specify a CEM model in which the treatment is defined as being an indigenous community. We balance the municipalities within both groups on two variables: total population and an index of public services, which approximates poverty (See Appendix A for the CEM output).

We then specify a PCSE autoregressive model of order 1 that is weighted by the CEM weight and includes a series of controls that account for the remaining imbalance between indigenous and non-indigenous communities. It uses the yearly homicide rate per 100 thousand habitants at the municipal level as the dependent variable. Table 1 shows the regression model output.

Table 1 – PCSE (het ar1) Regression Model (Standard errors in parentheses)

	Homicides per 100k habitants
Indigenous	-8.2919***
	(1.5744)
Drug war	8.0608***
	(1.3366)
Indigenous X drug war	-2.9377*
	(1.6688)
Public services HDI	-89.5918***
	(8.8978)
North	3.0232**

[3] See Iacus et al. (2012) for an explanation on CEM models.
[4] See Beck and Katz (1995) for a detailed explanation of the PCSE model.

	(1.2242)
Population	0.00002***
	(0.00000)
Constant	76.2413***
	(7.5426)
State fixed effects	Yes
N	57,838
R2	0.0899
Rho	0.3966

Note: * p < .10; ** p < .05; *** p < .01

As independent variables we include a dummy variable that indicates whether there is a majority of habitants that speaks an indigenous language (*Indigenous*); we set the cut at 50% of the population speaking a native language.[5] *Drug war* indicates if it is a year in which the Mexican government is actively battling DTOs. Despite the fact that President Calderon publicly declared war on DTOs in December 2006, we set the initial year of the drug war in 2008, which is the year in which massive killings followed the capture of drug lords.[6] We include an interaction variable for indigenous municipality and drug war to verify the effect of the government policy on indigenous communities (*Indigenous X drug war*).

As control variables we include those that the existing literature has shown to have a significant effect on homicide levels. First, we include a human development index (*Public services HDI*) that measures the availability of public services in the municipality. Richer communities should be better prepared to fight criminals, yet their wealth makes them more attractive for criminals as well.

[5] To check for the robustness of our models, we include in Appendix B additional model specifications that use the cut at 66% of the population that speaks an indigenous language. The results do not significantly change.

[6] We include in Appendix B a replica of the regressions and the models' predictions using 2007 as initial year of the drug war. The results do not significantly change.

Second, for DTO´s, the value of the territory increases as it gets close to the United States border, this increases the likelihood of conflict among DTOs, which in turn increases homicides (Dell, 2011; Osorio, 2013). We account for this using a dummy variable, *North*, which indicates if the municipality capital is above 22 degrees of latitude.

Third, we include total population of the municipality (*Population*) to account for the supposedly higher incidence of crime in urban areas. Urban settings give criminals more opportunities to strike and are easier to hide in.

Finally, we include fixed effects by state (32 states), which controls for institutional and idiosyncratic variables that may affect the incidence of homicides at a given municipality.

There are several interesting findings from the model. *Ceteris paribus*, in the absence of a drug war, a municipality with more than half of its population speaking an indigenous language has an average 8.3 homicides less per 100 thousand inhabitants than non-indigenous communities. This 8.3 difference is almost double the homicide rate for the United States, and almost five times the rate for Canada.

The control variables behave as we expected. Our poverty proxy, *Public services HDI*, has a negative sign: *ceteris paribus*, poorer municipalities have more homicides. Municipalities closer to the United States border have more homicides, and more populated municipalities also have more homicides.

To have better understanding of our results, Table 2 shows the model predictions for four scenarios combining indigenous municipality and whether it was a year in which the drug war was taking place, while holding everything else constant.

Table 2 – Model predictions

	Not drug war	**Drug war**
Indigenous	10.0 (8.0 , 12.1)	15.2 (13.1 , 17.3)
Non-indigenous	18.3 (16.7 , 19.7)	26.4 (23.6 , 29.2)

Source: Authors' estimations. Note: Cells are model predictions and 95% confidence intervals in parentheses. The units of the predictions are homicides per 100 thousand habitants.

Table 2 shows that, *ceteris paribus*, violence dramatically increased in both types of municipalities as a result of the war on drugs launched by the Mexican government. Yet, the shock is bigger on average at non-indigenous municipalities: 8.1 (from 18.3 to 26.4) versus 5.2 (from 10 to 15.2 homicides) homicides per 100 thousand habitants.

Therefore, there is no firm evidence of a strong immunization effect of communal organization on preventing organized crime. Yet, the results point to a partial immunization effect.

The worst violence scenario is at non-indigenous municipalities in the midst of Mexico's drug war (lower-right cell in Table 2). In these areas, our model predicts an average homicide rate of 26.4 homicides—which is far above the 2012 average homicide rate of any continent in the world, and only below the average rates of two sub-regions: Central America and Southern Africa (UNODC, 2014).

Even without the drug war, indigenous municipalities in any scenario have lower homicide rates than their non-indigenous pairs, when controlling for potential dissimilarities between indigenous and non-indigenous communities.

Conclusions and Further Research

(BASED ON MEXICO FOR NOW…)

In this paper we have examined specific conditions under which communal organization is an effective deterrent to violent crime and to criminal organizations. The data that we analyzed on Mexico shows that in municipalities with a majority of indigenous population—as a proxy for citizens' collective decision-making—it is an effective deterrent to violent crime, but it may not be fully effective against organized crime.

Crime and violence have mushroomed in Latin America, making it important to learn about mechanisms that deter them. Although the focus of the discussion in this paper has been on rural indigenous communities, (mainly because communal organization is more evident, and measurable) there are analogous association schemes for other contexts, some are already in place, and others that can be implemented. Neighborhood watch associations in urban areas are an example of this.

Further research should focus on delving deeper into the specific institutions, within communal organization schemes, that minimize the incidence of crime. There is wide variation within societies that adopt some sort of collective decision making on public goods, including the role of the state as such in these processes.

Further research should also look into the conditions under which negative externalities are also the result of actions taken by organized communities to deter crime. Episodes of lynching and the emergence of self-defense groups are examples of such.

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APPENDIX A - COARSENED EXACT MATCHING-MEXICO

(a) Cut at 50%

```
. imb   i_deshumserv  pobtot, treatment(dum_indig50)

Multivariate L1 distance: .50362365

Univariate imbalance:

                    L1      mean       min       25%       50%       75%       max
i_deshumserv    .46466   -.11571    -.2888    -.1392    -.1218    -.0982      -.012
    pobtotal     .2645    -36452     181.6     -2689   -8948.2    -21560  -1.6e+06

. cem  i_deshumserv(#3) pobtot(1500 10000 100000 1000000) , treatment(dum_indig50)
(using the scott break method for imbalance)

Matching Summary:
-----------------
Number of strata: 10
Number of matched strata: 8

               0      1
      All  47063  11070
  Matched  46832  11064
Unmatched    231      6


Multivariate L1 distance: .40163037

Univariate imbalance:

                   L1     mean      min      25%      50%      75%      max
i_deshumserv   .38551   -.0792   -.2888   -.1004   -.0986   -.0848    -.012
      pobtot   .06115  -2956.7    181.6   -311.2    -1490  -1634.8        .
```

(b) Cut at 66%

```
. imb   i_deshumserv pobtot, treatment(dum_indig66)

Multivariate L1 distance: .53180967

Univariate imbalance:

                    L1      mean       min       25%       50%       75%       max
i_deshumserv    .48483   -.12274     -.249    -.1466      -.13     -.107      -.012
    pobtotal    .28797    -36083     181.6   -2663.2   -9087.6    -21760  -1.6e+06


. cem  i_deshumserv(#3)  pobtot(1500 10000 100000 1000000) , treatment(dum_indig66)
(using the scott break method for imbalance)
```

```
Matching Summary:
-----------------
Number of strata: 10
Number of matched strata: 8

               0      1
      All  49405   8728
  Matched  49174   8722
Unmatched    231      6


Multivariate L1 distance: .41682074

Univariate imbalance:

                   L1     mean      min      25%      50%      75%      max
i_deshumserv   .39551  -.08145    -.249   -.0996   -.1038    -.092    -.012
      pobtot   .05506  -3026.9    181.6     -306    -1403  -1279.4        .
```

APPENDIX B – ROBUSTNESS CHECK. ALTERNATIVE MODEL SPECIFICATIONS-MEXICO

Table 1B – PCSE. DV is the absolute number of homicides in the municipality

Indigenous	-0.5298***
	(0.0837)
Drug war	0.9959***
	(0.0778)
Indigenous X drug war	-0.4114***
	(0.1139)
Public services HDI	-7.5368***
	(0.5879)
North	0.7408***
	(0.1821)
Population	0.0001***
	(0.0000)
Constant	1.8669***
	(0.5844)
State fixed effects	Yes
N	57,838
R2	0.2754
Rho	0.5127

Note: * p < .10; ** p < .05; *** p < .01

Table 2B – PCSE Regression Models. Indigenous dummy at 66%.

DV:	**Homicides**	**Homicides per 100k**
Indigenous > 66%	-0.5163***	-10.3492***
	0.0751	1.4942
Drug war	0.8979***	7.5692***
	0.0699	1.2931
Indigenous X drug war	-0.4019***	-1.4691
	0.1143	1.8831
Public services HDI	-7.1953***	-94.2582***
	0.5298	8.0628
North	0.5223***	1.6368
	0.177	1.3099
Population	0.0001***	0.00001***
	0.0000	0.00000

Constant	1.8669***	81.484***
	0.5437	6.9239
State fixed effects	Yes	Yes
N	57,838	57,838
R2	0.2759	0.0891
Rho	0.5086	0.4032

Note: * p < .10; ** p < .05; *** p < .01

Table 3B – PCSE Regression Models – Drug war cut at 2007

	Indigenous > 50%		**Indigenous > 66%**	
	Homicides	**Homicides per 100k**	**Homicides**	**Homicides per 100k**
	1	2	3	4
Indigenous	-0.5403***	-8.8414***	-0.5287***	-11.0004***
	(0.0848)	(1.5998)	(0.0759)	(1.5188)
Drug war	0.6355***	5.4626***	0.5717***	5.0178***
	(0.0755)	(1.2528)	(0.0679)	(1.2187)
Indigenous X drug war	-0.2504**	-0.0208	-0.2405**	1.7733
	(0.1097)	(1.5834)	(0.1098)	(1.7788)
Public services HDI	-7.247***	-88.2924***	-6.9358***	-92.8371***
	(0.5905)	(8.9587)	(0.5326)	(8.1216)
North	0.7393***	3.032**	0.5239***	1.6395
	(0.1805)	(1.2207)	(0.1756)	(1.3081)
Population	0.0001***	0.00002***	0.0001***	0.00001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Constant	1.6798***	75.4747***	1.6968***	80.6244***
	(0.5841)	(7.5767)	(0.5437)	(6.9566)
State fixed effects	Yes	Yes	Yes	Yes
N	57,838	57,838	57,838	57,838
R2	0.2766	0.0892	0.2769	0.0884

Note: * p < .10; ** p < .05; *** p < .01

Table 4B – Model (2) predictions – Drug war cut at 2007

	Drug war	**Not drug war**
Indigenous	15.3 (13.3 , 17.3)	9.8 (7.7 , 11.9)
Non-indigenous	24.1 (21.5 , 26.7)	18.7 (17.3 , 20.0)

Source: Authors' estimations. Note: Cells are model predictions and 95% confidence intervals in parentheses. The units of the predictions are homicides per 100 thousand habitants.

Table 5B – Model (1) predictions – Drug war cut at 2007

	Drug war	**Not drug war**
Indigenous	1.9 (1.7 , 2.1)	1.5 (1.4 , 1.6)
Non-indigenous	2.7 (2.5 , 2.8)	2 (2.0 , 2.1)

Source: Authors' estimations. Note: Cells are model predictions and 95% confidence intervals in parentheses. The units of the predictions are number of homicides.