Firearms and Politics: Examining the Growth of Shooting Ranges and Gun-Related Deaths in Brazil

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Abstract

This paper examines the relationship between ideological alignment with a pro-gun political leader and the number of new shooting ranges, as well as gun-related deaths. Using a two-way fixed effects model, we analyze data from Brazilian municipalities and find that those above the national vote share median for a pro-gun candidate running for presidency show an average increase of over seven times in new shooting ranges compared to baseline control units after the 2018 presidential election results announcement. Additionally, these municipalities show a 0.8 percentage point increase in the share of gun-related deaths but no significant change in gun-related suicides. Heterogeneity analysis indicates more pronounced effects in more populous municipalities with higher income and a higher percentage of the rural population - a critical electoral group - suggesting the role of communication channels. Mechanism analysis reveals that radio and TV broadcasters, internet providers, and greater agribusiness presence drive the effects. The study further explores presidential visits as a treatment, finding significant increases in new shooting ranges in visited municipalities after the leader's presence.

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1 Introduction

Political leaders who thrive on inflammatory rhetoric have recently emerged in various democracies. These politicians have also been appealing to identity politics (Enke, 2020; Gennaro and Ash, 2022) and often use populist discourse to convince their supporters to view political opponents as enemies (Guriev and Papaioannou, 2022). At the same time, the discussion about firearms availability to the population has also been very relevant, given the intensification of political conflicts in major democracies. Recent political conflicts include the invasion of the Capitol by Donald Trump's supporters in the US and, shortly after, the invasion of the Brazilian Congress, Presidential Palace, and Supreme Court by Jair Bolsonaro's supporters in Brazil.

Jair Bolsonaro frequently incited political polarization throughout his campaign and speeches during his term, with advocacy for violence and the deregulation of firearm control being integral parts of his rhetoric and actions (Estadão, 2020; DW, 2021). Moreover, Bolsonaro changed firearms access rules through a series of executive orders and promoted intensive media coverage on the topic of firearms. Meanwhile, Brazil saw a vertiginous growth in the number of gun licenses (Poder360, 2022). In this context, Brazilians have been experiencing increasing cases of politics-related violence (UOL, 2022b). This scenario leads us to question how violent political rhetoric influences gun ownership and firearms-related deaths.

This paper aims to estimate the effects of political alignment with Jair Bolsonaro on the number of new shooting ranges. We argue that since the increase in the number of firearms was primarily driven by sports shooters, a category that requires attendance at shooting ranges, their growth serves as a measure of public interest in firearms possession. To assess the prevalence of firearms, we also estimate the effects on gun-related suicides and other gun-related deaths. We exploit the announcement of election results after the second round and investigate the influence of the president's presence in municipalities on these outcomes.

Given Bolsonaro's history in military forces, his support for police-related matters during his time as a congressman, and his constant appeal to violent public security solutions, we could expect many of his political supporters to be pro-guns. Therefore, we use the vote share for Bolsonaro in the 2018 presidential election as a proxy for people's alignment with pro-gun rhetoric. In addition, the informational shock imposed by the announcement of the electoral victory of an openly pro-guns leader provides a framework in which we can apply a dynamic two-way fixed effect model following the specification proposed by Ajzenman et al. (2020) and Mariani et al. (2020).

We find that municipalities above the country median vote share for Bolsonaro display an average increase of 0.005 new shooting ranges after announcing the 2018 election results. In other words, five out of a thousand municipalities have a new shooting range in the treatment group. We also find that municipalities that are above this national median vote share display a 0.008 average increase in the share of gun-related deaths after the

prominent event, which implies a 0.8 p.p. increase in such deaths. This effect is more pronounced in the first observed quarters and tends to decrease towards the end of our observation window. Additionally, we observe more pronounced effects in the increase of shooting ranges and gun-related deaths in more populous municipalities, those with higher per capita income, and more rural areas. Regarding gun-related suicides, our findings indicate no discernible change, suggesting that while access to firearms may have risen, the actual number of households with firearms did not see a corresponding increase. Nonetheless, the absence of definitive data prevents us from confirming this with certainty.

We also explore mechanisms such as local media and internet presence, relations with agribusiness, and the presidential presence in municipalities. Overall, municipalities with more developed communication channels or access to social media appear to be driving the effects, suggesting that media plays a crucial role in spreading pro-gun rhetoric. It is also notable that municipalities with higher agricultural production entirely drive gun-related death results. Finally, contributing to the communication channel, we observe that municipalities experience an immediate increase in the number of new gun clubs after being visited by the President, indicating that the observed effects are less related to institutional mechanisms and more to informational ones.

Our work contributes to the literature field that explores the causal relationship between guns, violence, and deterrence. While some studies, such as Lott and Mustard (1997) and Lott (2013) suggest that carrying a gun can deter physical and property crime with no effect on incidental deaths, others, like Duggan (2001), Ayres and Donohue (2002) and Braga et al. (2021) argue that increased gun ownership may lead to more crime. Review analyses, however, indicate that the effect of guns on crime is inconclusive (Kleck, 2015) due to confounding factors and challenges inherent to their ecological design, execution and the need for more robustness of findings (Santaella-Tenorio et al., 2016).

Our work also builds on the field of political leaders' influence on their followers' behavior via speech and exemplary behavior (e.g., Ajzenman et al. (2020); Masera et al. (2020); Bassi and Rasul (2017); d'Adda et al. (2017); Ajzenman (2021). We contribute to this literature by focusing on inflammatory rhetoric and pro-gun ideology as the channel of such influence. Besides the rhetorical path, we contribute to the research field of public security policy effects on violence outcomes relating to works like Raphael and Winter-Ebmer (2001); Lochner and Moretti (2004); Di Tella and Schargrodsky (2004); Novaes (2020); Arvate and Souza (2016).

Finally, our research contributes to studies that explore firearms-related violence in Latin America like Soares and Naritomi (2010) and Vilalta (2020), and illicit firearms trading (e.g., Dube et al. (2013) and Cook et al. (2009)), given the possible spillover effects that the analyzed gun policy could have on organized crime, militias, and cartels.

The findings of this paper can help policymakers in Brazil and other countries better understand the impact of political discourse on electors' actions. By analyzing data on electoral results and crimes, we can provide valuable insights into the underlying factors driving gun violence in Brazil, which can inform evidence-based policies to reduce

gun-related deaths. Additionally, the findings may support the development of educational campaigns and public awareness programs that aim to counteract the negative effects of pro-gun speech and promote responsible firearm ownership. Overall, the paper can contribute to the ongoing policy debates on gun control and regulation, which are critical to reducing the number of deaths and injuries caused by firearms.

The rest of the text is structured as follows. Section 2 introduces the political situation and the changes in gun laws in Brazil in the past years. Section 3 describes the data used in the analysis. Section 4 displays descriptive statistics on the explored outcomes, treatment variables heterogeneity, and mechanisms determinant variables. Section 5 presents and describes the specifications used to assess treatment effects. Section 6 presents the results, Section 7 explores heterogeneities, and Section 8 presents possible mechanisms that could be driving effects. Finally, section 9 shows our final remarks.

2 Context

2.1 The Big Picture

In the period ranging from December 2018 until the end of 2022, Brazilian society experienced an increase of 592% in the number of people registered as firearms collectors, sports shooters, and hunters (*CACs - Colecionadores, Atiradores Desportivos e Caçadores*) (DW, 2023). Roughly in the same period, the arsenal held by such citizens almost tripled (Estadão, 2022). This growth occurred after former president Jair Bolsonaro issued more than 40 presidential executive orders seeking to loosen the firearms restrictions imposed on the population (Senado, 2023). Such acts constituted one of his campaign promises.

Along with the legal measures, political and ideological aspects have also played an important role. For example, in a leaked video of a meeting with secretaries, Jair Bolsonaro stated his intention to arm the whole population (Estado', 2020). In many interviews and speeches, he repeatedly said one of his mottoes: "armed people will never be enslaved". The president also incited political violence in his speeches, namely when he suggested gunning down his opposition in Acre (a state of Brazil) (Abril, 2022) and the countless times he positively interacted with children wearing military suits and displaying toy guns (de Fato, 2021).

With high murder rates, poverty, an elevated inequality index, and dominance of organized crime (Instituto de Pesquisa Econômica Aplicada (IPEA), 2019), gun ownership is an open-to-dispute subject in Brazil. Even in developed countries, it is unclear whether more guns improve or deteriorate public security outcomes (Santaella-Tenorio et al., 2016). Moreover, most of the Brazilian population does not believe they would be safer if all citizens were armed. However, right-wing Bolsonaro-supporter political groups have incorporated gun ownership as political identity (Deutsche Welle, 2022).

Ultimately, at the end of Bolsonaro's term, the number of firearms held by civilians overcame the number of firearms in possession of law enforcement agents (Época Negócios,

2019). Moreover, many gun-involving incidents (whether related or not to politics) have taken place in the media from 2019 to 2022 and also in the following years.[1]

2.2 The Brazilian Election Process

Brazil uses an electronic voting system widely recognized for its effectiveness and transparency. Every four years, if no presidential candidate wins a majority in the first round, a second round of voting is held between the top two candidates. This process ensures that the elected president has a broad mandate.

An important characteristic of the electoral process is that after the election results are announced in the last week of October if there is a second round, the elected leaders must wait about two months before taking office in the first week of January. During this period, the president-elect has no power to make institutional decisions, but various political agreements, ministries, and secretariats form. These events usually receive extensive media coverage, giving the discourse of the newly elected president significant influence.

With 55.13% of the vote in the second round of the 2018 elections, Jair Bolsonaro emerged victorious (G1, 2018). A sizable section of the electorate responded favorably to his campaign's heavy emphasis on pro-gun rhetoric and pledges to loosen gun ownership laws. This support base was critical to his election and shaped his policies moving forward, such as the multiple executive orders that deregulated the possession of firearms.

2.3 The Changes in Firearms Laws

Since 2004, the rules enforced in Brazil were enacted by the 2003 *Estatuto do Desarmamento* (ED).[2] Such laws promoted national campaigns encouraging the voluntary surrender of more than 700 thousand guns from 2004 to 2018 (BBC, 2018). After the ED issuing, the country went through a deceleration in murder rates, from 5.5% to a 1% yearly growth (Instituto de Pesquisa Econômica Aplicada (IPEA), 2019). It is worth mentioning that before 2003, the population could acquire firearms without much hassle in department stores. The only constraint is that the buyer should be 21 or older to obtain a gun carry license (País, 2017). To impose further restrictions on the previously mentioned scenario, the 2003 ED established new rules for gun ownership. Individuals should: 1) Be 25 or older; 2) Have a legal occupation and fixed residency; 3) Prove the technical and psychological ability to handle firearms; 4) Have a clean criminal record; 5) Prove the real need to possess a gun through a declaration. Such rules regulated in-home ownership. Carrying a gun in public spaces would only be legal for law enforcers and a few classes of public agents (Senado, 2023).

[1] We could cite the Marcelo Arruda from Foz do Iguaçu (G1, 2022), the pool game slaughter in Mato Grosso (G1-MT, 2023), the Isabela Rosa from Cuiabá (BBC, 2020), and the Suzano school massacre (Folha, 2019) as the most prominent cases.

[2] The "Unarming Statute" is a set of laws regulating trading, registering, and possessing guns and ammunition.

The government promoted a referendum in 2005 to consult the population on whether the commerce of firearms in Brazil should be criminalized. Through this referendum, contrary to the public motion that had led to the 2003 ED, voters chose to keep firearms commerce legal. The pro-guns political forces organized at the time became a congressional caucus commonly known as *Bancada da Bala* (the "Bullet Caucus"), a Bolsonaro supporter group of congressmen that to this day has a great influence on national politics, law enforcement, and gun companies (Exame, 2018; Abril, 2019).

Only two weeks after taking office in 2019, Bolsonaro began issuing executive orders related to firearms, introducing significant policy changes (Atual, 2021). However, the orders that received the most media attention and had the most substantial impact on gun ownership rules were those that altered firearms license access rules and increased the amount and lethality of the guns and ammunition that could be acquired.

The January 15th executive order extended the duration of a gun ownership license from five to ten years and also eliminated the proof-of-effective-need demand from the law. Only a declaration of need would suffice to own a gun from then on. The May 7th executive order was the most controversial one, allowing more than 20 professional categories (such as lawyers, journalists, truck drivers, and many others) to carry firearms and increasing the shooting power limit by four times the shooting power limit of weapons. The June 25th executive order allowed sports shooters to own up to 60 firearms - instead of the previous 16 - 30 of which could be of restricted type (high caliber guns destined for military use only before the executive order), 180 thousand ammunition rounds, and 20 kilograms of black powder for the production of untraceable ammunition. This executive order also allowed hunters to own 30 firearms - instead of the previous 12 - 15 of which could be of a restricted type and 20 kilograms of black powder. Finally, from June 25th, collectors were allowed to own five guns of each category, without restrictions on the number of categories owned (BBC, 2019).

One new condition imposed was the need for shooters to affiliate with a shooting range. In parallel, Brazil saw an increase in the number of such establishments of about 100% (UOL, 2022a). In addition, it is noteworthy that former president Michel Temer had emitted in March 2017 a federal regulation that allowed shooters to transport one assembled and loaded weapon on their route to a shooting range under the allegation of protecting the transported arsenal (de Formação e Capacitação do Exército Brasileiro , DFPC). With his executive orders, Bolsonaro allowed all transported weapons to be assembled and loaded. In effect, the combination of such regulations created a loophole in legislation that allowed civilians to carry firearms publicly without legal consequences.

Many political parties filed petitions to overturn Bolsonaro's orders via the Supreme Court. Nevertheless, when the Supreme Court started judging the matters, Bolsonaro had already revoked his disputed orders and issued similar ones shortly after(Globo, 2019).

2.4 The Management of Firearms Data

It is important to mention that in Brazil, there are two different data systems to control firearms, SIGMA (*Sistema de Gerenciamento Militar de Armas*) and SINARM (*Sistema Nacional de Armas*). The army manages SIGMA, which gathers registers for shooting ranges, hunters, sports shooters, gun collectors (CACs), and military forces firearms. Alternatively, the Federal Police manages SINARM, which gathers home possession licenses for self-defense and carry licenses for certain public agents and civil police officers. Ideally, people seeking self-defense should undergo the Federal Police process and register on SINARM.

Bolsonaro's regulations did not change much about the bureaucratic process of obtaining firearms, except for the duration of the license and the removal of the proof-of-effective-need, which only affected the Federal Police process. However, obtaining a gun as a CAC via the Army process became more attractive because of the large number of firearms allowed and the ability to produce homemade ammunition. In addition, CACs could exploit the ability to carry firearms through the transportation-carry loophole previously mentioned, misusing their license to promote self-defense. In the meantime, Brazilian society experienced a strong increase in the number of new CAC licenses and the relative stability of new licenses for personal defense. Figure 1 shows the yearly number of new firearms licenses registered on SIGMA and SINARM. It is clear that while the number of registrations specifically for personal defense in SINARM remains relatively constant, the number of CAC registrations is growing exponentially.

In effect, Bolsonaro promoted media highlights on gun ownership with his orders. Moreover, because of his legal trial and error process of issuing and revoking regulations, newspapers, and television broadcasters constantly addressed the firearms agenda. Figure 27 shows the effects of such highlight through Google Trends results for "*decreto armas*" (firearms executive orders) in the period ranging from January 1st, 2019 to December 31st, 2019. The spikes coincide with the issuing of the three prominent orders previously mentioned.

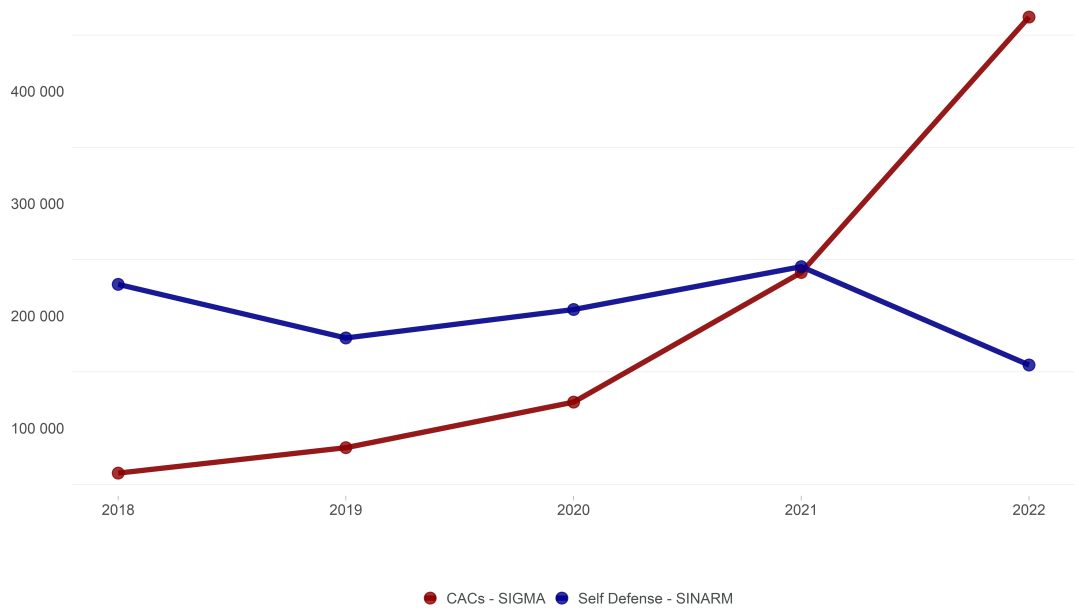
3 Data

Shooting ranges. Our main data source is the administrative data on the universe of firms provided by the Federal Revenue Service (*Receita Federal*).[3] It includes the information on firms such as the trade name, address, opening date, registration status, and, when available, the closure date of the establishment monthly. It also includes the sector code, known as CNAE (*Classificação Nacional de Atividades Econômicas*). We restrict our initial sample to firms with the CNAE code for registering social, sports, and similar clubs.[4]

[3] Data available in https://dados.gov.br/dados/conjuntos-dados/cadastro-nacional-da-pessoa-juridica—cnpj

[4] Clubs are identified as CNAE codes 9312-3/00.

Figure 1: Number of firearms licenses registered for personal defense and CACs from 2018 to 2022



Notes: This figure shows the annual cumulative number of firearm registrations under the SIGMA system, in red, and SINARM, in blue, using data from 2018 to 2022 obtained from the Brazilian Army and Federal Police via the Access to Information Law *(LAI)*

We identify the number of shooting ranges using firms' names. To do that, we access the open data on accredited shooting instructors available on the Federal Police.[5] These documents list all instructors accredited by the Federal Police as well as registered establishments for technical capability assessments in each Brazilian state. These establishments include training schools for security guards, police battalions, and shooting ranges, which are the focus of our analysis. We identify the 15 most frequently occurring words in the names of these establishments, filter our club's sample to those with keywords for shooting ranges in their commercial names, and exclude keywords related to other kinds of businesses such as martial arts, soccer, and other kinds of non-firearms-related clubs.[6]

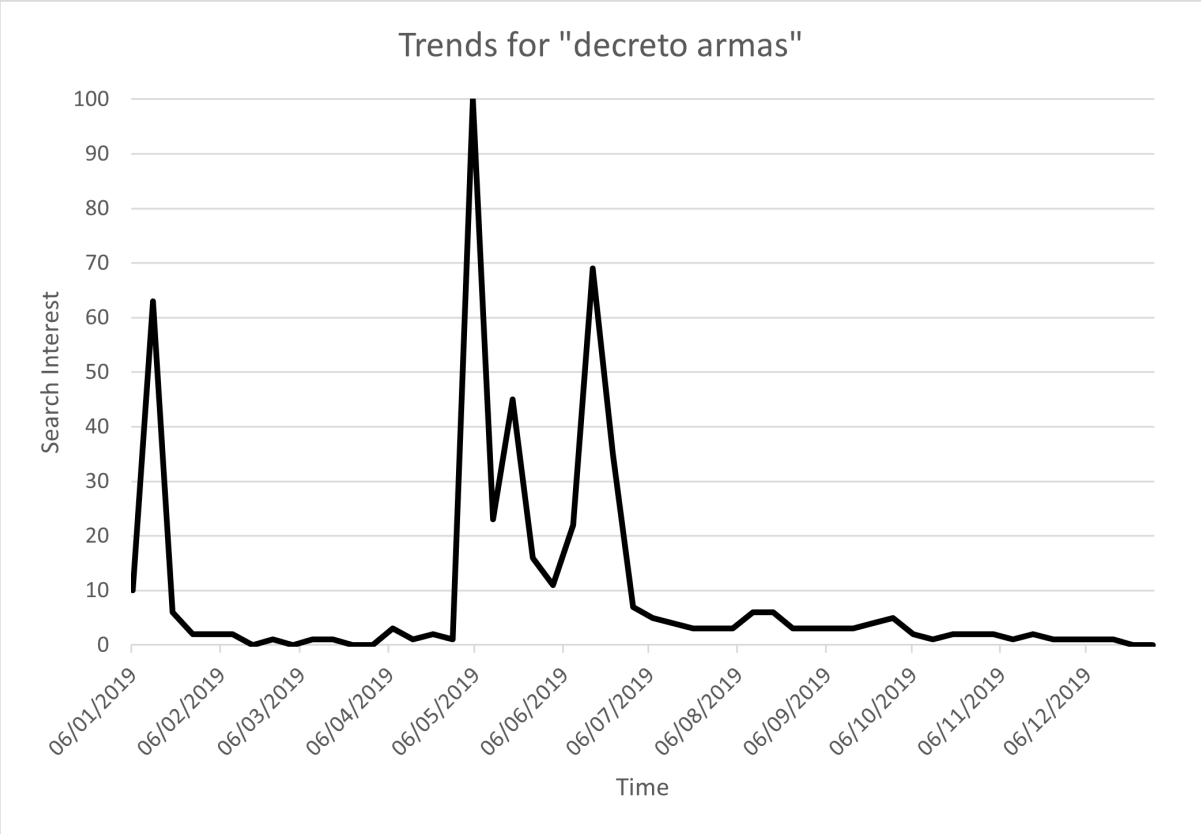
By mapping the addresses of the establishments, we identified the number of shooting ranges for each municipality. Utilizing the registration status and opening dates, we calculated the number of active shooting ranges at the municipality-month level.

Firearm-Related Deaths. The data on firearm-related deaths we obtain from the open data of the Brazilian Unified Health System, *DATA-SUS*. Using the basic cause of death codes, we identify firearm-related deaths and build a panel at the municipality-month level covering the period from 2014 to 2022. This period includes the COVID-19

[5] Data available in https://www.gov.br/pf/pt-br/assuntos/armas/instrutores-de-armamento-e-tiro/credenciados/

[6] We identify shooting ranges names through the keywords: *tiro, caca, estande, arma, seguranca, colt, militar, fuzil, atira, tatic, elite, hunt, shot, shoot, gun.* We filter out the terms: *policia, judo, futebol, educacao, karate, marciais, box, carma, shogun.*

Figure 2: Google searches for the term: "*decreto armas*" in the first year of Bolsonaro's term



Notes: This figure shows the Google Trends results for the term "decreto armas" from the first week of January 2019 to the first week of December 2019. The results are displayed on a scale of relative interest with respect to the period when the highest spike in searches occurred.

pandemic, which could unevenly impact the absolute number of deaths between treated and untreated units. To mitigate this issue, we analyze death outcomes as shares of total deaths from external causes. External causes of death are defined as accidents and violence (homicides and suicides) resulting from accidental and intentional non-natural injuries, respectively.[7]

2018 Elections Data from TSE. We obtain the data on the vote share for Jair Bolsonaro in the first round of the 2018 presidential elections from the Brazilian Superior Electoral Court (TSE). This database contains the total votes for each candidate at the municipal level. We use this vote share information to define our treatment variable, which in the main specification is a binary variable equal to one if a certain municipality is above the country median of vote share for Bolsonaro and zero otherwise. Additionally, we explore alternative definitions of this treatment variable, such as using only the top and bottom quartiles instead of the median, and considering the state median instead of the country median.

Presidential Visits. We also explore a specification using the president's visits to municipalities as a treatment. Using data available on the Presidential Library portal,

[7] Data available in https://www.gov.br/mj/pt-br/assuntos/sua-seguranca/seguranca-publica/mortes-por-causas-externas-qualificacao-dos-registros-inespecificos.pdf.

we build a database of President Jair Bolsonaro's travels during his term from 2019 to 2022.[8] This database includes detailed information on the date, time, municipality, and event attended by the president during his domestic travels. We use these visits to define another treatment variable, which is a dummy equal to one if Bolsonaro has visited a certain municipality within a specific period and zero otherwise. This specification helps us explore effects' mechanisms through the communication and political belonging channels, as the president's presence in a municipality could intensify or provoke behaviors in the population more inclined to follow his rhetoric.

2010 Census. We use data from the 2010 Census, provided by the Brazilian Institute of Geography and Statistics (IBGE), to gather details on population and the rurality index of Brazilian municipalities. This data enable us to perform heterogeneity analyses aimed at examining whether the effects we measure correlate with the size of the population and the prevalence of rural characteristics.

2006 Agro Census. We also utilize data from the 2006 Agro Census, provided by the Brazilian Institute of Geography and Statistics (IBGE), to obtain the value of rural production in municipalities. This information is used in heterogeneity analyses to determine if the observed effects are stronger in areas with higher rural production and to establish a connection between agribusiness—a sector known to align with Bolsonaro—and the penetration of the president's pro-gun rhetoric.

Munic 2018. We also draw on data from the 2018 Brazilian Municipalities Survey (*Perfil dos Municípios Brasileiros*), which is conducted annually, to gather information on the presence of local radio and TV broadcasters as well as internet providers in the municipalities. This dataset enables us to perform mechanisms analyses based on media prevalence to assess how effectively the President's speech is disseminated among the population.

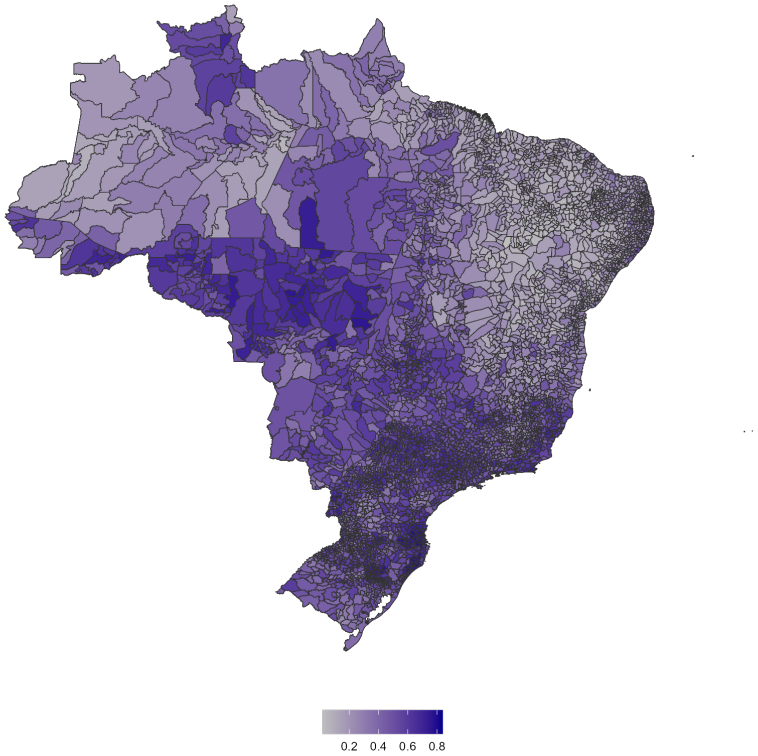
4 Descriptive Statistics

We utilize the vote share for Jair Bolsonaro as a proxy for political alignment with his rhetoric. This variable serves as a key treatment variable in our analysis and Figure 3 illustrates its spatial distribution across municipalities, revealing a significant spatial correlation. Higher vote shares are concentrated in the central-southern regions, while lower values are observed in the northeastern and northern regions. To account for this geographical variation, we define the treatment variable using both the country-level and state-level medians. This approach preserves the variability of the treatment across municipalities, ensuring that our analysis is not reduced to a simple "north versus south" comparison.

We also map the spatial distribution of President Bolsonaro's visits to Brazilian municipalities during his four-year term (Figure 4). These visits serve as a treatment

[8] Data available at http://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/Bolsonaro.

Figure 3: Political alignment with Bolsonaro across Brazilian municipalities

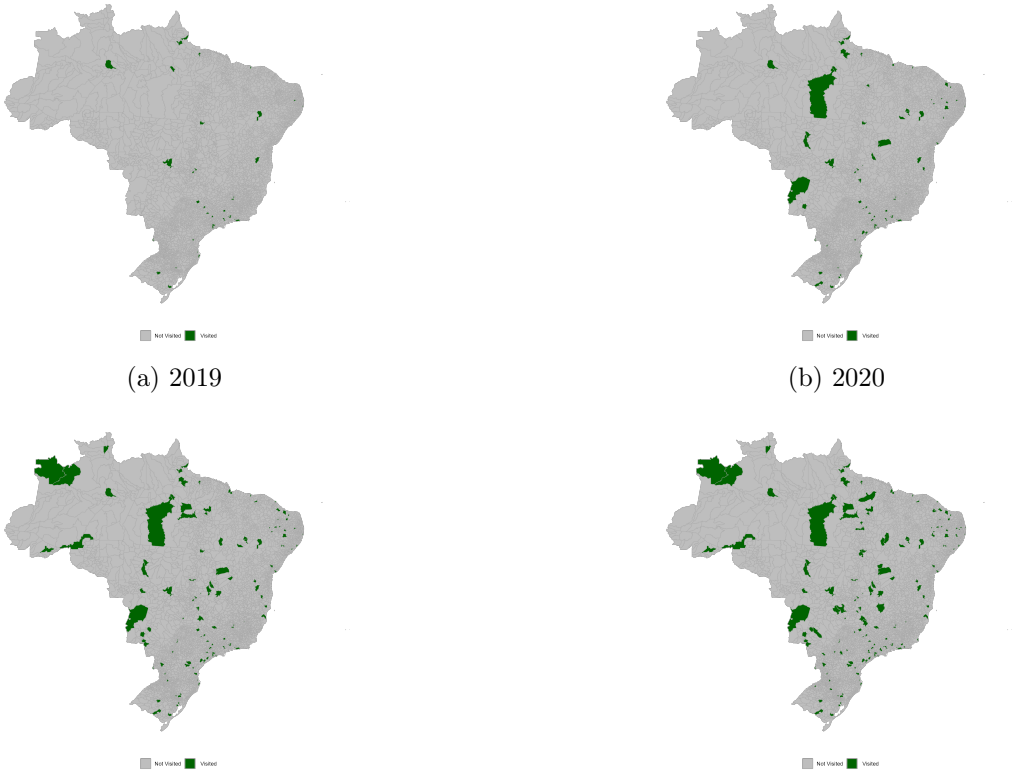


Notes: This figure shows a map of Brazilian municipalities to illustrate the spatial variation of political alignment with Bolsonaro, using administrative data from TSE from 2018. Political alignment is measured by the vote share in Bolsonaro in the first turn 2018 Brazilian presidential election. A darker shade means a higher political alignment.

variable in an auxiliary specification used to explore the mechanisms driving the observed effects. The visits appear to be roughly evenly distributed across Brazil, and visually, there seems to be no selection bias in the order or regions of the visited municipalities. In our specification that uses visits as a treatment, we only consider municipalities visited once. To account for the heterogeneity of the treatment effect over time, we employ the estimator proposed by Sun and Abraham (2021).

Next, we present the raw plot of our main outcomes averaged across treatment and control groups. Figure 5a illustrates the average number of new shooting ranges from the first quarter of 2017 to the last quarter of 2022 where a dashed line represents the period correspondent with the announcement of 2018 elections. Municipalities with a vote share for Bolsonaro above the national median show a higher number of new shooting ranges per quarter. The trends over time are similar before the election results and in the fourth quarter of 2018. Notably, there is a seasonal effect in the creation of new shooting ranges, with peaks in the fourth quarter of each year, making it challenging to visualize the overall trend of this variable. To address this, we also present the 12-month moving average of new shooting ranges in Figure 5b, which provides a clearer visualization of the pre-treatment parallel trend. Similarly, for the share of gun-related deaths, we show both the raw plots for the variable by quarters and the 12-month moving average. Figure 6b reveals parallel

Figure 4: Presidential travels to municipalities from 2019 to 2022



(a) 2019 (b) 2020

(c) 2021 (d) 2022

Notes: This figure shows a map of Brazilian municipalities that received a visit from President Bolsonaro, using data from the Presidential Library portal from 2019 to 2022. In green, we highlight the municipalities that were visited until each year.

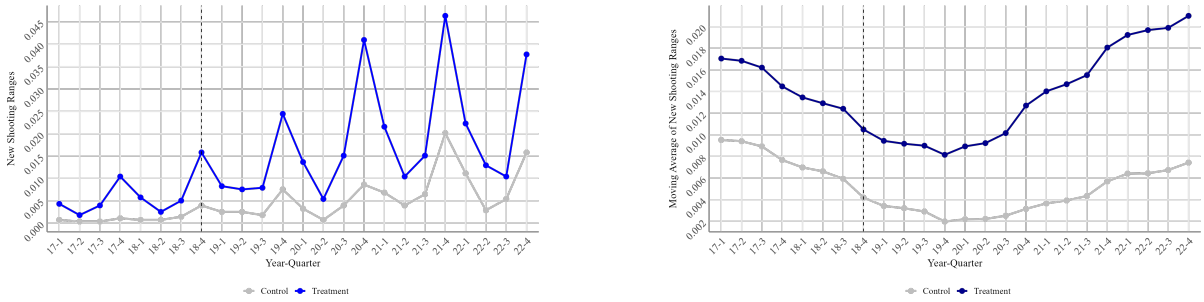
pre-treatment trends, and after the fourth quarter of 2018, we observe a slight divergence in trends between the treated and control groups, with pro-Bolsonaro municipalities exhibiting an increase. Because of this seasonal peak behavior, all regressions in the paper are conducted using the 12-month moving average version of the outcomes to provide more consistent and interpretable results.

Lastly, we present two tables: Table 1 with general descriptive statistics for the treatment variable, main outcomes, and heterogeneity and mechanisms-related variables, and Table 2, which presents the difference in means between treated and control groups under our main specification for these same variables.

In Table 1 we can see that the mean vote share for Bolsonaro stands at 38.7%, but with significant variability across municipalities, ranging from 1.94% to 83.9%. This significant variation is essential for our analysis, as it allows us to explore various definitions of the treatment variable based on its country median, top and bottom quartiles and also state median. The average quarterly number of new shooting ranges is minimal (0.00349), yet the maximum of 8 indicates that some municipalities are significantly more active in establishing these facilities.

The data on gun-related outcomes reveal that the mean share of gun-related deaths (0.152) is substantially higher than that of gun-related suicides (0.02), highlighting that

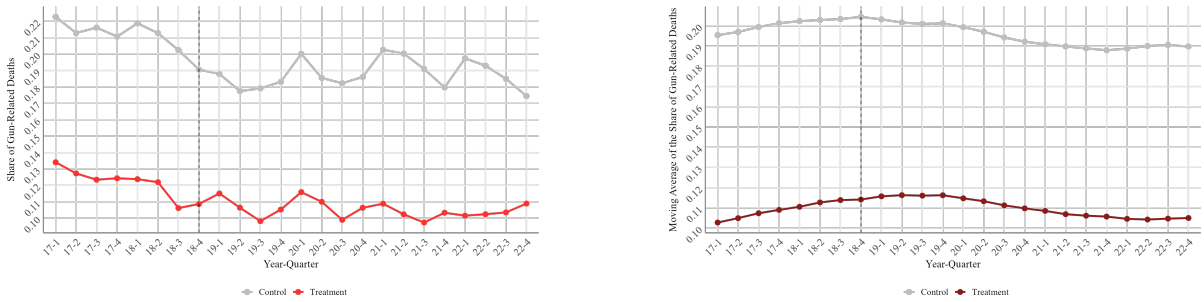
Figure 5: Number of new shooting ranges



(a) Average (b) Average (moving average: 12 months)

Notes: This plot reports the data for the average number of new shooting ranges in municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control), using administrative data from the Federal Revenue Service from 2017 to 2022. Panel (a) shows the raw number of new shooting ranges, and Panel (b) shows the moving average considering the previous 12 months. The period covers the window [-7,+16] around the election announcement quarter.

Figure 6: Share of gun-related deaths



(a) Average (b) Average (moving average: 12 months)

Notes: This plot reports the data for the share of gun-related deaths in municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control), using administrative data from DATA-SUS from 2017 to 2022. Panel (a) shows the raw share, and Panel (b) shows the moving average considering the previous 12 months. The period covers the window [-7,+16] around the election announcement quarter.

gun violence, in general, is a significant issue in many municipalities. Additionally, the presence of media infrastructure, with 55% of municipalities having radio broadcasters and 85% having TV broadcasters, alongside 69.4% having internet providers, underscores the potential role of media in shaping public opinion and behavior related to gun ownership and usage.

In Table 2 we notice a stark contrast in political alignment, with treated municipalities showing a significantly higher vote share for Bolsonaro (55.3%) compared to controls (22.2%). This political divide is essential for understanding the differential impacts of political rhetoric on gun-related outcomes. Treated municipalities also exhibit a higher average number of new shooting ranges (0.00532) compared to controls (0.00167), and a lower share of gun-related deaths (0.112 vs. 0.191).

Further differences are observed in media, population size and rural production values,

Table 1: Summary statistics

	Mean	SD	Median	Min	Max
Vote Share for Bolsonaro (%)	38.7	19	40.6	1.94	83.9
New Shooting Ranges (Quarterly)	0.00349	0.154	0	-24	8
Share of Gun-Related Suicides (%)	0.02	0.125	0	0	1
Share of Gun-Related Deaths (%)	0.152	0.269	0	0	1
Radio Broadcaster Presence (%)	55	49.7	100	0	100
TV Broadcaster Presence (%)	85	35.7	100	0	100
Internet Provider Presence (%)	69.4	46.1	100	0	100
Evangelical Religion (%)	17.5	9.48	16.2	0.648	83.8
Rurality Prevalence (%)	35.9	21.9	35.1	0	95.8
Population	34558.63	204129.6	11036	805	11253503
Value of Rural Production $\div 10^3$	29621.18	51281.27	13905.5	16	907524

Notes: This table reports summary statistics at the municipality level. All variables are described in the text. *Share of Gun-Related Suicide* is defined as the proportion of suicides executed with a gun in the total of suicides. *Share of Gun-Related Death* is defined as the proportion of gun-related deaths in external causes deaths. *Radio/TV/Internet Broadcaster Presence* is the average of a dummy variable equals one when there is a Radio/TV/Internet broadcaster in the municipality. *Evangelical Religion* is defined as the mean of a binary variable, which equals one if the individual declares their religion as Protestant. *Rurality Prevalence* is the proportion of rural municipalities. *Value of Rural Production* represents the total production value of rural land, measured in thousands of *reais* (R$). Observations: 5,565.

with treated municipalities having higher percentages of radio and TV broadcasters, as well as a higher average population and rural production which could influence the dissemination and reception of political messages, potentially impacting the observed outcomes

Despite the level differences between treated and control units, our Two-Way Fixed Effects (TWFE) strategy effectively accounts for these disparities by including municipality and period fixed effects. This approach ensures that our analysis focuses on differences in trends rather than levels. Additionally, by controlling for pre-event dummies, we check for parallel trends, a crucial assumption in causal inference, helping to verify that the observed effects are attributable to the treatment rather than pre-existing differences.

5 Empirical Strategy

Our empirical approach employs two distinct specifications designed to assess the impacts of (i) the interaction between the election of a pro-gun leader and the population's alignment with pro-gun rhetoric, and (ii) the role of political discourse through the presence of a political leader in shaping public interest in firearms (proxied by the number of shooting ranges) and firearm-related deaths. To achieve this, we employ two event study formulations. The first is a standard two-way fixed effects model that captures the

Table 2: Main specification treatment statistics

	Control Mean	Treated Mean	Difference ($\alpha = 5\%$)
Vote Share for Bolsonaro (%)	22.2	55.3	33.1*
New Shooting Ranges (Quarterly)	0.00167	0.00532	0.00366*
Share of Gun-Related Suicides (%)	0.0148	0.0251	0.0103*
Share of Gun-Related Deaths (%)	0.191	0.112	-0.0787*
Radio Broadcaster Presence (%)	50.4	59.4	9.01*
TV Broadcaster Presence (%)	82.4	87.7	5.39*
Internet Provider Presence (%)	70.7	68.1	-2.58*
Evangelical Religion (%)	13.6	21.4	7.81*
Rurality Prevalence (%)	44.8	26.9	-17.9*
Population	21400	47800	26400*
Value of Rural Production $\div 10^3$	16700	42600	25900*
Observations	2783	2782	-

Notes: This table reports summary statistics at the municipality level. We compare municipalities with an above-median vote share in Bolsonaro (treated) versus municipalities with a below-median vote share in Bolsonaro (control). We show the difference significance at $\alpha = 5\%$ using a star. All variables are described in the text. *Share of Gun-Related Suicide* is defined as the proportion of suicides executed with a gun in the total of suicides. *Share of Gun-Related Death* is defined as the proportion of gun-related deaths in external causes deaths. *Radio/TV/Internet Broadcaster Presence* is the average of a dummy variable equals one when there is a Radio/TV/Internet broadcaster in the municipality. *Evangelical Religion* is defined as the mean of a binary variable, which equals one if the individual declares their religion as Protestant. *Rurality Prevalence* is the proportion of rural municipalities. *Value of Rural Production* represents the total production value of rural land, measured in thousands of *reais* (R$). Observations: 5,565.

time-homogeneous effects of political alignment, while the second uses the formulation developed by Sun and Abraham (2021) to capture the time-heterogeneous effects of a presidential visit to a specific municipality. The event study approach is particularly relevant in these cases, not only because it allows us to verify the absence of pre-treatment trends in the dependent variables but also because it enables us to observe the dynamic behavior of these variables over the analysis period.

5.1 Political Alignment Treatment

We estimate a dynamic two-way fixed effect specification to capture the effects of political alignment with pro-gun rhetoric on new shooting ranges and gun-related deaths. Specifically, we estimate the following equation:

$$Y_{md} = \sum_{\tau=-k}^{K} \beta_\tau \cdot [\text{PolAlig}_m \cdot (\text{Periods After Event} = \tau)] + \phi_d + \rho_m + \varepsilon_{md}, \qquad (1)$$

where Y_{md} represents the desired outcome (share of gun-related deaths/suicides, number new shooting ranges) on municipality m, in period d. "Periods After Event $= \tau$" is

an indicator variable equal to one τ periods away from the announcement of the 2018 presidential election results, ϕ_d and ρ_m are the period and municipality fixed-effects, respectively. We omit the β_τ when $\tau = -1$ to obtain results relative to the period immediately before the election results announcement. Following Ajzenman et al. (2020), PolAlig_m equals one if the vote share for Bolsonaro is above the country's median in administrative unit m.

With this specification, we intend to investigate if the information of the election of a pro-gun leader had a different impact on his supporters and critics. In the absence of this result, we assume Bolsonaro's supporters and critics' administrative units would have followed the same pre-treatment trend on chosen outcomes.

Under the identification assumption, that is in the absence of treatment, our coefficient of interest, β_τ, identifies the outcomes differences between treated and control municipalities (regions more and less aligned with Bolsonaro's rhetoric, respectively) after the announcement of the 2018 election results .

5.2 Presidential Presence Treatment

In our main specification, we use as the treatment variable the interaction between political alignment with Bolsonaro's rhetoric (proxied by whether the municipality's vote share is above or below the national median) and the informational shock generated by the election of a pro-gun political leader. However, as described in Section 2, shortly after taking office, Bolsonaro signed several decrees that eased access to firearms. Thus, using only the main specification, it becomes difficult to discern whether the observed effects are due to an informational channel (more related to the election results announcement and the dissemination of presidential rhetoric) or an institutional channel associated with the legal implications of the decrees.

We indeed explore other mechanisms, such as the prevalence of media, still using the main specification. However, we still encounter the problem of not being able to effectively separate the institutional channel from the communication channel due to the temporal proximity of the election result announcement and the enactment of presidential gun-related executive orders.

Therefore, in addition to the main analysis, we also conduct a mechanism analysis by adapting our main specification to analyze the effect of Bolsonaro's visits to municipalities on the same outcomes mentioned earlier.

In this specification, we use municipalities that have not yet been treated as the control group for those already visited, to mitigate potential selection effects that could be associated with the choice of municipalities to be visited.

Specifically, we use the following specification:

$$Y_{md} = \sum_{\tau=-k}^{K} \beta_\tau \cdot D_{m,t} + \phi_d + \rho_m + \varepsilon_{md}, \tag{2}$$

where $D_{m,t}$ equals one for municipality-month observations that are up to a month away from a presidential visit. The rest of the variables are analogous to those in equation (1).

Under our identification hypothesis, we assume that municipalities visited and not yet visited by the president would have similar outcome trajectories. Thus, our parameters of interest are the β coefficients, which capture the effect of the president's presence in municipality m, τ months after the visit. Additionally, we include control dummies for the periods before the visit, except for the one immediately preceding it, which serves as the reference period.

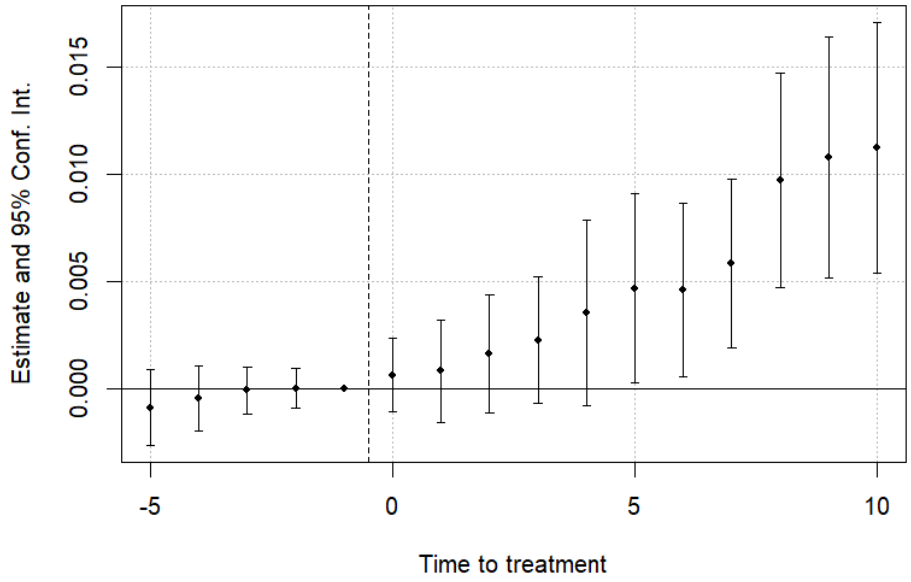
The underlying cause behind this choice of specification is that, while in the main specification we observe pre- and post-effects of the president taking office, in this auxiliary exercise, we have all visits to municipalities distributed over the four years of the president's term. Thus, under the identification hypothesis, treated and not yet treated municipalities would differ only in having received the president's visit. Therefore, if we observe positive effects on outcomes after the president's visit to the municipality, we can attribute the result to the communication channel with greater certainty since these visits are not correlated with the enactment of the executive orders.

6 Main Results

We present our main results in Figures 7 and 8. The dashed line represents the period corresponding to the announcement of the 2018 presidential election results. The horizontal axis shows the number of quarters relative to this event, while the vertical axis displays the estimated effect of political alignment with Bolsonaro on the dependent variable. We also include in the appendix the point estimate Diff-in-Diff tables for the average effects over the period (Table 3). Despite being small in absolute value, when considering the average for control units at baseline (before the announcement of election results), the relative effects are significant and noteworthy. We find that municipalities which are above the country median vote share for Bolsonaro display an average increase of 0.005 new shooting ranges after the announcement of the 2018 election results. This means that in the treatment group, five among a thousand municipalities have a new shooting range. This effect is significant at the 0.1% level and represents an increase of over seven times in the number of new shooting ranges with respect to the baseline control units' average. We also find that municipalities which are above this national median vote share display an 0.008, 1% significant, average increase in the share of gun-related deaths after the prominent event which implies in a 0.8 p.p. increase in such deaths.

There are no anticipation effects, as the estimated values before the election results

Figure 7: Effect of political alignment on new shooting ranges



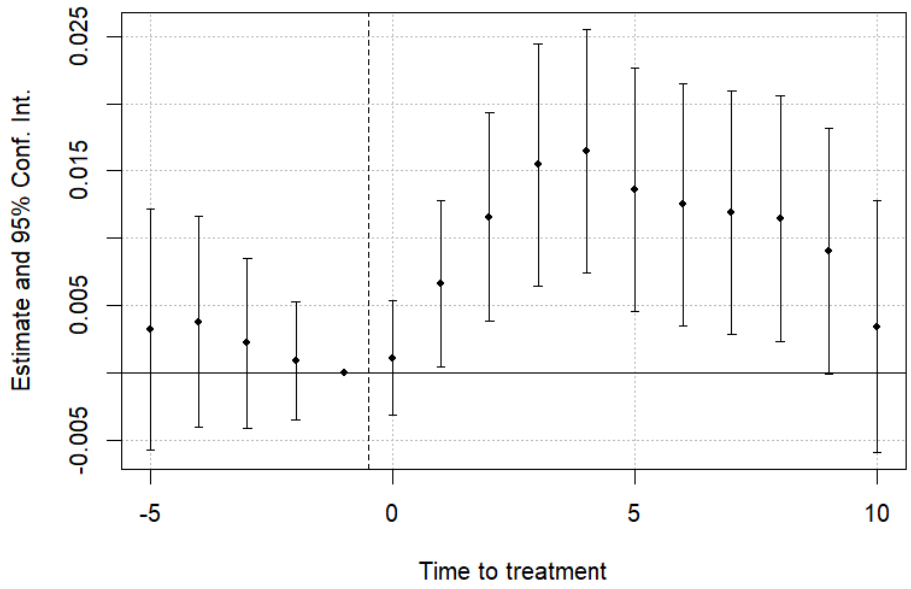
Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

announcement are statistically indistinguishable from zero. Furthermore, both for shooting ranges and gun-related deaths, a rising trend is observed immediately following the prominent event. Specifically, for shooting ranges, the effect intensifies over time, showing a continuous increase until the end of the observation window. In the case of gun-related deaths, the effects are more pronounced shortly after the event, peaking in the fourth quarter and then decreasing but remaining marginally positive until the ninth quarter.

Notice that given the specification adopted in Equation (1), we only identify a relative increase in the dependent variable in pro-Bolsonaro municipalities compared to less aligned municipalities. However, Figures 5 and 6 in Section 4 indicate that there is indeed a raw value increase of the outcomes in treated municipalities. The increase in the number of shooting ranges occurs towards the end of the time window, whereas the rise in gun-related deaths happens in the shorter term, in the first periods following the event.

Another result of interest in the firearms literature is gun-related suicides. Duggan (2001) argues that with an increase in the availability of firearms among the population, there is an expected rise in the share of suicides committed using firearms. Thus, if more people have access to firearms, we would expect to see an increase in the share of gun-related suicides. However, analyzing Figure 9 and the average effects in the third column of Appendix A Table 3 we note that this is not observed in practice. The share of gun-related suicides remains statistically indistinguishable from zero throughout our

Figure 8: Effect of political alignment on the share of gun-related deaths



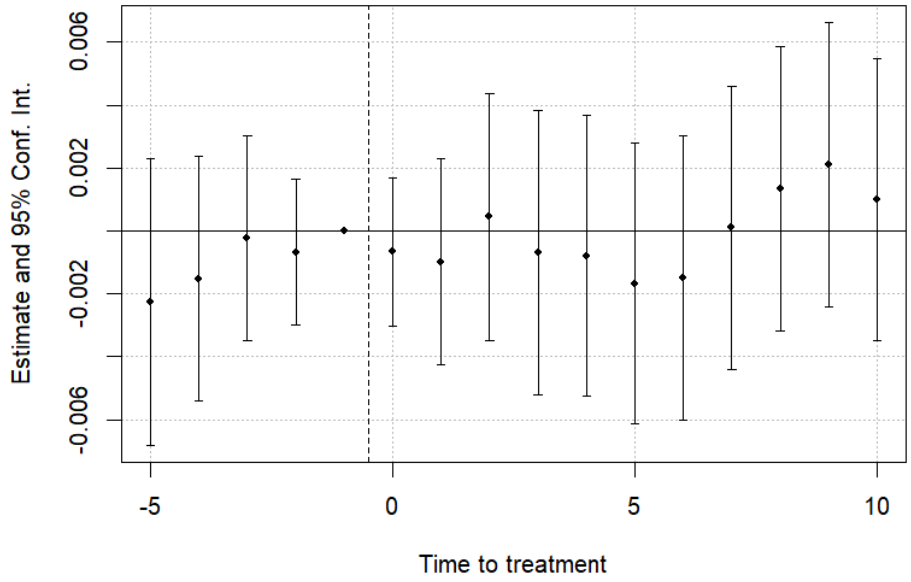
Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

analysis period. A possible explanation for this result is that there may not necessarily be an increase in the number of households possessing firearms, but rather an increase in the number of firearms in households that already owned them. Thus, gun availability would remain constant without leading to an increase in the number of gun-related suicides but still resulting in a greater number of firearms in circulation. However, it is worth mentioning that this hypothesis cannot be tested with the data available in this paper, as we did not have access to the exact number of firearms in circulation.

6.1 Robustness of Main Results

One could argue that the number of clubs, in general, might be increasing in pro-Bolsonaro municipalities (perhaps due to some type of entrepreneurship incentive effect), which could mechanically cause the number of shooting ranges to rise as well. Therefore, we conducted an auxiliary exercise using the number of new clubs in general (considering all establishments categorized under the CNAE code for social clubs and excluding the shooting ranges considered in the main result) as the dependent variable. As shown in Figure 26 in Appendix A, not only is this variable not increasing, but there is statistical evidence of a decrease. Thus, there does not appear to be a systematic increase in the number of shooting ranges associated with a potential increase in clubs in general. The average effects in Table 4 corroborate this analysis. It is worth mentioning that this

Figure 9: Effect of political alignment on the share of gun-related suicides



Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related suicides considering the previous 12 months.

decline could potentially be attributed to the pandemic.

Similarly, one could say that the share of gun-related deaths is increasing due to a generalized reduction in deaths from external causes. To address this, we also conducted a placebo exercise for this outcome and presented the results in Figures 27a and 27b in Appendix A. It is evident that there is no increase in the share of deaths related to melee weapons or vehicles. Besides, we observe no average effects for these variables in 4 allowing us to rule out a possible mechanical increase in the share of gun-related deaths.

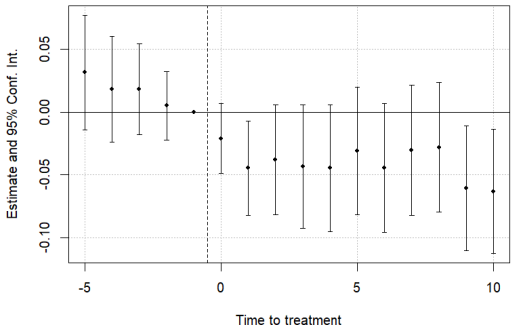
7 Heterogeneity Analysis

We now explore several heterogeneity exercises. This allows us to identify variations in effects across different subgroups and contexts, providing deeper insights into the factors influencing the main results.

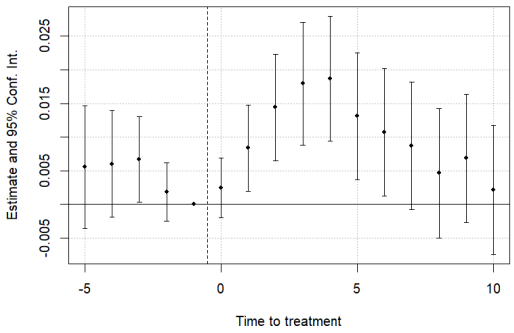
In summary, we observe more pronounced effects in the increase of shooting ranges and gun-related deaths in more populous municipalities, those with higher per capita income, and more rural areas. These results prompt us to investigate a potential effect channel associated with rural productivity, as a positive correlation in more productive areas could indicate a greater penetration of pro-gun rhetoric in regions tied to agribusiness.

For all heterogeneity analyses, as with the full sample, the results for gun-related

Figure 10: Age, race, and place of death heterogeneity



(a) Effect of political alignment on the share of gun-related deaths (Black people from 18 to 24 years old)



(b) Effect of political alignment on the share of gun-related deaths (in public spaces)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

suicides were not statistically significant, consistent with the main results section.

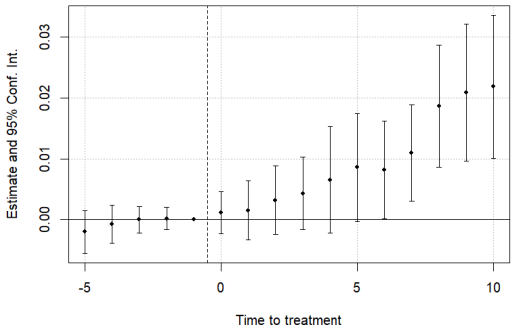
7.1 Age, Race, and Place of Death

In Brazil, Black and Brown youth are already among the populations most plagued by gun-related deaths due to crime-related factors (Cerqueira et al., 2023). Therefore, it is natural to question whether this group would also be more impacted by our treatment. Additionally, the minimum legal age for firearm possession is 25, leading us to believe that if there is an increase only in legally obtained firearms, there shouldn't be detrimental effects of this higher prevalence in ages below 25. To address this, we restrict the sample to Black and Brown people aged 18 to 24 years. As shown in Figure 10, this focal group not only does not show an increase in post-event effects but also shows a reduction that persists until the end of our observation window. Therefore, it seems reasonable to assert that the observed increase in gun-related deaths is not related to crime-related factors.

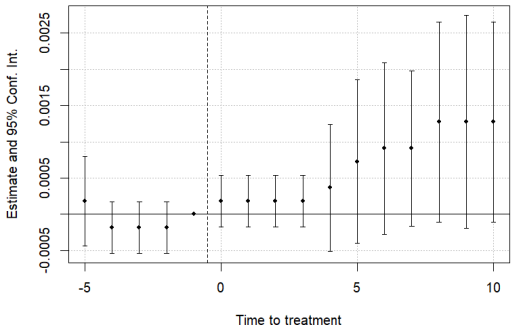
On the other hand, in Figure 10b, we note an increase in deaths occurring in public places, very similar to the overall gun-related deaths in both magnitude and time scale. This result strengthens the hypothesis of a probable increase in the number of firearms in circulation and a possible misuse of firearms being used for personal defense or committing crimes instead of being safely transported to shooting ranges.

These effects can be observed more directly by looking at the average effects presented in Table 5 in Appendix A, where we note that the share of gun-related deaths among Black youth shows a significant average decrease of approximately 8.6%, while the share of gun-related deaths in public spaces shows a marginally significant increase of 3.4%.

Figure 11: Population heterogeneity: shooting ranges



(a) Effect of political alignment on new shooting ranges (population above country median)



(b) Effect of political alignment on new shooting ranges (population below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

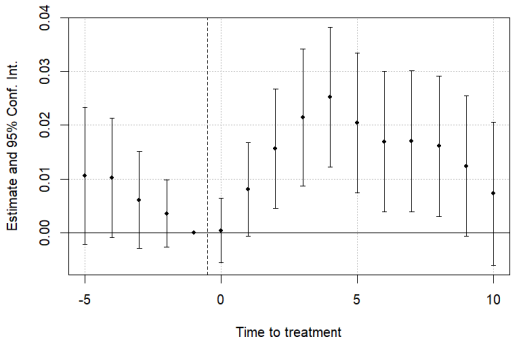
7.2 Population

Next, we divide our sample into two groups, one above and one below the median population distribution according to the 2010 Census, and run our baseline specification. This exercise analyzes whether the observed effects are related to city size and potentially associated violence issues. Figure 11 shows that the increase in the number of shooting ranges is much more pronounced in cities with populations above the median. Similarly, for gun-related deaths, municipalities with larger populations display higher magnitude point estimates and a steeper increase in the effect as displayed in Figure 12. Regarding average effects, Table 6 shows that the estimated coefficient for the growth of shooting ranges in high population municipalities is ten times larger than that of the low population ones. Meanwhile, results for gun related deaths are roughly similar among both groups.

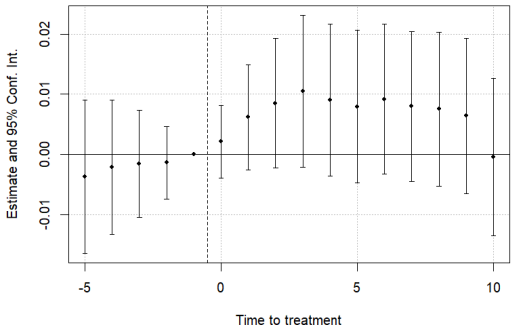
7.3 Income

Additionally, we divide our sample into two groups based on the median per capita income distribution from the 2010 Census and conduct a similar analysis. This aims to determine if the effects observed in the full sample are related to the wealth of the municipalities, as vote share distribution is strongly correlated with this factor. Figure 13 indicates that the increase in the number of new shooting ranges is significantly more pronounced in cities with per capita income above the median. Similarly, regarding gun-related deaths, municipalities with higher per capita income show higher magnitude point estimates and a steeper increase in the effect, as show in Figure 14. Average effects indicate that the growth of shooting clubs is more pronounced in municipalities above the national per capita income median as Table 7 shows.

Figure 12: Population heterogeneity: gun-related deaths



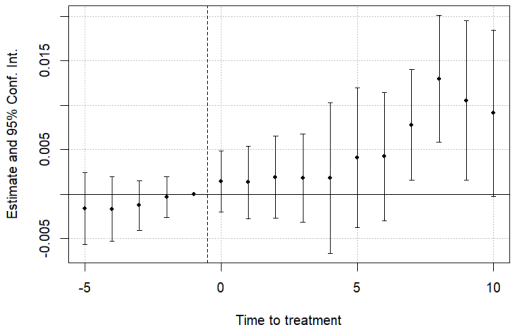
(a) Effect of political alignment on the share of gun-related deaths (population above country median)



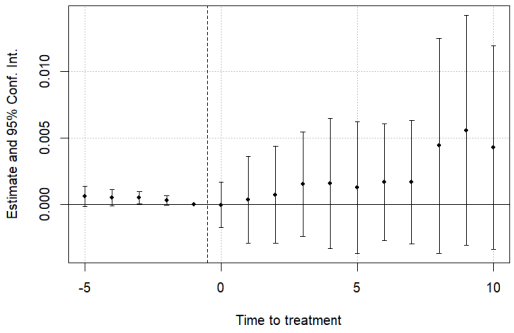
(b) Effect of political alignment on the share of gun-related deaths (population below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

Figure 13: Income heterogeneity: shooting ranges



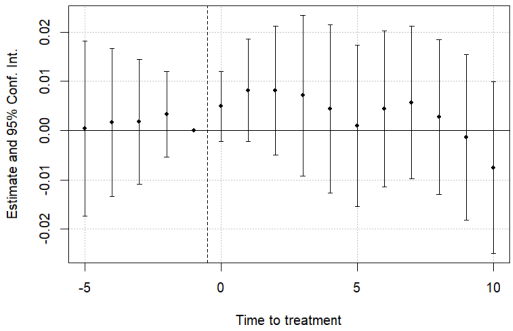
(a) Effect of political alignment on new shooting ranges (income above country median)



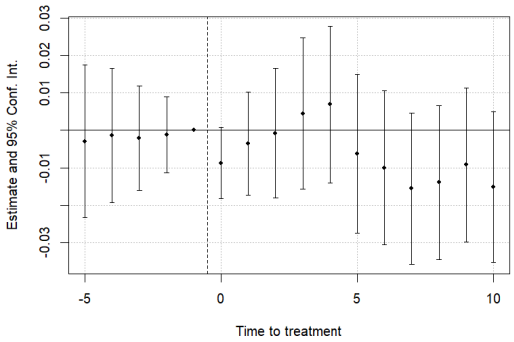
(b) Effect of political alignment on new shooting ranges (income below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 14: Income heterogeneity: gun-related deaths



(a) Effect of political alignment on the share of gun-related deaths (income above country median)



(b) Effect of political alignment on the share of gun-related deaths (income below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

7.4 Rurality

Finally, we perform a heterogeneity exercise based on the rurality index from the 2010 Census. We divide the sample into groups above and below the median rurality index. Here, municipalities above the median are more rural, while those below are more urban. This analysis helps determine if the observed effects are indeed related to urban violence factors. Figure 15 shows that the increase in shooting ranges appears to be associated with more urban municipalities. However, for gun-related deaths, Figure 16 shows that the result is reversed, with more rural municipalities showing a more pronounced effect.

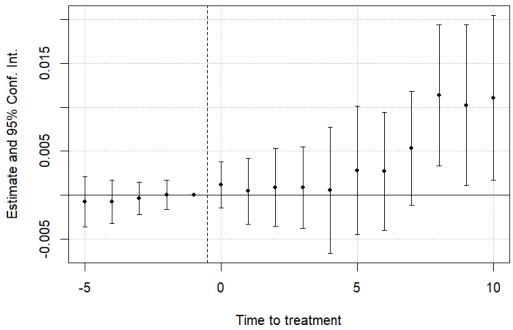
8 Mechanisms

In this section, we explore some potential underlying causes that could be driving the observed effects.

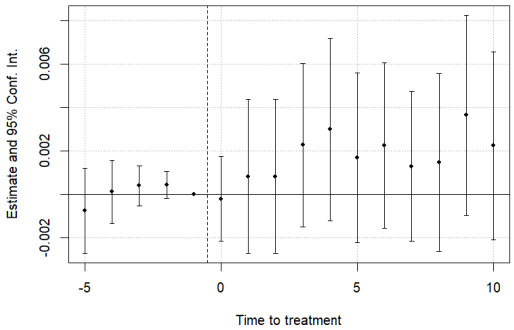
8.1 Media Presence

First, we investigate the role of communication by analyzing outcomes based on the presence of local media (radio and TV) and internet providers. For the outcome of shooting ranges, we estimate the baseline model on a sub-sample of municipalities with at least one radio broadcaster and those with no radio broadcaster (see Figure 17). Similarly, we examine the outcome of gun-related deaths in Figure 18. From Table 9 we can observe that the effect on shooting ranges and gun-related deaths are almost entirely driven by municipalities with radio presence.

Figure 15: Urbanization heterogeneity: shooting ranges



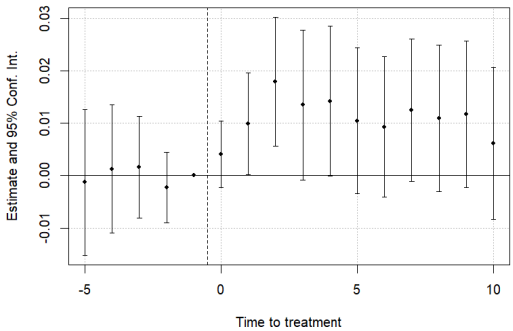
(a) Effect of political alignment on new shooting ranges (rurality above country median)



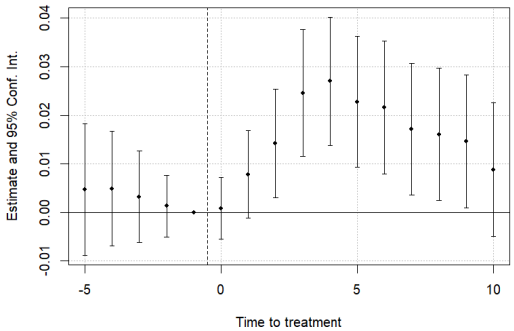
(b) Effect of political alignment on new shooting ranges (rurality below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 16: Urbanization heterogeneity: gun-related deaths



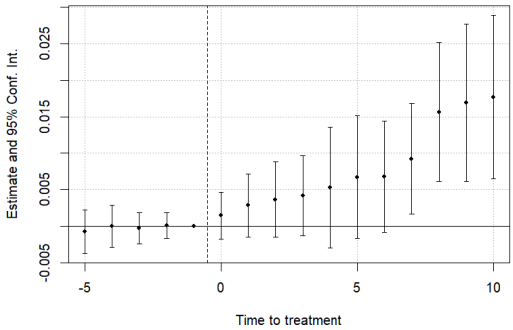
(a) Effect of political alignment on the share of gun-related deaths (rurality above country median)



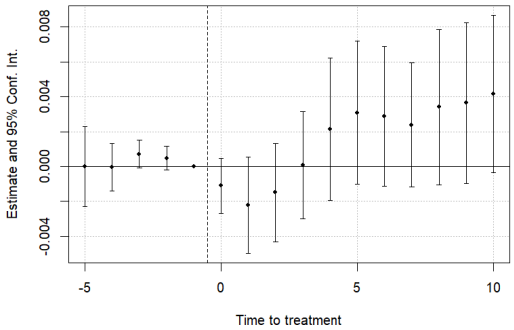
(b) Effect of political alignment on the share of gun-related deaths (rurality below country median)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

Figure 17: Radio presence mechanism: shooting ranges



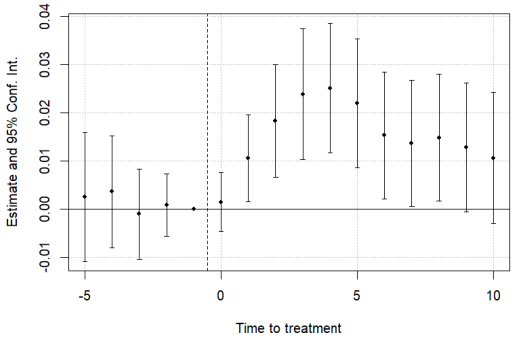
(a) Effect of political alignment on new shooting ranges (at least one radio broadcaster)



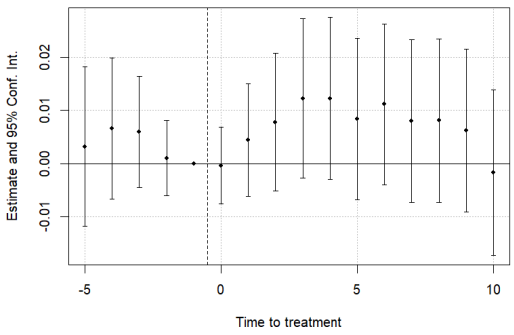
(b) Effect of political alignment on new shooting ranges (no radio broadcaster)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 18: Radio presence mechanism: gun-related deaths



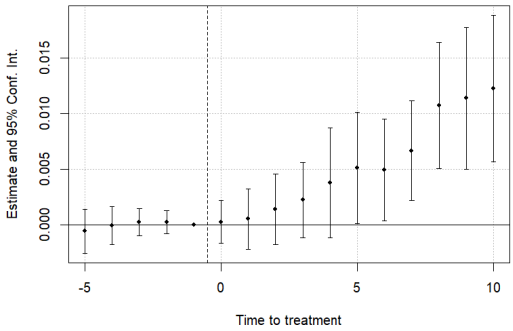
(a) Effect of political alignment on the share of gun-related deaths (at least one radio broadcaster)



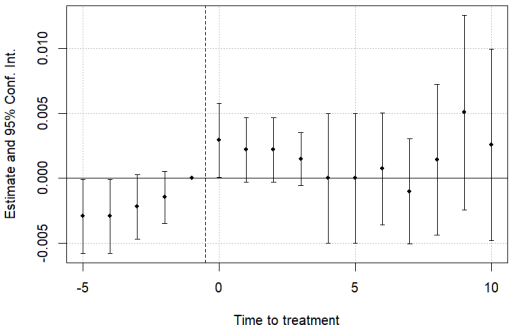
(b) Effect of political alignment on the share of gun-related deaths (no radio broadcaster)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

Figure 19: TV presence mechanism: shooting ranges



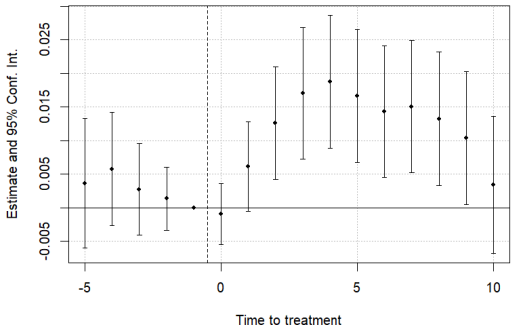
(a) Effect of political alignment on new shooting ranges (at least one local TV broadcaster)



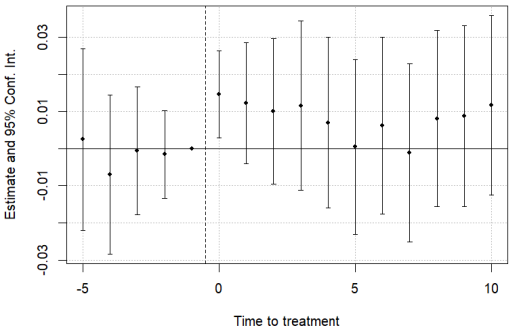
(b) Effect of political alignment on new shooting ranges (no local TV broadcaster)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 20: TV presence mechanism: gun-related deaths



(a) Effect of political alignment on the share of gun-related deaths (at least one local TV broadcaster)

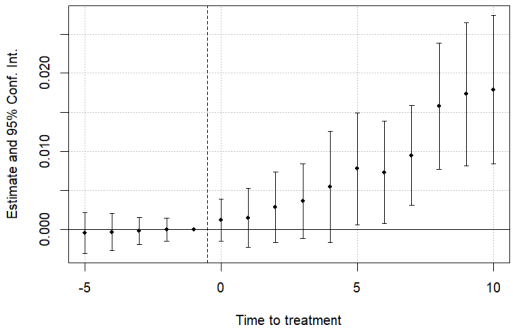


(b) Effect of political alignment on the share of gun-related deaths (no local TV broadcaster)

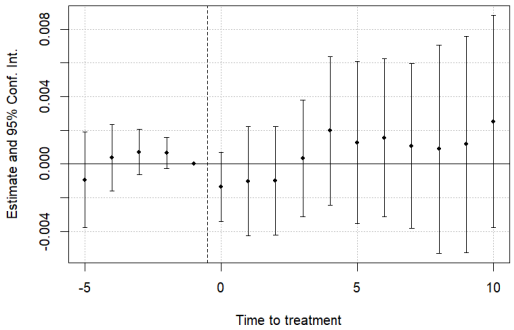
Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

We repeat the analysis for sub-samples of municipalities with at least one local TV broadcaster and those with none (Figures 19 and 20), as well as for municipalities with internet providers and those without (Figures 21 and 22). In line with the radio presence analysis, From Tables 10 and 11 we can also see that the effect on gun-related deaths is more precisely estimated in municipalities with TV broadcaster and internet provider presence. For the number of shooting ranges, however, there seems to be a heterogeneous effect only for internet provider presence.

Figure 21: Internet provider presence mechanism: shooting ranges



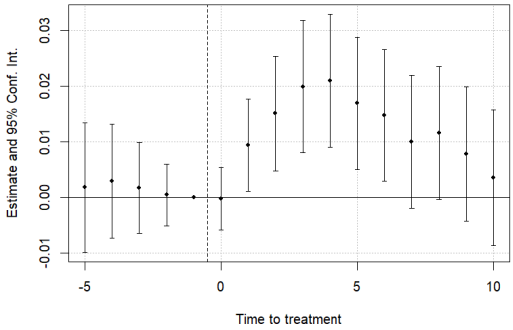
(a) Effect of political alignment on new shooting ranges (at least one internet provider)



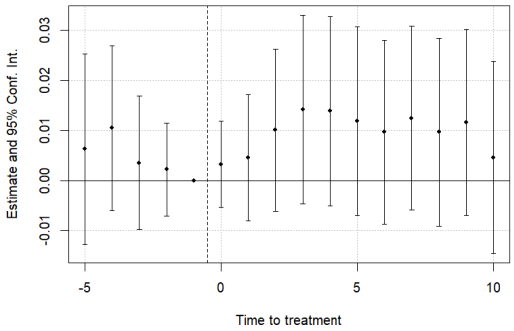
(b) Effect of political alignment on new shooting ranges (no internet provider)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 22: Internet provider presence mechanism: gun-related deaths



(a) Effect of political alignment on the share of gun-related deaths (at least one internet provider)



(b) Effect of political alignment on the share of gun-related deaths (no internet provider)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

Overall, we observe that municipalities with more developed communication channels or access to social media appear to be driving the effects, suggesting that media plays a crucial role in spreading pro-gun rhetoric.

This observation is supported by other works in the literature that show the significant role local AM radio stations and TV play in disseminating information in Brazil, especially in smaller municipalities (Ferraz and Finan, 2008). They argue that Local AM radio stations have been indispensable for local political information since Brazil's redemocratization in the early 1980s, especially in smaller communities. Even though television is widely available across the country, just 8% of towns have local TV stations, compared to 34% that have local AM radio stations. This underscores the critical role of radio and TV in disseminating political messages and shaping public opinion, reinforcing the observed effects of pro-gun rhetoric.

8.2 Relation with Agribusiness

Given the pronounced effects observed in more populous, wealthier, and rural municipalities (7), it is pertinent to investigate whether these effects are driven by the connection between Bolsonaro's pro-gun stance and the agribusiness sector. The predominance of votes for Bolsonaro in areas with large estates (Econômico, 2022) suggests that regions with higher agricultural productivity may be more receptive to his ideology. By examining the relationship between agricultural productivity and our outcomes, we can gain deeper insights into how economic factors in rural areas might amplify the impact of pro-gun rhetoric.

For this analysis, we use data from the 2006 Agricultural Census and divide the sample into two groups: municipalities with agricultural production above the national median and those below. We then estimate the baseline model for each of these groups.

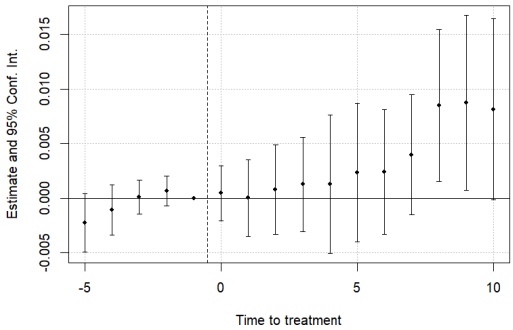
Results for the number of new shooting ranges are similar in both groups, indicating that no specific group is driving the effects (Figure 23). However, when we observe gun-related deaths, it is notable that municipalities with high agricultural production present much more pronounced results, while municipalities with lower agricultural production show statistically insignificant effects for this outcome (Figure 24). These results are also more concisely presented in Table 12 where we notice a stark increase of 8.6% in the share of gun-related deaths in areas with higher rural productivity.

8.3 Presidential Presence

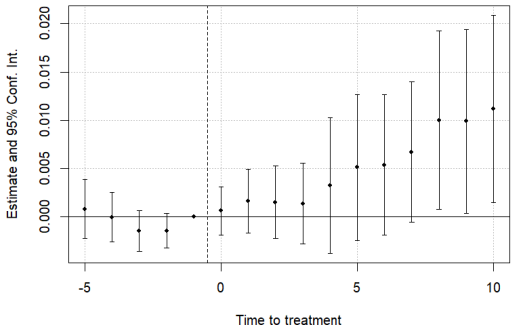
Finally, we employ the specification described in section 5.2 to explore the political engagement incited by the presence of the president in municipalities. By using Equation 2's formulation, we measure the effect of the president's visit on the number of new shooting ranges at the monthly level.

As shown in Figure 25a, from the first visit of the president to a municipality during his term, there is a gradual increase in the number of new shooting ranges. This result is

Figure 23: Ideological affinity with agribusiness mechanism: shooting ranges



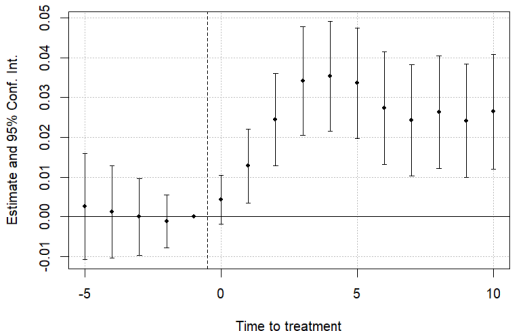
(a) Effect of political alignment on new shooting ranges (higher agricultural production)



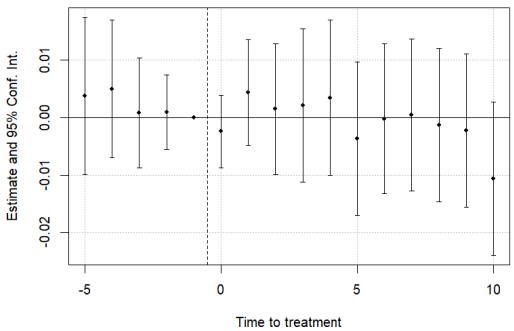
(b) Effect of political alignment on new shooting ranges (lower agricultural production)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

Figure 24: Ideological affinity with agribusiness mechanism: gun-related deaths



(a) Effect of political alignment on the share of gun-related deaths (higher agricultural production)

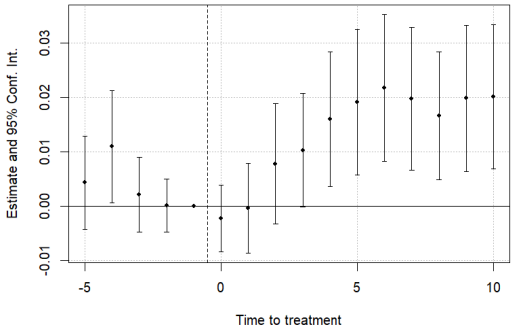


(b) Effect of political alignment on the share of gun-related deaths (lower agricultural production)

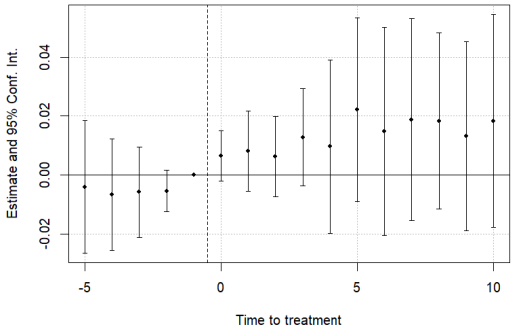
Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the share of gun-related deaths considering the previous 12 months.

positive and significant, persisting until the end of our observation window. Furthermore, we do not observe statistically significant effects when we analyze the number of new clubs in general, excluding shooting ranges (Figure 25b).

Figure 25: Political engagement mechanism: shooting ranges



(a) Effect of political alignment on new shooting ranges (at least one radio broadcaster)



(b) Effect of political alignment on clubs in general (excluding shooting ranges)

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 2 together with 95% confidence intervals. The sample includes municipalities visited once by Bolsonaro. Results cover the window [-5,+10] around the president visit. The dependent variable is the moving average of the number of new shooting ranges considering the previous 12 months.

These findings suggest that the presence of the president may play a direct role in promoting pro-gun rhetoric and increasing interest in shooting ranges at the local level. The absence of an effect on the total number of new clubs, excluding shooting ranges, reinforces the idea that the influence is specifically linked to pro-gun rhetoric rather than a general increase in entrepreneurship or the creation of social clubs in general which fall under the same commercial category.

9 Conclusion

This paper documents the relationship between ideological alignment with a pro-gun political leader and the creation of new firearms-related establishments, as well as gun-related deaths. Using a two-way fixed effect model to account for time and municipality idiosyncratic characteristics, we find significant evidence that municipalities above the national vote share median for Bolsonaro display an average increase of 0.005 new shooting ranges after the announcement of the 2018 election results. Additionally, we observe that these municipalities show a 0.8 percentage point increase in the share of gun-related deaths. However, there is no statistically significant change in the share of gun-related suicides. The lack of growth in general clubs not related to firearms and non-significant effects in placebo deaths related to melee weapons and vehicles rules out a purely mechanical increase in our main outcomes. These results suggest that the penetration of a pro-gun political leader's rhetoric can influence public interest in firearms, reflected in the opening

of shooting ranges. The increased information and presence of firearms might lead to their misuse, raising crime levels as measured by gun-related deaths. The absence of effects on gun-related suicides suggests no overall increase in the number of armed households but rather increased use of existing firearms.

Our analysis indicates heterogeneity effects, with more pronounced impacts in populous, higher-income, and rural municipalities. This predominance hints at the role of communication channels, which are more prevalent in larger cities, and the predisposition of certain populations to embrace the president's discourse. These insights are confirmed by examining mechanisms such as the presence of radio and TV broadcasters and internet providers, and the relationship between our outcomes and greater agribusiness presence. It becomes evident that the effects on new shooting ranges and gun-related deaths are driven by municipalities with higher media presence. Municipalities with higher rural productivity, though not significantly different from their counterpart in new shooting ranges, show a strong increase in gun-related deaths on the other hand. Also, exploring presidential visits as a treatment further strengthens the hypothesis that observed effects stem from communication and political engagement rather than direct legal changes. After the president's first visit, there is a significant and persistent increase in new shooting ranges in subsequent months.

While the specific characteristics of the Brazilian electoral process, gun laws, and the COVID-19 pandemic context are unique, this study demonstrates the influence of violent political rhetoric on public behavior, with pronounced effects in areas with better media access and a predisposition to the president's discourse.

In summary, ideological alignment with a pro-gun political leader, such as Jair Bolsonaro, significantly influences the creation of new shooting ranges and seems to increase gun-related deaths, particularly in municipalities with higher media presence and rural productivity, which are more prone to abide by his ideology. This suggests that political rhetoric can drive public interest and behavior related to firearms, highlighting the crucial role of communication channels in amplifying these effects.

However, we emphasize that more future research is needed to fully understand the observed effects, as our analysis has limitations in terms of data and information access. With geolocated data on firearm positions and occurrences of gun-related deaths, the exact number of new firearm licenses obtained in municipalities, and more granular measures of political alignment obtained from social networks, the observed effects could be measured more accurately.

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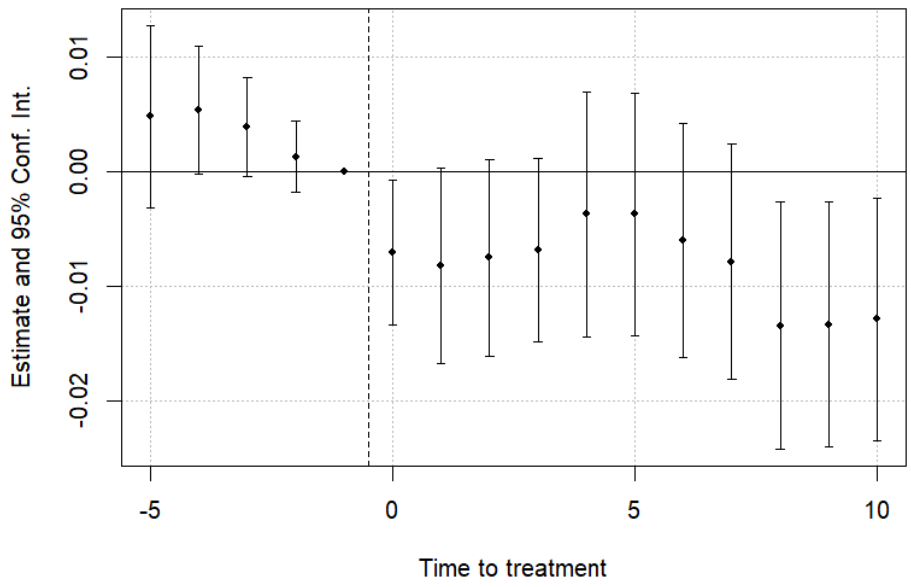
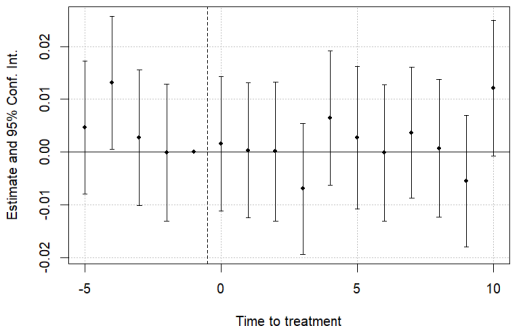
A Appendix

Figure 26: Effect of political alignment on new clubs in general (excluding shooting ranges)

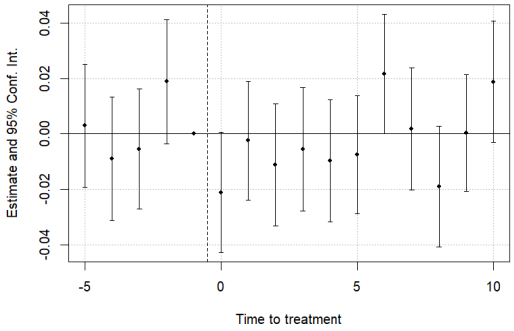


Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. The dependent variable is the moving average of the number of new clubs considering the previous 12 months.

Figure 27: Effect of political alignment on placebo deaths



(a) Effect of political alignment on the share of melee-related deaths



(b) Effect of political alignment on the share of vehicle-related deaths

Notes: This table reports the dynamic coefficients obtained from the estimation of equation 1 together with 95% confidence intervals. The sample includes all municipalities with above-median vote share in Bolsonaro (treated) versus municipalities with below-median vote share in Bolsonaro (control). Results cover the window [-5,+10] around the election announcement. In Panel (a), the dependent variable is the moving average of the share of melee-related deaths considering the previous 12 months. In Panel (b), the dependent variable is the moving average of share of vehicle-related deaths considering the previous 12 months.

Table 3: Baseline average effects

	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)
Post Election × Pol. Align.	0.005***	0.008**	0.001
	(0.002)	(0.003)	(0.002)
Num.Obs.	89040	89040	89040
D.V. Mean (Baseline Control Units)	0.00068	0.21449	0.01488
Units	5565	5565	5565
Period FEs	X	X	X
Municipality FEs	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1) the moving average of the new shooting ranges, (2) the share of gun-related deaths, and (3) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1$,* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$

Table 4: Robustness exercise average effects

	Non-Gun Clubs	Melee Deaths	Vehicle Deaths
	(1)	(2)	(3)
Post Election × Pol. Align.	-0.011**	-0.003	-0.002
	(0.004)	(0.002)	(0.004)
Num.Obs.	89040	89040	89040
D.V. Mean (Baseline Control Units)	0.01671	0.07525	0.18950
Units	5565	5565	5565
Period FEs	X	X	X
Municipality FEs	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1) the moving average of the new clubs, (2) the share of melee deaths, and (3) the share of vehicle deaths. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*}\ p < 0.05,^{**}\ p < 0.01,^{***}\ p < 0.001$

Table 5: Average Effects by Age, Race, and Place of Death

	Black Youth Deaths	Public Places Deaths
	(1)	(2)
Post Election × Pol. Align.	-0.056***	0.006+
	(0.016)	(0.003)
Num.Obs.	6041	88287
D.V. Mean (Baseline Control Units)	0.65541	0.17732
Units	5565	5565
Period FEs	X	X
Municipality FEs	X	X

Notes: This table reports the main effects of the election announcement on two dependent variables: the moving average of the gun-related deaths (1) among black individuals with age between 18 and 24 years old and (2) in public places. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*}\ p < 0.05,^{**}\ p < 0.01,^{***}\ p < 0.001$

Table 6: Population heterogeneity average effects

	Low Population			High Population		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.001*	0.009*	0.000	0.010**	0.009+	0.002
	(0.000)	(0.004)	(0.002)	(0.003)	(0.005)	(0.003)
Num.Obs.	44051	44051	44051	44061	44061	44061
D.V. Mean (Baseline Control Units)	0.00000	0.11595	0.00777	0.00137	0.31372	0.02195
Units	2755	2755	2755	2755	2755	2755
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 7: Income heterogeneity average effects

	Low Income			High Income		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.002	-0.005	0.003	0.006*	0.002	0.003
	(0.002)	(0.007)	(0.003)	(0.003)	(0.006)	(0.004)
Num.Obs.	44052	44052	44052	44060	44060	44060
D.V. Mean (Baseline Control Units)	0.00033	0.22431	0.01364	0.00330	0.14890	0.02403
Units	2755	2755	2755	2755	2755	2755
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 8: Rurality heterogeneity average effects

	Low Rurality			High Rurality		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.005+	0.011*	0.001	0.002	0.013**	0.002
	(0.003)	(0.005)	(0.002)	(0.001)	(0.005)	(0.002)
Num.Obs.	44041	44041	44041	44039	44039	44039
D.V. Mean (Baseline Control Units)	0.00102	0.25882	0.01778	0.00053	0.19496	0.01355
Units	2754	2754	2754	2754	2754	2754
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 9: Media mechanism average effects: local radio broadcaster presence

	Low Radio Presence			High Radio Presence		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.001	0.004	0.000	0.008**	0.014**	0.003
	(0.001)	(0.005)	(0.002)	(0.003)	(0.005)	(0.003)
Num.Obs.	33456	33456	33456	40960	40960	40960
D.V. Mean (Baseline Control Units)	-0.00018	0.20190	0.01270	0.00171	0.26693	0.02086
Units	2092	2092	2092	2561	2561	2561
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 10: Media mechanism average effects: local TV broadcaster presence

	Low TV Presence			High TV Presence		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.004**	0.009	0.002	0.005**	0.009**	0.001
	(0.001)	(0.008)	(0.004)	(0.002)	(0.003)	(0.002)
Num.Obs.	13312	13312	13312	75728	75728	75728
D.V. Mean (Baseline Control Units)	0.00000	0.15159	0.01314	0.00083	0.22796	0.01525
Units	832	832	832	4733	4733	4733
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 11: Media mechanism average effects: internet provider

	Low Internet Presence			High Internet Presence		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.001	0.005	-0.002	0.008**	0.010*	0.003
	(0.002)	(0.006)	(0.003)	(0.003)	(0.004)	(0.002)
Num.Obs.	22800	22800	22800	51616	51616	51616
D.V. Mean (Baseline Control Units)	0.00015	0.17758	0.01240	0.00103	0.25837	0.01864
Units	1426	1426	1426	3227	3227	3227
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$

Table 12: Rural productivity mechanism average effects

	Low Rural Productivity			High Rural Productivity		
	Shooting Ranges	Deaths	Suicides	Shooting Ranges	Deaths	Suicides
	(1)	(2)	(3)	(4)	(5)	(6)
Post Election × Pol. Align.	0.006+	-0.003	-0.002	0.004+	0.024***	0.003
	(0.003)	(0.005)	(0.002)	(0.002)	(0.005)	(0.003)
Num.Obs.	44288	44288	44288	44288	44288	44288
D.V. Mean (Baseline Control Units)	0.00050	0.18387	0.01093	0.00107	0.27955	0.02286
Units	2769	2769	2769	2769	2769	2769
Period FEs	X	X	X	X	X	X
Municipality FEs	X	X	X	X	X	X

Notes: This table reports the main effects of the election announcement on three dependent variables: (1), (4) the moving average of the new shooting ranges, (2),(5) the share of gun-related deaths, and (3),(6) the share of suicides with guns. The table reports the coefficients obtained from the estimation of equation $Y_{md} = \beta \cdot [PolAlig_m \times Post\ Election_d] + \phi_d + \rho_m + \epsilon_{md}$. $PolAlig_m$ is a binary variable that equals one if the municipality m is above-median vote share in Bolsonaro and 0 otherwise. $Post\ Election_d$ is an indicator variable taking value 1 for all quarter-years after the election announcement, and 0 otherwise. Results cover the window [-5,+10] around the election announcement. $+p < 0.1,^{*} p < 0.05,^{**} p < 0.01,^{***} p < 0.001$