

Death, Drugs, and Data: A Study of Drug Violence and Voting Rates in Mexico

Abstract: The relationship between violence and voting in democratic states has been the center of considerable debate in recent years. In my analysis of criminal violence and voter turnout in Mexico between the years of 1999 and 2017, I find that high homicides rates decrease voter turnout in heavily affected municipalities. Likewise, I also determine that the occurrence of noteworthy violent events causes a more than two percent decrease in voter participation in municipalities. My findings signify that criminal drug violence in Mexico, fueled by cartels and gangs, has negatively affected democratic participation and driven voters away from the polls.

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Introduction:

Fragile democracies in Central and Latin America have been adversely affected by the growing drug trade. Cartels, terrorist organizations, and crime lords in these regions have grown to become major players in the political fields of their respective countries as an outgrowth of the booming narcotics markets that have emerged in the past thirty to forty years. Mexico is one of these democratic nations who has been on the frontline of the rapidly expanding criminal networks based on illicit drugs. The country is a major source of drug production and distribution, and its citizens are often caught in the middle of intense violence for control of resources, markets, and territory. Despite high rates of drug violence and the recent emergence of narcoterrorism, Mexico has remained a relatively stable democracy over the past few decades. However, the massive uptick in drug related violence across the nation begs one to question the extent such violence has affected the participation of voters in the political process. This study seeks to understand how, and to what extent, violence caused by Drug Trafficking Organizations (DTOs) has reshaped the democracy in Mexico.

Mexico and Drug Cartels

Mexico has struggled profoundly with widespread drug violence and cartel activity. For the past four years the Mexican homicide rate of roughly 29 deaths per 100,000 people has been more than 5 times than that of the United States¹, with somewhere between 30% to 60% of deaths being attributable to organized crime². In 2020, four Mexican States: Chihuahua, Baja California, Colima, and Guanajuato, had an astronomical homicide rate of 70 deaths per 100,000 people. These staggering figures are a product of the a near constant conflict between rival drug cartels, government forces, and local civilian militias. The fighting is mainly over territory and

¹ “Mexico's Homicide Rate Stayed High in 2020 despite Pandemic”

² Calderón, Heinle, Ferreira, Shirk, 15

control over the trafficking routes which are used to smuggle millions of pounds of marijuana, heroin, cocaine and various other drugs into the United States every year. Profit from these drugs is estimated by various sources to range anywhere from \$5 to \$15.5 billion dollars per year, allowing Mexican drug cartels to exert a powerful influence on the average Mexican household making just \$13,965 annually³. Such high stakes have driven vicious fighting across Mexico, shifting from nighttime shootings in crime ridden areas to brazen raids on police checkpoints in broad daylight⁴. Today, the most powerful cartels operate their own private armies and have armaments ranging from armored trucks to missile launchers. However, drug trafficking organizations in Mexico have not always wielded such power, and only recently have grown from humble beginnings into global threats.

Originating as recently as the late 1980s, drug cartels in Mexico are a relatively new phenomenon. The birth of such cartels can be traced back to a single man, Miguel Ángel Félix Gallardo (commonly known as “The Godfather”) who, in 1989, created the Guadalajara Cartel⁵. This fledgling criminal organization operated as a middleman for Colombian organized crime groups to smuggle cocaine, marijuana, and heroin into the United States. Working with drug kingpins like Pablo Escobar, criminal elements in Mexico, and numerous high level political and military figures within the Mexican government, Gallardo created a powerful network that brought drugs into America’s southern border. However, two major events caused the Guadalajara cartel to rupture and organized crime to explode in Mexico. The first was the collapse of the Colombian cartels after Pablo Escobar was killed in 1993⁶. Without a singular leader and facing a powerful government crackdown, Colombia’s drug cartels were greatly

³ Mexico. (n.d.).

⁴ Calderón, Heinle, Ferreira, Shirk, 15

⁵ Kellner, Pipitone, 30

⁶ Ibid, 30

weakened and lost the ability to exert control over their Mexican affiliates. In response Mexican cartels began to set their own prices for smuggling drugs like cocaine and began to produce their own products, from marijuana to methamphetamines. This boom was compounded by the arrest of Gallardo in 1989, who attempted to split his Guadalajara cartel into pieces for each of his family members. The end of monopolies by major cartels in both Mexico and Colombia allowed new players to enter the field of organized crime and stake out their own place in the world of drug trafficking.

For much of the 1980s and 1990s drug cartels grew in Mexico at an impressive rate. As demand in the United States soared for recreational drugs, so did the potential for profits, leading to the roughly 200 drug trafficking organizations that exist in Mexico today⁷. Additionally, the Mexican PRI (Partido Revolucionario Institucional), the center right-wing political party which had held uninterrupted power in Mexico from 1929 to 2000, was widely corrupt, and many powerful political leaders formed tacit agreements with the cartels to allow for joint profits. With the government turning a blind eye to all but the most blatant criminal activity, drug cartels were able to create production centers, supply chains, and their own private armies with little backlash. The most powerful of these cartels are still major players today, including the Sinaloa Cartel, the Gulf Cartel, the Jalisco New Generation Cartel. Though constantly in conflict with one another for territory, supply routes, and personnel, drug cartels in Mexico were still in the process of emerging and drug violence was mostly clustered in a small number of localized municipalities. This localized violence combined with the PRI's purposeful ignorance allowed Mexico to be relatively peaceful, as evidenced by its moderate homicide rate of 13 deaths per 100,000 people, a number comparable to the rates of other nations in Latin America⁸. However,

⁷ Calderón, Heinle, Ferreira, Shirk, 40

⁸ Cervantes, Agudelo-Botero, Gómez-Dantés, 3

in 2000 a radical shift occurred in Mexican politics that had a major impact on drug cartels across the nation.

In 2000, sick of unchecked corruption, widespread incompetence, and rampant criminal behavior, the Mexican public ended the PRI's reign. Vicente Fox of the right wing PAN (Partido Acción Nacional) party took power in a tight victory, promising a crackdown on the powerful drug cartels embedded deeply in all parts of Mexican society. His election set the stage for a decade long "drug war" against the cartels, escalating violence across the nation. President Felipe Calderón, the successor to President Fox in 2006, began this drug war in earnest, using the Mexican military to directly combat the most powerful drug cartels in States such as Michoacán, Chihuahua, and Nuevo Leon⁹. Tens of thousands of soldiers were deployed in some of the most heavily contested areas in Mexico leading to full scale war in most of the country. In addition to aggressive government tactics in the early 2000s, Mexican cartels also escalated their rivalries against each other. In 2003 brutal violence erupted in the city of Nuevo Laredo between the long standing Sinaloa cartel and the ultra-violent branch of the Gulf Cartel, known as *Los Zetas*¹⁰. This conflict, originating over territory, still continues today.

Caught in between the drug cartels and the government have been the people of Mexico themselves. From 2006 to 2020 an estimated 150,000 people have been killed by drug related violence, with an additional 73,000 missing. Over the course of Calderón's Presidency, which lasted from 2006 to 2012, a majority (roughly 83,000) of these deaths occurred. During these years, the Mexican federal government attempted to hunt down and apprehend major drug lords in massive military operations. These missions rarely succeeded in capturing the leadership of most drug trafficking organizations and led to civilian deaths during the crossfire. Even when the

⁹ Teiner, 84

¹⁰ Beittel, 22

Mexican government was able to arrest senior figures in cartels, new kingpins replaced them in a matter of weeks.

In the years after such brutal violence, successive Presidents have attempted to scale back their campaign against the cartels, looking to use economic reforms, educational improvements, and smaller police operations to loosen the criminal stranglehold on Mexico. Today, Mexico's current President, Andrés Manuel López Obrador, has championed these efforts, and promoted a campaign of, "Abrazos, no balazos" (Hugs, not bullets) to deescalate drug violence¹¹. However, such attempts have largely failed, with homicide rates slowly increasing back towards their peak in 2011. No longer threatened by the government, cartels have turned against each other, leading to turf wars across Mexico.

Mexican Democracy, Elections, and Narco-Terrorism

Mexico, despite its longstanding struggles with drug violence and corruption, is considered a flawed, but functional, democracy. However, challenges created by the rise of drug cartels in the 21st century have shaken the Mexican political system to its core.

The constant dominance of the PRI party in Mexico for over 70 years led to both stagnation and corruption. During this time, Mexico was an authoritarian regime in all but name. Through initial economic success, via the so-called "Mexican Miracle" where GDP grew 6% every year for 30 years, and widespread handouts to poor areas of Mexico, the PRI maintained absolute dominance until the late 1980s¹². However economic stagnation coupled with internal party squabbles led to gradual change. In 1977 the PRI allowed an increase in the size of the Mexican legislature and later implemented reforms that led to elections via a proportionality of votes. Additionally, after a 1988 Presidential election was widely regarded as fraudulent, the PRI

¹¹ Calderón, Heinle, Ferreira, Shirk, 43

¹² Emily, Shirk, 72

permitted the establishment of the IFE (Federal Election Institute) to independently certify elections. Despite these concessions, the PRI was heavily impacted by corrupt practices of its politicians. In the 1990s numerous PRI officials were indicted for their connections to drug cartels, including state governors and senior members of the military¹³. Widespread corruption and general dissatisfaction led to the groundbreaking Presidential elections of 2000, where the PRI were thrown out of power in favor of PAN.

Despite political change, Mexican democracy is still greatly flawed. As drug cartels have grown in size and power in Mexico, they have attempted to make serious attempts to exert influence over both national and local politics. Corruption continues to be the tool of choice for organized crime, with allegations of bribery being leveled against major figures in virtually all Mexican political parties. Even a former Mexican President, Enrique Peña Nieto, was accused of taking an \$100 million dollar bribe from the Sinaloa cartel during his time in office¹⁴. Aside from offering kickbacks to politicians, cartels have worked directly with members of the government to silence potential threats. Taking the form of beatings or kidnappings by local cartel members, this behavior was common throughout the 2000s and 2010s. However, the practice became notorious after the murder of 43 students in the State of Guerrero in 2014. The massacre of these innocent high school age civilians was later found to have been ordered by a local mayor working in conjunction with local police and drug cartels in retaliation for a peaceful demonstration¹⁵. Despite anti-corruption efforts, cooperation between portions of the Mexican government and drug cartels continue to this day, decreasing legitimacy and confidence in the systems the government is trying to protect.

¹³ Morris, Stephen D. 29-43.

¹⁴ Edmonds-Poli, Emily, and David A. Shirk, 269

¹⁵ Sergio, 10

Literature Review

The link between violence and voter participation has been the subject of much debate over recent years. Despite numerous scholastic endeavors, there is a notable lack of consensus on this subject. However, it is understood that democracy and crime do not mix well. Numerous studies have found that democratic states with high levels of crime have low trust in democratic institutions,¹⁶ and that the erosion of such trust may eventually lead to a change in government type¹⁷. Citizens who live through constant violence often feel that they cannot trust their government to provide for the basic necessities of safety and security, and therefore have little wish to continue supporting their existence. These findings make clear that citizens residing in democracies do not tolerate violence in their communities and home nations. Nevertheless, a divergence in scholastic agreement is found regarding how citizens politically respond to violence in democracy. Arguments appear to fall under three main categories: violence causes increased voter turnout, violence suppresses voter turnout, and that there is no relationship between violence and voter turnout.

Violence Increases Voter Turnout

Numerous scholars have hypothesized that the relationship between violence and voting is a positive one. Attributed to a sort of “rally around the flag” effect, these authors hypothesize that violence in a democratic society pushes people to participate in elections out of both patriotism and a wish to elect government officials who will prevent further attacks. In the 2013 study, “*Voters versus terrorists: Analyzing the effect of terrorist events on voter turnout*” by Robbins, Hunter, and Murray; the authors make a compelling case for this argument¹⁸. In their

¹⁶ Blanco, Ruiz, 284

¹⁷ Fernandez, Kuenzi. 450

¹⁸ Robbins, Hunter, Murray. 495

cross sectional analysis of 51 nations, they find that terrorist attacks increased voter participation in democracies. The authors argue that terrorist attacks are, “threatening and novel political events that lead to anxiety in the electorate, which, in turn, induces individuals to political environment more closely and to attribute greater salience to proximate political events.”¹⁹ However, the majority of democratic nations analyzed in their study are wealthy, stable countries in Europe and North America, who most commonly experience infrequent but heavily publicized religious based terror attacks. These attacks are significantly different than terrorist attacks seen in Latin America, which are most often carried out by cartels and organized crime, and attacks in Africa, which often are driven heavily by ethnic differences. Such geographic variability may be the cause of some of the disagreement in current literature.

Other authors have supported this positive relationship between voter turnout and violence, but have mostly analyzed its occurrence in limited groups within a nation’s population. Blattman finds that adults who were previously abducted and pressed into service as child soldiers in Uganda participate in democracy at higher rates than their non-abducted peers²⁰. While Bateson argues that victims of crimes, both non-violent and violent, turn out to vote in higher rates than nonvictims²¹. These arguments tend to attribute increased political participation to direct involvement in some sort of violent occurrence, rather than simply witnessing or being in close proximity to them.

No Relationship between Violence and Voting

Others have posited that violence and voting are simply unrelated. A 2018 study by Bekoe and Burchard found that across Sub-Saharan Africa, the occurrence of violence had no

¹⁹ Ibid, 496

²⁰ Blattman, 231-47.

²¹ Bateson, 570

substantial effect on voter turnout for legislative elections²². The authors argue that this lack of relationship may be caused by competing political forces, some who seek to depress voter turnout through attacks and some who use violence to intimidate voters into participating in elections. Voters may simply become confused by the multiple opposing sides who are all using conflict to push them towards either participation or abstention. As a result, violence against voters may have no notable effects on participation. Additionally, when violence is a constant in a community, voters simply may attempt to ignore the bloodshed going on around them. For those living in democracies with either a high level of criminal or political violence, many may attempt to simply go about living their normal lives within the chaos. Voting may simply be an extension of this attempt at normality, and therefore be unaffected by violence.

Violence Decreases Voter Turnout

The final prevalent argument in scholastic literature is that increased levels of violence depress voter turnout. Research by Bratton, who authored “*Vote Buying and Violence in Nigerian Election Campaigns*,” found that violence and intimidation scares Nigerians away from the polls during elections²³. He argues that Nigerians are driven away from voting due to fear that they or their family will be attacked during the voting process or in retaliation for their votes. Further support for this argument can be found in a study of insurgent impacts on elections in Afghanistan by Condra Et. Al²⁴. These authors determine that when IED’s explode on the routes to polling places or when attacks occur in the days before an election, voters will choose to abstain from voting. Notably, voters will also express decreased satisfaction and trust in the electoral process when such violence occurs²⁵. Additional research in, “*Bullets and Votes*:

²² Bekoe. Burchard, 30

²³ Bratton, 1

²⁴ Condra, Long, Shaver, Wright, 3227

²⁵ Ibid, 3228

Violence and Electoral Participation in Mexico” by Trelles and Carreras delves further into why voters may choose to abstain from voting in the face of violence²⁶. These authors carry out a similar study of violence and Mexican voter turnout to my own, using both panel and survey data. They find a negative correlation between violence (as represented by the homicide rate) and voting in Mexican elections between 2000 to 2009. Their survey data, a series of 1,562 observations taken from Mexican citizens, assists additionally in providing context to the relationship between violence and voting. Participants in the survey indicated that high rates of violent crime caused them to both stay home to provide for their own safety and to become, “so disenchanted with politics that they prefer to “exit” the system by not participating in local and national elections”²⁷. Such reasoning indicates that voters in violent areas are primarily concerned for their own wellbeing and will cease to have faith in democratic systems if they cannot guarantee basic safety during the electoral process.

Theoretical Intuitions

I believe that the relationship between violence and voting in Mexico is negative. As violence rises, I hypothesize that voting will go down. I ascribe such a relationship to the two factors, fear and apathy, previously revealed by Trelles and Carreras in their research²⁸.

Fear is a relevant and justified reaction in the face of Mexican drug cartels. For the average Mexican citizen, the cartel is almost always present. No state in Mexico has remained untouched by drug violence, and organized crime has carried out attacks against those both large and small²⁹. When choosing whether to participate in the democratic system, Mexicans have to fear both targeted and non-targeted violence. Targeted violence is often angled towards

²⁶ Trelles, Carreras, 89-123.

²⁷ Ibid, 111

²⁸ Ibid, 101

²⁹ Kellner, Pipitone, 32

candidates, community leaders, and politicians³⁰. These figures are all commonly assassinated by the cartels in Mexico, especially when they speak out regarding criminal elements in their localities³¹. In 2018 alone, an estimated 132 candidates and political workers were killed in Mexico, with attacks occurring in virtually every state³². Voters who express support for politicians are also vulnerable to attack, and are often threatened by posters, harassing messages, and visitations by criminals. In the spirit of self-preservation, it is logical that citizens will value their life over participating in elections and choose to abstain from voting. Generalized violence is also a present danger. In many of the ultra-violent municipalities where drug cartels are most active, violent crime may be so pervasive that it is a danger to merely leave the house and vote. If a citizen perceives that violence in their community is so high, whether from cartel clashes, federal police raids, or the day to day activities of criminal groups, they may simply stay in their own home. Taken together, both targeted and untargeted violence are the tools of drug cartels to drive people away from the polls.

Political apathy is another likely response to violent criminal behavior in Mexico. Since the war on drugs began in 2007 with the election of President Felipe Calderon, violent crime in Mexico has surged. Despite a change in party leadership, multiple new Presidents, and a wide variety of strategies, drug violence in Mexico has continued unabated. In many areas the federal government has retreated or all but disappeared, leaving Mexicans to fend for themselves³³. Such abandonment has left Mexicans with virtually no reason to turn up and vote in elections. Even when elections do occur, cartel fueled corruption is a widespread occurrence³⁴. Politicians, police

³⁰ Juarez

³¹ Teiner, 87

³² Diaz, Campisis

³³ Woodman

³⁴ Morris, 30

officers, and even military leadership have all been found to be in the pay of notable cartels, greatly decreasing voter trust in the system. Such allegations of corruption add credence to my theory, given that previous studies have found a strong causal link between high corruption and decreased voter turnout³⁵. It is likely that voters in Mexico perceive both the failure and corruption of the Mexican government, with a sizable number choosing to abstain from the political process altogether.

Hypotheses

My hypotheses are based around previous research and theoretical intuitions about the relationship between criminal drug violence and voting. Because the activities of drug trafficking organizations are highly illegal, it is difficult to measure drug violence. I attempt to quantify a measure of drug violence in Mexico by using government provided homicide rates and independently logged tallies of violent events attributed to drug cartels. Using these measures of drug violence, I hypothesize that an increase in criminal violence will lead to a decrease in voter turnout during elections. My exact hypotheses are as follows:

H1: *High number of homicides in a municipality will lead to lower rates of voter turnout in federal elections that year.*

H2. *A high number of drug and terror related deaths in a municipality will lead to lower rates of voter turnout in federal elections that year.*

H3. *Occurrences of major violent events in a municipality will lead to lower rates of voter turnout in federal elections that year.*

³⁵ Stockemer, LaMontagne, Scruggs, 83

My first hypothesis argues that as homicide rates rise, the voter turnout will fall. This is based on the intuition and statistics that a majority of homicides in Mexico are committed by drug trafficking organizations. It is currently estimated that organized crime groups in Mexico commit anywhere between one third and one half of homicides in the country³⁶. As such, the homicide rate of Mexican municipalities will be an accurate measure of drug violence and its change can be measured in comparison with voter turnout rates. This hypothesis follows previous theoretical intuitions by Bratton, as well as Trelles and Carreras, that high levels of violence in a geographical region cause its residents to be so fearful that they abstain from voting altogether.

My second hypothesis follows the same theoretical intuition as the first but provides another measure of drug violence. This dataset, compiled by the University of Uppsala, records tallies of violent deaths carried out by various organized groups. I argue that as the rate of the violent deaths rise the voting rate in these towns will fall.

Lastly, my third hypothesis advances that when major violent events occur in a municipality, as recorded by the University of Uppsala's database, the voting rate will fall. Unlike my first two hypotheses which are examining how increasing or decreasing rates of drug violence effect political participation, this final hypothesis is centered on the effect of the occurrence of individual events on voter turnout rates. When major deadly events occur in a municipality (i.e., the death of multiple people in an armed raid, the assassination of an individual politician, or the massacre of civilians) it will be highly noticeable to the residents of said municipality, likely more than high numbers of individual homicides. I believe such violent

³⁶ Calderón, Heinle, Ferreira, Shirk, 15

events mere occurrence will have a noticeable impact on people’s decisions to participate in elections, and that municipalities where these events occur will have lower voting rates.

Data Description

**Table 1:
Description of Data Sources³⁷**

Variable	Data Description	Observations	Mean	Std. Dev.	Min	Max	Source
Independent Variables							
Homicide Rate	Homicide Rate per 100,000 people (1999-2017)	26,835	37.91	57.568	0.665	1988	INEGI
Violent Death Rate	Violent Death rate per 100,000 people (1999-2017)	44,898	.2595	6.353	0	444	UCDP GED
Violent Event Occurrence	Occurrence of Violent Events (coded 0 or 1)	44,898	.0097	.0980	0	1	UCDP GED
Dependent Variable							
Voter Turnout Rate	Voter Turnout Rate (2000-2015)	13,746	53.36	13.906	0.071	105*	INEGI

*Voting Rate above 100% attributed to single data point misinput by INEGI. Inclusion or exclusion has no impact on regression results.

To empirically test my numerous hypotheses, I have drawn data from a variety of sources. To acquire data for my dependent variable, the voter turnout rates in Mexican federal elections by municipality, I used data from the Mexican INEGI (National Institute of Statistics and Geography)³⁸ and its Federal Electoral Institute (IFE). This autonomous agency collects data from all sectors of Mexico acting independently from the Mexican government. From this

³⁷ Links to data located in Appendix

resource I was able to collect data regarding voter turnout rates for 6 Federal elections between the years of 1999-2017. These elections, which took place in 2000, 2003, 2006, 2009, 2012, and 2015, are held every three years to elect members of the lower house of Mexico's bicameral legislature, the Chamber of Deputies³⁹. Although other federal elections for positions such as Senator and President occur in Mexico every six years, the frequency of Federal elections for the Chamber of Deputies allows me to provide an accurate picture of how drug violence has affected Mexicans for the first 17 years of the 21st century.

I have chosen to use Mexican municipalities for my unit of analysis to allow for the analysis of trends on a more focused and local scale. These municipalities are the second administrative divisions of Mexico below states, totaling 2,485 in number. Their smaller size and more localized focus make them effective for analyzing the effect of drug violence on voter turnout in individual communities within Mexico.

To determine the homicide rates in Mexican municipalities between my time frame, I once again drew data from the INEGI. This data source provided me with tallies of homicides in each municipality for every year between 1999 and 2017. To calculate a homicide rate, I divided the yearly number of homicides for a given municipality by the nominal voter list for said municipality (also provided by the INEGI). This calculation provides me with an accurate homicide rate for Mexican municipalities, because, as of 2009, over 95% of Mexican citizens are registered to vote⁴⁰. By using information from nominal voting lists, I received a more frequently updated measure of the Mexican population, and therefore a more accurate homicide rate. A detailed summary regarding my homicide list can be found in Table 1 above.

³⁹ Edmonds-Poli, Shirk, 109

⁴⁰ Rosenberg, Chen, 14

The data for both my 2nd and 3rd hypotheses was obtained from the Uppsala Conflict Data Program's (UCDP) Georeferenced Event Dataset (GED)⁴¹. The UCDP project collects data regarding organized violence around the globe. Their data records violence perpetrated by state and non-state actors, including terrorist organizations, organized crime, and militia groups. The observations are collected from various media sources or government reports in the country of origin, and mainly include notable violent events that can be identified and credited to a specific party. Due to the UCDP's stringent rules for accepting events into its dataset, this source provided me with a much smaller number of observations (see Table 1), but also allowed for a more focused analysis of drug violence in the country. I used this data to calculate both the rate of violent deaths in Mexico per 100,000 people, and a simple dummy variable that indicated whether or not a municipality had a violent event in a given year.

Empirical Design

To empirically test my hypotheses, I decided to run a number of Ordinary Least Squares (OLS) fixed effect regression models. Because my data is in panel format, with a large number of observations taken over the years between 1999 and 2017, a fixed effect regression model was the optimal choice for my analysis. I use Municipality and Year fixed effects to control for unobservable bias that is both time invariant and time variant. These possible biases include varying poverty rates, racial and ethnic compositions, and increased voter turnout during presidential election years, etc. By making use of fixed effects models, I am able to focus on intra-municipal shifts in voter turnout based on my independent variables. Additionally, I used the voter registry provided by the INEGI to generate a variable for population, which is used in my regression model as an added control.

⁴¹ Öberg, Magnus, *Uppsala Conflict Data Program*

I run similar models for all 3 of my hypotheses, examining the effect of the homicide rate, violent death rate, and occurrence of violent events on voter turnout in Mexican federal elections. I also make use of both lags and leads to examine the effect of both the homicide rate and violent death rates 1 and 2 years before and after federal elections. By implementing lags, it is possible to determine how far in the past voters consider a high homicide rate, a high violent death rate, or a violent event occurrence important. In contrast, I make use of leads as a placebo test. I run 1 or 2 year leads on all three of my independent variables to confirm that there is not a statistically significant relationship between voter turnout rates and violence in the years after elections. This helps to reinforce the legitimacy of my hypotheses and confirm that such violence does have a real relationship with voter turnout in Mexican elections. A list of all my models can be found below.

Model 1: *Basic Homicide Fixed Effect Regression*

$$\text{Voter Turnout}_{it} = \beta_0 + \beta_1 (\text{Homicide Rate}) + \beta_2 (\text{Log Population}) + \beta_3 (\text{Municipality FE}) + \beta_4 (\text{Year FE}) + \epsilon$$

Model 2: *Basic Violent Death Rate Fixed Effect Regression*

$$\text{Voter Turnout}_{it} = \beta_0 + \beta_1 (\text{Violent Death Rate}) + \beta_2 (\text{Log Population}) + \beta_3 (\text{Municipality FE}) + \beta_4 (\text{Year FE}) + \epsilon$$

Model 3: *Lagged and Leaded Homicide Rate Fixed Effect Regression*

$$\text{Voter Turnout}_{it} = \beta_0 + \beta_1 (1 \text{ Year Lagged Homicide Rate}) + \beta_2 (2 \text{ Year Lagged Homicide Rate}) + \beta_3 (1 \text{ Year Leaded Homicide Rate}) + \beta_4 (2 \text{ Year Leaded Homicide Rate}) + \beta_5 (\text{Log Population}) + \beta_6 (\text{Municipality FE}) + \beta_7 (\text{Year FE}) + \epsilon$$

Model 4: *Lagged and Leaded Homicide Rate Fixed Effect Regression*

$$\text{Voter Turnout}_{it} = \beta_0 + \beta_1(1 \text{ Year Lagged Violent Death Rate}) + \beta_2(2 \text{ Year Lagged Violent Death Rate}) + \beta_3(1 \text{ Year Leaded Violent Death Rate}) + \beta_4(2 \text{ Year Leaded Violent Death Rate}) + \beta_5(\text{Log Population}) + \beta_6(\text{Municipality FE}) + \beta_7(\text{Year FE}) + \varepsilon$$

Model 5: *Violent Death Occurrence Fixed Effect Regression*

$$\text{Voter Turnout}_{it} = \beta_0 + \beta_1(\text{Violent Death Occurrence}) + \beta_2(1 \text{ Year Lagged Violent Death Occurrence}) + \beta_3(\text{Log Population}) + \beta_4(\text{Municipality FE}) + \beta_5(\text{Year FE}) + \varepsilon$$

Results

The results of my analysis were clear. They suggest that the occurrence of drug violence in Mexican municipalities lowered voting rates during federal elections. This suggests that cartel violence and narcoterrorism have a negative relationship with voter turnout in Mexican democracy. The data also suggests that when well publicized or especially deadly violent events happen, their mere occurrence causes a statistically significant drop in voter turnout. Such results display, in stark clarity, the power that armed groups can exert in a democratic society even when not engaging in acts explicitly designed to drive voters away from the polls.

Table 2.

Voter Turnout as Function of Homicide and Violent Death Rates

	1	2
	Voter Turnout	Voter Turnout
Homicide Rate	-0.0109*** (0.00176)	
Violent Death Rate		-0.00940 (0.00970)
Log Population	-5.965*** (0.841)	-5.813*** (0.843)
Year 2003	-16.13*** (0.236)	-16.11*** (0.237)
Year 2006	-2.683*** (0.268)	-2.660*** (0.268)
Year 2009	-10.80*** (0.313)	-10.84*** (0.313)
Year 2012	6.473*** (0.328)	6.313*** (0.327)
Year 2015	-4.734*** (0.348)	-4.800*** (0.348)
Constant	112.3*** (7.453)	110.8*** (7.460)
N	13736	13736

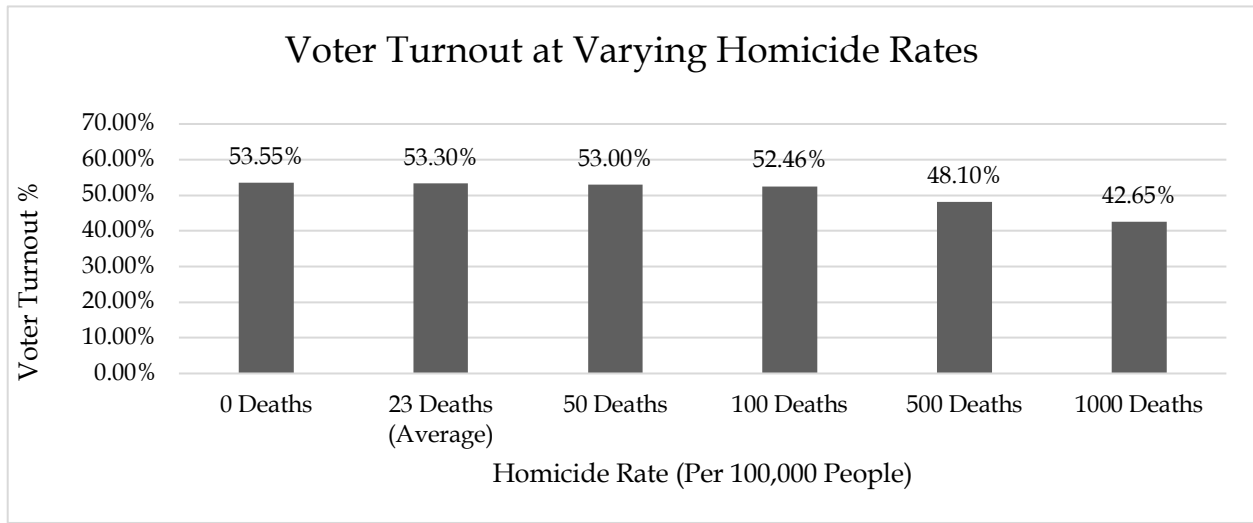
Standard Errors in Parentheses; * p<0.05, **p<0.01, ***p<0.001

H1. High number of homicides in a municipality will lead to lower rates of voter turnout in federal elections that year.

My primary hypothesis is supported by statistically significant data achieved through performing an OLS fixed effect regression. As displayed in Table 2, a one unit increase in the homicide rate will result in a decrease in voter turnout in any given Mexican municipality by

-.010 percent. Though the relationship between the homicide rate and voters appearing at the polls is small, it is not spurious. With a P value of less than 0.000, the correlation between the independent and dependent variable is clear. Table 4 also supports this hypothesis and displays that a one unit increase in the homicide rate the year before results in a -.0109 percent decrease in voter turnout. This result is highly logical, as federal elections in Mexico normally take place in July, and citizens are likely still conscious of homicides that took place only a few months before. A placebo test is also performed in Table 4 to display whether the homicide rate in one to two years after the last federal election has any bearing on the voting rate. The result of this test is statistically insignificant, signifying that the relationship between the homicide rate and voting rate in Mexican municipalities is a real causal effect and not caused by any other anticipatory or pre-existing trends. These results are especially enlightening when viewed in the broader context of certain extremely violent municipalities in Mexico. Table 3, below, displays how much voter turnout falls at varying homicide rates. In areas where the homicide rate is as high 1000 murders per 100,000 people, the voter turnout can be suppressed more than 10%. Such a steep decline in voting shows that high numbers of homicides can strongly impact the democratic process in municipalities. Signifying that as Mexican citizens witness more and more murder in the communities they call home, the less they wish to vote in upcoming federal elections.

Table 3



This data falls line with previous research regarding Mexican municipalities and homicide rates by Trelles and Carreras. In their research of federal elections from 2000 to 2009, they found a similar decrease in voter turnout of $-.66\%$ per one unit increase in the homicide rate (per 1,000 people)⁴². It is likely that the discrepancy between my result of $-.010\%$ and their result of $-.66\%$ is due to a combination of their decision to use a Fixed Effects Vector Decomposition model and my data's inclusion of two additional federal elections in 2012 and 2015⁴³. Despite the differences, my data helps to support Trelles and Carreras' original findings that homicide rates heavily affect voting rates in Mexico and provides a more up to date picture on the constantly evolving relationship between these two variables.

⁴² Trelles Carreras, 108

⁴³ Greene, 136

Table 4.

Voter Turnout as a Function of Lagged and Led Homicide and Violent Death Rates

	1	2
	Voter Turnout	Voter Turnout
Homicide Rate	-0.00998*** (0.00219)	
Homicide Rate (T-1 Year)	-0.00663*** (0.00201)	
Homicide Rate (T-2 Years)	-0.00198 (0.00196)	
Homicide Rate (T+1 Year)	0.000740 (0.00200)	
Homicide Rate (T+2 Years)	-0.000951 (0.00202)	
Violent Death Rate		-0.00195 (0.0102)
Violent Death Rate (T-1 Year)		-0.00336 (0.0114)
Violent Death Rate (T-2 Years)		-0.00156 (0.0152)
Violent Death Rate (T+1 Year)		-0.0281 (0.0154)
Violent Death Rate (T+2 Years)		0.00233 (0.0128)
Log Population	-5.416*** (1.024)	-5.075*** (1.024)
Constant	91.59*** (9.166)	88.18*** (9.167)
N	11448	11448

Standard Errors in Parentheses; * p<0.05, **p<0.01, ***p<0.001

H2. A high number of drug and terror related deaths in a municipality will lead to lower rates of voter turnout in federal elections that year.

To determine the effect that drug and terror violence related deaths had upon the voting rate for federal elections I again performed a OLS fixed effect time series regression. However, unlike the homicide rate, the violent death rate does not appear to be significantly correlated to voter turnout. As seen in both table 2 and table 4, neither the violent death rate nor any of its lags and leads have any statistical significance. This signifies that the results from this analysis invalidate the hypothesis and suggest the relationship between these two variables is spurious. These results imply that not only does the rate of drug and terror related deaths not matter for the year of federal elections, but it also does not matter whether these types of deaths occur in the years prior to elections as well.

It is likely that a major cause for the invalidation of this hypothesis was simply a lack of pertinent information. To calculate the violent death rate, I used a small number of observations from the UCDP Georeferenced Event Dataset, which was focused mainly on recording notable violent events themselves, and not all drug related murders or violence. Though the data is statistically insignificant, it does display a drop in voter turnout when a one unit increase in the violent death rate occurs. I suspect that if more entries were available, this data would resemble the relationship seen between the homicide rate and voter turnout.

Table 5.

Voter Turnout as a Function of Violent Event Occurrences

	Voter Turnout
Violent Event Occurrence	-2.294** (0.824)
Violent Event Occurrence (T-1 Year)	-2.665** (0.856)
Violent Event Occurrence (T-2 Year)	-0.484 (0.802)
Violent Event Occurrence (T+1 Year)	-0.472 (0.801)
Violent Event Occurrence (T+2 Year)	-0.960 (0.855)
Log Population	-5.049*** (1.024)
Constant	87.95*** (9.166)
N	11448

Standard Errors in Parentheses; * p<0.05, **p<0.01, ***p<0.001

H3. Occurrences of major violent events in a municipality will lead to lower rates of voter turnout in federal elections that year.

As displayed in table 5, I ran another fixed effect regression to determine whether the occurrence of a violent event in a municipality would lead to lower voter turnout rates. This regression produced results that supported my hypothesis. I found that that when a violent event occurred in a given municipality it would drive down voter turnout by 2.294% the year of the election. Lagging the variable by one year also resulted in the vote being driven down by 2.665%, indicating that violent events the year before also have an effect on voting rates. However, lagging violent events by 2 years produced no statistically significant data, suggesting

that events that happened two years in the past were disregarded by Mexican voters. The results of 1 and 2 year leads also produced statistically insignificant data, which assists in again validating my hypothesis. These invalidated leads display that violent events that occurred in the 2 years after elections have no bearing on the results of the election they succeed.

The results of this regression provide an enlightening picture into how Mexicans perceive violence in their communities, and how such violence influences their decision to participate in the political process. The data suggests that Mexicans are much less likely to vote when a major violent event occurs (such as an attack on a police station, assassination of a politician, or major gun battle), even more than when a municipality has a high rate of homicides. In short, notable violent events have more of an effect on Mexican voting rates than long term rates of violence in a community. I attribute this phenomenon primarily to visibility. When a major violent event occurs in a municipality, especially when carried out by a known organization such as a drug cartel, people are often shocked and stunned. Such brazen attacks, which have become commonplace in Mexico over recent years, are highly publicized by the media and often strike at the heart of municipalities. These violent events contrast sharply with the annual homicide rates of a given Mexican municipality. Though murders in a municipality are highly jarring and clearly depress voter turnout, they simply do not have the same visibility as a brazen violent attack. This is especially true in more populous areas, where voters may be unable to distinguish an increase in the rate of homicides but can clearly witness a significant violent event occurring in a town or locality. I believe that such visibility of violent events is the driving force behind the substantive drop in voting rates seen in my data.

Conclusion

The results of my research are clear, as violence increases in Mexican municipalities voter turnout falls. I also display that major decreases in voter participation rates are fueled by notable violent events caused by organized crime and drug cartels. My work has shown that Mexican citizens are highly aware of the violence in their communities, and consciously choose to forego exercising their political rights in favor of their own personal safety. This statistically significant data is pertinent in numerous municipalities where high levels of violence are common and helps to provide an explanation for lower voting rates in these areas. By examining both homicide rates and independent tallies of deaths and events, I have attempted to show that drug violence is the driving force behind the negative relationship seen in the data.

My findings additionally add to a growing body of literature on the relationship between violence and democracy. They provide updated data in agreement with previous research by authors like Trelles and Carreras, who have also looked at Mexican violence and election rates. However, my results also include new data sources and unique findings to further examine ideas about violence in democratic nations. Most notably, I shed light on the effect of event occurrences on voter participation, rather than simply homicide rates. The results of this new analysis help to clarify the forms of violence that voters react to and lead to more questions about how perceptions of violence influence decision making processes on an individual level.

Finally, my work highlights how *criminal* violence has different outcomes on voter participation than other forms of violence (i.e. religious violence, ethnic violence, political violence) and may provide an explanation as to why results in this area of study are not conclusive. The results of my work are in stark contrast to previous research by numerous scholars who have proposed that violence increases voter participation. I believe that my findings

indicate that transactional criminal violence pushes people away from the democratic process, which likely contrasts with other, more political and ideological, types of violence. Through my work and the work of others, it appears clear that the type of violence a democratic nation faces assists in determining what effect such violence has on voter participation.

No matter the form it takes, violence is never a positive influence on democracy. In Mexico, organized crime and drug cartels continue to take their toll on democratic institutions. From assassinations to mass killings, citizens are constantly threatened by illicit forces and pushed away from political participation. However, by understanding how violence affects Mexican democracy, policy makers are equipped with the tools they require to restore trust and security to their constituents.

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