# Election Results and Democratic Discontent: Expectations, Extremism, and Democratic Values in Post-Election Brazil*

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**Abstract**

This paper studies how shocks to socioeconomic expectations induced by elections contribute to democratic discontent in polarized societies. Using new large-scale survey data collected throughout the 2022 Brazilian presidential election, I investigate how respondents' electoral and socioeconomic expectations, polarization, emotions, and attitudes toward violence and democracy evolved as a result of the close victory of the main opposition candidate. My analysis is guided by a stylized model, in which I show that highly polarized voters who assign a large probability to their candidate's victory experience a larger negative shock to their socioeconomic expectations in case their candidate loses. This expectation shock may then lead to an increase in violent and anti-democratic sentiments. By resurveying a large sample of respondents right after the election, I confirm the model's predictions and show how the role of this negative expectation shock is particularly strong among the most extreme supporters. In an additional survey experiment, I provide complimentary evidence in which I positively update respondents' expectations about the economy and find that this information treatment reduces their violent and anti-democratic sentiments.

**Keywords**: Elections, Democracy, Institutions, Polarization, Protest, Violence, Survey, Online Experiment, Perceptions, Expectations.

**JEL Codes**: D72, D74, D84, D91, F52, P17

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# 1 Introduction

In recent years, many countries have witnessed democratic backsliding and fatigue (Waldner and Lust, 2018; Wuttke et al., 2022). This shift has occurred even in countries with a long history of strong democratic institutions, such as the US. While citizens have long taken to the streets to demand change (Cantoni et al., 2023), violent attacks on democratic institutions in mature democracies have rarely occurred. The most remarkable departure from this norm was the US Capitol's insurrection on January 6, 2021. Two years later, on January 8, 2023, a similar attack happened in Brazil following a similarly polarizing and uncertain election. One function of elections is to allow for the transition of power in a manner that maintains relative liberty and peace (Przeworski, 2018). However, the recent increase in populism (Guriev and Papaioannou, 2022) and polarization (Klein, 2020) in today's societies appear to be testing these institutions. A surprising election outcome can, in fact, change social norms by providing new public information (Bursztyn et al., 2020) and reduce trust in electoral institutions (Marx et al., 2021). While other studies have documented the increase in violent protest after an electoral defeat (Nadeau and Blais, 1993), the findings from this literature do not provide evidence on how or why this takes place.

There are several different reasons why the electoral outcome may foster democratic discontent and induce a violent reaction. First, election losers may lose faith in democracy because they believe the election result was illegitimate. Moreover, as voters have a "winner-take-all" mindset, they may worry that the electoral outcome will have strong negative effects on their own group. This concern may be more pronounced in societies that are highly polarized. In such societies, it may also be more difficult for the losing side to accept defeat. We might imagine that all these factors will be even more significant in the case of an uncertain election that is perceived as having high stakes. These factors are not mutually exclusive and may all play a role in fostering democratic discontent. For this reason, it is challenging to understand which is the main driver behind a violent response to an electoral outcome.

In this paper, I focus on the link between the disagreement and uncertainty surrounding recent elections and the extreme, sometimes violent, responses to their outcomes. I highlight the importance of socioeconomic expectations in driving democratic discontent in a polarized society. In doing so, I make three distinct contributions. First, I build a model that relates the choice of becoming violent and anti-democratic to polarization, extremism, and shocks to voters' socioeconomic expectations. Second, I survey 1,213 respondents right before and right after the 2022 Brazilian presidential election. I exploit this sample to measure how the electoral outcome affected their socioeconomic expectations and how this change relates to an increase in violent and anti-democratic sentiments. Third, I design a survey experiment where I provide participants with positive news about the economy. By increasing their

socioeconomic expectations, the treatment makes respondents less willing to protest.

To provide structure to my setting and to guide the analysis, I develop a model where individuals face the choice of turning violent and anti-democratic to overthrow the government. In this setting, individuals are only concerned with their country's economy. Therefore, their utility is given by the current president's competence. If individuals believe that a more competent alternative is available, they will be willing to pay the cost of becoming violent and change the person in charge of the country. By focusing on the aftermath of an electoral outcome, I highlight the role of negative shocks to individuals' socioeconomic expectations and how they relate to polarization. When individuals hold extremely different views on the competence of the two candidates and assign a large probability to their candidate's victory, they will experience a larger negative shock to their socioeconomic expectations in case of defeat. My model predicts that only the most extreme supporters experiencing a sufficiently large negative shock to their expectations will become more violent and anti-democratic after losing an election.

My empirical analysis focuses on how Brazilian voters' attitudes toward violence and democratic institutions were affected by the results of the 2022 presidential election. To explore these changes, I run several waves of large-scale online surveys representative of the Brazilian adult population along the dimensions of income, age, gender, and geographical macro-region. To study the full evolution of voters' attitudes and expectations, the data was collected in six different waves for a total of 8,016 respondents. The first five waves were collected in a nine-week period around the election, with the first wave collected before the first round and the fifth three weeks after the election's final result. The last wave was collected one year after the election. Every survey wave asked respondents about their voting plans (or who they voted for) and how strongly they support their candidate. Respondents were then asked about the probability of victory for their candidate, their feelings toward the two candidates, their emotions, and their perceptions and expected evolution of various socioeconomic outcomes in Brazil, such as inflation and inequality. The survey also elicited a range of attitudes toward violence and democracy, together with preferences for multiple forms of government.

In my descriptive analysis, I find that stronger supporters are more polarized in the perceived competence of the two candidates, and more likely to believe that their candidate will win. In line with these two findings, I also document that the magnitude of the negative shock to socioeconomic expectations experienced by election losers is increasing in their support strength.

The main results of my paper rely on a subsample of 1,213 respondents who have been surveyed twice: once before the second (and final) round of the election and once right after it. By resurveying these respondents, I am able to measure the within-individual variation in socioeconomic expectations caused by the election result as well as their attitudes toward

democratic institutions and regime change. Using a two-period panel data analysis, I find that the electoral defeat makes the most extreme supporters more accepting of violence, more supportive of army rule, and less likely to believe that democracy is a good political system. However, they still believe that democracy is the best political system for Brazil. Additionally, I find that these effects are more pronounced in those who have experienced a larger negative shock to their socioeconomic expectations. These results, confirmed by additional robustness checks to exclude alternative mechanisms, highlight the role that the change in expectations about the economy plays in increasing democratic discontent after an electoral defeat. Finally, by looking across all waves, I show that the election result's effect on expectations and emotions is persistent, remaining largely unchanged even after one year. This final result suggests that the increase in democratic discontent may be long-lasting.

To rule out other mechanisms, in the experimental part of the paper, I consider the causal impact that a change in the economy's expectations has on violent and anti-democratic attitudes. In September-October 2023, I recruited a sample of 3,000 participants representative of the adult Brazilian population through an online panel survey. The experiment showed a randomly selected subgroup of respondents a short video to manipulate their expectations about the economy. The treatment showed respondents the decline in inflation rate between September 2022 and June 2023. In the video, I highlight how, during the last months of incumbent's presidency, the inflation rate was decreasing very slowly, but after January, it started to decrease at a higher rate. When treated, respondents from both sides of the political spectrum become more likely to believe that inflation will keep decreasing, and their socioeconomic expectations are also positively updated. In turn, this leads supporters of the former president to become less willing to attend violent protests, and while not significant, the treatment also goes in the direction of increasing their support for democracy. These results highlight the role that economic concerns, in this case captured by individuals' expectations, play in shaping democratic discontent.

Overall, my results suggest that what leads people to become more violent and anti-democratic when losing an election is the shock they experience to their expectations about the future. This adds a rational component to the explanation for post-electoral violence, a phenomenon whose causes are still not well understood.

## 1.1 Related Literature

This paper contributes to the literature on the effects of election results and the literature on the drivers of violence and democratic discontent.

By recontacting the same individuals right after the election results, I manage to precisely measure how expectations, emotions, and preferences were affected by the election result and study how these changes affect each other. Although many studies have looked at the effects

of an election on various outcomes, most were not following the same individuals before and after the election. To the best of my knowledge, I am the first to analyze, with such a large sample, how the same individuals were affected by an electoral outcome. In doing so, I provide new insights that build on past work on how electoral defeats lead to dissatisfaction with democratic processes and outcomes, in terms of violent protests (Nadeau and Blais, 1993) and decrease in trust in electoral institutions (Marx et al., 2021). Various papers have also shown the effect of election results in signaling the most accepted social norms such as xenophobic views (Bursztyn et al., 2020), and hate crimes (Albornoz et al., 2020). Finally, Fetzer and Yotzov (2023) find that a significant electoral surprise is associated with a smaller economic growth rate.

Given the narrow margin that decided the 2022 Brazilian presidential elections, my paper also relates to the extensive literature from political science and legal studies on the consequences of close elections. Hasen (2005) and Hirsch (2020) argued that close elections are more vulnerable to manipulation or fraud, while Rapoport and Weinberg (2000) show how they might incentivize fraud and violence, and I show in particular that the latter concerns are well-founded. Przeworski (2018) and Hasen (2020) focus instead on how close elections are more likely to be disputed, reducing trust in the electoral process. Voter perceptions of fairness and election integrity are, in fact critical for legitimacy (Weatherford, 1992). Persily and Stewart III (2021), by looking at the 2020 US election, show how the election's closeness relates to confidence in an accurate vote count. But this effect is not unique to the 2020 election. It is also known as the "winners-losers effect": after the election, supporters of the losing candidate tend to question the legitimacy of the election, while supporters of the winning candidate tend to gain confidence in the election system, especially when the elections are close (Birch, 2008; Sances and Stewart, 2015; Sinclair et al., 2018; Clark and Stewart III, 2021). As I show, such reactions are particularly prominent for voters who experience the greatest shock to their expectations about a country's political and economic future. Finally, Banducci and Karp (2003) examine how the electoral outcome, together with attention to media coverage and campaign activity, are drivers of the change in support for the political system after an election.

I additionally contribute to existing literature on violence and democratic discontent. While many studies have explored the determinants of such phenomena, none have examined what triggers violent reactions following an electoral loss. In contrast, I utilize my large sample of recontacts to emphasize the role of socioeconomic expectations in this process. I provide an additional explanation for post-electoral violence and democratic discontent by finding that the increase in violent and anti-democratic sentiment among extreme supporters is caused by a negative shock to their socioeconomic expectations. Through my experiment, I provide further evidence to support this mechanism. Focusing on Africa, Mattes and Bratton (2007) provide a review of the determinants of institutional trust and satisfaction with

democracy, and Doorenspleet (2012) explores the reasons behind dissatisfaction with the way democracy is working among citizens who are strong supporters of the democratic ideal. Looking into elections, Hafner-Burton et al. (2018) study the risks of pre-election violence in triggering post-election mass political protests. Cantoni et al. (2023) provide an extensive overview of protests from every country worldwide in the last four decades. They find that a country's economic performance is not strongly correlated with protests, but, at the same time, individual values are predictive of protest participation. Differently from their results, I find that socioeconomic expectations at the individual level matter in increasing the propensity to protest. Sonin et al. (2023) look instead at what fueled the January 6 US Capitol attack. They highlight the role of political isolation in amplifying the effect of partisanship on participation, and they also find that mobilization increased sharply in states with narrow Trump losses.

More broadly, my paper also adds to the recent literature on populism and polarization by identifying an additional consequence of these phenomena: the higher likelihood of violent events after an election and a higher democratic discontent. As I will argue in detail in the paper, higher polarization leads to larger uncertainty surrounding the elections, and this will, in turn, trigger a more violent and anti-democratic reaction in case of defeat. Guriev and Papaioannou (2022) review some of the key papers on the driving of populism. Guiso et al. (2017) highlights the role of economic insecurity in the demand for populist parties in Europe, while Ali et al. (2023) focus on the role played by emotions in the US, mainly anger. My work also relates to Zaslove and Meijers (2023), where they study the relationship between populist and democratic attitudes. Looking at the Netherlands, they find that citizens with higher populist attitudes are not less supportive of liberal democracy. But, at the same time, they highly support forms of unconstrained majoritarian rule. In my sample, I find this same apparent contradiction. Even if extreme supporters become more in favor of anti-democratic options, they still believe democracy to be the best system for Brazil. Regarding polarization, a very close strand of literature from political science is the one on affective polarization (Druckman and Levendusky, 2019; Lees and Cikara, 2020; Moore-Berg et al., 2020; Lees and Cikara, 2021; Druckman et al., 2022). Focusing on the US, Iyengar et al. (2019) give an overview of the origins and consequences of affective polarization, highlighting the role played by partisanship and social identity. Other papers study instead the role played by political campaigns (Sood and Iyengar, 2016), overconfidence in beliefs (Ortoleva and Snowberg, 2015), and internet and social media (Boxell et al., 2017). To study the dynamics of this phenomenon, Boxell et al. (2022) look at the trends in affective polarization in the last forty years across various countries, while Michelitch and Utych (2018) explore how partisanship evolves during the electoral cycle.

Finally, my model relates to the theoretical literature that looked at the role of unfulfilled expectations on violence and anger, also in a theoretical way. For example, Card and Dahl

(2011) study the link between family violence and the emotional cues associated with wins and losses by professional football teams. Battigalli et al. (2019) and Aina et al. (2020) look instead at the role that frustration, due to unfulfilled expectations, has in shaping interactions and outcomes in two-stage games.

The rest of the article is organized as follows. In Section 2, I provide some information on Brazil's institutions and describe the 2022 presidential election and its aftermath. My data collection and survey design are explained in detail in Section 3. The full survey text is in the Appendix Section A-9. Section 4 presents my model, and Section 5 describes respondents' expectation shocks by their support strength. Section 6 studies the election results' effects. I discuss the findings from the experimental part of my study in Section 7. The last section concludes.

## 2 Institutional Setting

With 215 million people, Brazil is the $7^{\text{th}}$ most populous country in the world and the $4^{\text{th}}$ largest democracy. Brazil is a federal presidential representative democratic republic whereby the president is both head of state and of the government. The president is elected to a four-year term by absolute majority vote through a two-round system. On the same day of the first round, voters are called to vote for all the members of the Chamber of Deputies (the lower chamber) and one-third or two-thirds of the members of the Senate (the upper chamber). Voters also vote for the 26 governors of their states, plus the governor of the federal district, who are also elected through a two-round system.

Voting in Brazil is compulsory for all literate citizens over 18 and under 70. Nonetheless, if you do not vote, you are just required to present an acceptable justification or pay a fine of R$ 3.51 (less than $0.70). This might explain why around a fifth of registered voters generally end up not voting. The average turnout rate since the end of the military dictatorship in 1985 has been 80.27%, which is quite higher than the turnout in other more advanced democracies.[1]

Since 1996, elections have been carried out through electronic voting. The Brazilian voting machine consists of a screen with a numeric keypad where voters just need to type the number of their candidate. Besides allowing illiterate voters to easily vote for their candidate, by performing voter identification, secure voting, and tallying in a single process, electronic voting allowed to eliminate fraud based on forged or falsified public documents. Another benefit of electronic voting is the increased speed of the vote-counting process. Generally, it takes less than 12 hours to count all the votes, allowing to have a clear result on the same night of the election.

[1]The highest turnout rate has been reached with the first free election in 1989 (85.61%); the lowest turnout rate was in 2010 (78.50%). For comparison, in the US the average turnout rate in that same period (1988-2020) has been only 54.24%.

## 2.1 The 2022 Presidential Elections

The 2022 Brazilian presidential elections saw former president Luiz Inacio Lula da Silva (from now on only Lula), who ruled Brazil from 2003 to 2010, face the incumbent Jair Bolsonaro. From the polls, it has been clear from the start that this would have been a race between these two candidates.[2]

**The Candidates.** Bolsonaro was elected president in 2018 coming into office on a wave of populist anti-establishment indignation stirred by a massive corruption scandal. While considered as an outsider candidate, he had served as Federal Deputy from 1991 to 2018. A retired military officer, he managed to build a political base among cops and soldiers. Besides placing many army officers in key positions in his cabinet, he fought to increase their budgets and benefits, excluded soldiers and military police from pension cuts in 2019 and pardoned police convicted of illegal killings. Former union leader, and founder of the Workers' Party, Lula has been president from 2003 to 2010. During his presidency, Brazil witnessed rising incomes and a big expansion of the welfare state, mainly financed by a commodity boom. Having lifted 20 million out of poverty, Lula ended his presidency with an approval rating higher than 80%. In 2017, he was found guilty of taking bribes, as part of the huge corruption scandal Lava Jato, and has been imprisoned. In March 2021, the Supreme Federal Court annulled all convictions on the basis that the Federal Judge leading the case was biased against him, allowing him to run again for president in 2022.

**The Campaign.** Similarly to the 2020 US presidential elections, the 2022 Brazilian presidential election campaign has also been extremely polarizing with various episodes of violence. Most notably, Bolsonaro had been casting doubts on the legitimacy of the upcoming elections claiming multiple times that electronic voting machines are prone to fraud. Besides this, he also kept claiming that there was no way for him to lose the elections, or, as he put it in August 2021, that he would either be arrested, killed, or win Brazil's next election.[3] Bolsonaro's claims, together with his affinity with the military, led multiple people to worry about the possibility of a military coup in case of a defeat of the incumbent.

**Polls and Results.** Since announcing he would run once more for president in May 2021, Lula had been leading in the polls with a margin of over 10% against Bolsonaro. As the first round drew closer, Lula's support grew, and he began to approach 50% in the polls. Meanwhile, Bolsonaro's numbers remained steady at around 35%. Regardless of whether Lula won in the first round, it seemed likely that he would win the second round easily. However,

[2]The third and fourth candidates, Simone Tebet and Ciro Gomes, were never given at more than 10%, and in the first round, they ended up getting only 4.16% and 3.04% respectively.

[3]https://www.cnn.com/2021/08/29/americas/bolsonaro-brazil-elections-intl/index.html

on October 2, Lula received 48.43% of the votes, while Bolsonaro received 43.20%. This outcome came as a surprise to both sides of the political spectrum. Bolsonaro's supporters did not believe the polls, so they believed their candidate underperformed. On the other hand, many of Lula's supporters were still expecting a first-round victory. After the results, Lula's supporters became concerned about his chances in the second round, given Bolsonaro's unexpected success. Following the first round results, subsequent polls predicted a very close second round, which turned out to be the case. On October 30, Lula won the election with 50.90% of the valid votes, winning by only 1.80 percentage points, making it Brazil's closest election result in history. On the same night, Lula was declared elected by the Superior Electoral Court at 7:56 pm local time. However, Bolsonaro did not release any comment for almost 48 hours. During that time, protests broke out in many states, with Bolsonaro's supporters blockading key roads. Finally, on the afternoon of November 1, Bolsonaro stated that he would "comply with the Constitution," but still without acknowledging the result.

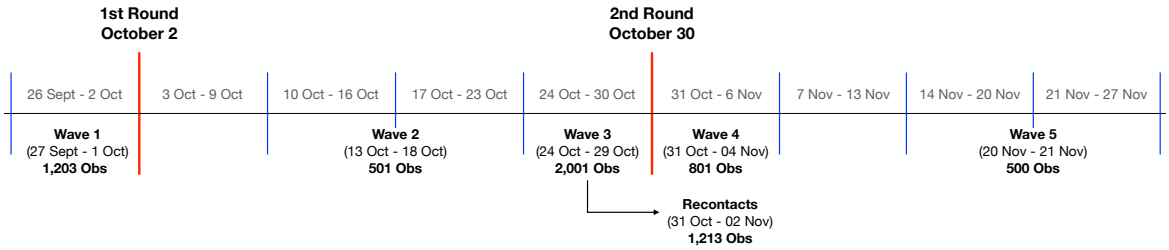
**2023 Brazilian Congress attack.** One week after Lula was inaugurated president, on January 8th a mob of around 5,000 Bolsonaro's supporters attacked Brazil's federal government buildings in Brasilia. Echoing the January 6 US Capitol attack, the mob invaded and damaged the Presidential Palace, the National Congress, and the Supreme Federal Court. As declared by various rioters, the purpose of this attack was to spur military leaders to launch a coup d'état and disrupt the democratic transition of power. While by the end of the day order had been already restored, this has been a clear sign of how well-founded the concerns of a possible military coup were and how polarized Brazil's society had become in the aftermath of the 2022 presidential elections.

# 3 Data Collection, Sample, and Survey Design

## 3.1 Data Collection and Sample

I administered the survey in five waves between September and November 2022 to cover the entire period of the Brazilian presidential elections, as illustrated in Figure 1. The waves were run in the following periods: i) the first wave of 1,203 respondents from September 27 to October 1 (before the elections' first round); ii) the second wave of 501 respondents from October 13 to October 18 (between the first and second round); iii) the third wave of 2,001 respondents from October 24 to October 29 (before the second round); iv) the fourth wave of 801 respondents from October 31 to November 4 (right after the second round); v) the fifth wave of 500 respondents from November 21 to November 22 (three weeks after the

## Figure 1: Timeline of Data Collection




second round).[4] The total sample contains 5,006 unique respondents. Each respondent who took part in the third wave of the survey was invited to take a follow-up survey designed to study the within respondents' effect of the election result. 1,123 respondents completed the follow-up survey (recontact rate of 60.6%). In 2023, between September 22 and October 14, I collected a sixth wave of 3,000 respondents to study the persistence of certain outcomes, as I will describe in Section 6.4, and to run a survey experiment that I will discuss in Section 7.

The survey was designed using the online platform Qualtrics. The surveys were then distributed by the commercial survey company Lucid and its partner panels. Before entering the survey, respondents were only told the expected length of the questionnaire, but neither the topic nor the creator. They were assured that they were completely anonymous and that there was no way to ever link their responses to their identity. After starting the survey, respondents reached a consent page informing them that they were about to take an academic research survey destined solely for research purposes and run by a nonpartisan researcher from Boston University. They were asked to respond accurately to the best of their knowledge and were assured that participation was entirely voluntary. After proving their consent, respondents were channeled through a set of screening questions used to enforce the quotas, as I describe below. To ensure data quality, respondents also had to pass a reCAPTCHA test and an inattention trap to reach the first actual block of the survey.

The survey company rewarded respondents for completing the survey in its entirety. The average incentive per survey completed was \$0.75, which corresponds to around R\$4.00. To ensure a high enough recontact rate, respondents completing the follow-up survey were instead paid \$1.00 (R\$5.20). The median times for completing the first, second, third, fourth, and fifth waves were 25, 33, 32, 31 and 32 minutes. The median time for completing the follow-up survey was 23 minutes. The sixth wave was shorter, with a median completion time of 20 minutes.

The sample of every wave, recontacts included, is representative of the adult Brazilian

[4] The three-week interval was decided to avoid any possible effect caused by the beginning of the 2022 FIFA World Cup (Brazil's first game was on November 24).

population. To achieve this, quotas were imposed on age, gender, income, and macro-regions of residence. My sample contains respondents from all 26 Brazilian states and the Federal District. Table 1 shows the characteristics of the sample in each wave compared with those of the overall Brazilian population. The population statistics are from the Brazilian Institute of Geography and Statistics (IBGE) and the Superior Electoral Court (TSE). The sample is by construction representative of the adult Brazilian population along the quota dimensions of age, gender, and macro-regions. As respondents from the lowest income quintile were harder to reach, this category ended up being underrepresented. Nonetheless, I still managed to have 10% of the sample of every wave from the lowest income group. In addition, the sample is also broadly representative of non-targeted dimensions such as race. Among the other non-targeted characteristics, respondents in the sample are more likely to have a college degree and to be employed. Respondents are also more likely to have voted in the presidential election than the average adult.[5]

### 3.2 The Survey

The complete questionnaire can be found in Appendix Section A-9, with a link that leads to the web interface of every wave of the survey (Appendix Section A-8). All survey waves share the same structure. The only differences among the five first waves derive from adapting questions related to the ongoing elections. The sixth wave's survey is instead shorter and focused more on question designed to capture democratic discontent. I now provide information on the blocks composing the survey and their core elements.

**Background socioeconomic questions.** After asking the consensus to take part in the study, the survey started by collecting information on respondents' citizenship, gender, age, income, and state of residency. This information was used to screen out respondents and for the quotas. I then asked additional questions about the respondents' demographics and socioeconomic backgrounds, such as race, education, employment status, ZIP code, and religion. I also queried them about their primary source of news and their overall social media consumption.

**Expectations about the elections.** In this block, respondents were asked about their expectations of the elections' results. Since what I am interested in are their expectations about who is going to be elected as president, in all waves I only focused on the elections'

[5]It is worth considering that the share of people who did not vote is computed out of the total Brazilian population. If we would focus on the population aged 18 to 59, as is my sample, this share would already lower from 21% to 17%. If we then consider that abstention is higher among uneducated people, since my sample is skewed toward more educated people, this will explain most of the remaining gap.

## Table 1: Samples Characteristics

| | Brazil | Wave 1 | Wave 2 | Wave 3 | Recontacts | Wave 4 | Wave 5 | Wave 6 |
|---|---|---|---|---|---|---|---|---|
| Male | **0.49** | 0.49 | 0.49 | 0.49 | 0.48 | 0.49 | 0.49 | 0.49 |
| 18-29 years old | **0.31** | 0.32 | 0.31 | 0.32 | 0.28 | 0.32 | 0.32 | 0.32 |
| 30-39 years old | **0.27** | 0.28 | 0.29 | 0.28 | 0.29 | 0.28 | 0.28 | 0.28 |
| 40-49 years old | **0.23** | 0.24 | 0.23 | 0.22 | 0.24 | 0.23 | 0.23 | 0.23 |
| 50-59 years old | **0.19** | 0.16 | 0.18 | 0.17 | 0.19 | 0.17 | 0.17 | 0.17 |
| Census Income Group 1 | **0.20** | 0.10 | 0.10 | 0.11 | 0.09 | 0.11 | 0.11 | 0.11 |
| Census Income Group 2 | **0.20** | 0.17 | 0.19 | 0.20 | 0.20 | 0.17 | 0.19 | 0.19 |
| Census Income Group 3 | **0.20** | 0.20 | 0.20 | 0.20 | 0.20 | 0.22 | 0.21 | 0.21 |
| Census Income Group 4 | **0.20** | 0.21 | 0.21 | 0.20 | 0.20 | 0.21 | 0.22 | 0.21 |
| Census Income Group 5 | **0.20** | 0.32 | 0.30 | 0.29 | 0.32 | 0.29 | 0.28 | 0.29 |
| North | **0.09** | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Northeast | **0.27** | 0.28 | 0.27 | 0.28 | 0.29 | 0.28 | 0.28 | 0.28 |
| Center West | **0.08** | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
| Southeast | **0.42** | 0.42 | 0.42 | 0.42 | 0.43 | 0.42 | 0.42 | 0.42 |
| South | **0.14** | 0.13 | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| High-school degree or less | **0.86** | 0.49 | 0.55 | 0.54 | 0.51 | 0.51 | 0.53 | 0.57 |
| College degree or more | **0.14** | 0.51 | 0.45 | 0.45 | 0.49 | 0.49 | 0.46 | 0.43 |
| Employed | **0.70** | 0.81 | 0.81 | 0.81 | 0.83 | 0.82 | 0.78 | 0.79 |
| Unemployed | **0.07** | 0.07 | 0.08 | 0.08 | 0.08 | 0.07 | 0.11 | 0.09 |
| Out of the labor force | **0.23** | 0.12 | 0.10 | 0.12 | 0.10 | 0.12 | 0.11 | 0.13 |
| White | **0.43** | 0.47 | 0.51 | 0.48 | 0.48 | 0.48 | 0.48 | 0.45 |
| Black | **0.09** | 0.12 | 0.09 | 0.11 | 0.11 | 0.12 | 0.12 | 0.13 |
| Mixed | **0.47** | 0.37 | 0.37 | 0.38 | 0.38 | 0.37 | 0.38 | 0.39 |
| Lula voter | **0.39** | 0.53 | 0.40 | 0.44 | 0.45 | 0.44 | 0.39 | 0.42 |
| Bolsonaro voter | **0.37** | 0.47 | 0.46 | 0.45 | 0.45 | 0.42 | 0.44 | 0.38 |
| Invalid or null vote | **0.04** | NA | 0.10 | 0.08 | 0.08 | 0.08 | 0.11 | 0.11 |
| Won't/Didn't vote | **0.21** | NA | 0.03 | 0.03 | 0.02 | 0.07 | 0.05 | 0.08 |
| Sample size | | 1,203 | 501 | 2,001 | 1,213 | 801 | 500 | 3,000 |

*Notes*: This table reports summary statistics for the target population in Brazil, in the first column, and corresponding summary statistics for the various waves of the survey, in the following columns. Population statistics come from the *Pesquisa Nacional por Amostra de Domicílios* (PNAD) *Contínua* conducted by the IBGE in the following years: 2019 for education; 2021 for gender, age, income, region, and race; 2022 for employment. Population statistics on voting come from the *Tribunal Superior Eleitoral* (TSE). Population statistics for gender, age, region, and employment are computed out of the Brazilian population between 18 and 59 old; population statistics for income, education, and race are computed out of the Brazilian population aged 14 or older; population statistics for voting are computed out of the Brazilian population aged 18 or older. All survey statistics are computed out of a sample aged between 18 and 59.

second round.[6] In Wave 4 and 5, conducted after the elections' results, respondents were asked to recall what their expectations were before the election day. These questions were not asked in Wave 6. To elicit their expectations about the election, I asked them what they think is the percent chance that each of the two candidates is going to be elected as president.[7] Respondents had to move a slider to select a number between 0 and 100. To have an alternative but complementary measure, I asked respondents what share of valid votes they expect the two candidates to get. For both measures, respondents were also asked how confident they were with the answers they just provided. I also asked respondents how important these elections are going to be for Brazil's future, if they were surprised with the results of the elections, and the emotions they feel when thinking about the elections.

**Political questions.** Respondents were then asked to express their political affiliation in different ways.[8] First, I asked where they would place themselves on a 10-point scale that goes from extreme left to extreme right. Second, I asked respondents which candidate they would vote for in the second round. If a respondent answered that would not/did not vote or expressed a null vote, they were asked who they would have chosen between Lula and Bolsonaro to allow me to classify all respondents in one of the two groups. To be able to capture the heterogeneity of respondents' support for their candidate, I asked them how strong of a supporter they consider themselves to be on a 10-point scale.

**Affective polarization.** In this block, I measured respondents' affective polarization, which can be defined as people's dislike of the out-group compared to their group, through the feeling thermometer.[9] Respondents were explained that ratings between 0 and 49 degrees mean that they feel unfavorable and cold, with 0 being the coldest, while ratings between 51 and 100 degrees mean that they feel favorable and warm with 100 being the warmest. I then asked respondents to rate their feelings toward Bolsonaro, Lula, Bolsonaro supporters, Lula supporters, and Brazilians in general. This allowed me to have a measure of affective polarization of both the candidates and their supporters.

**Institutions and Democratic Discontent.** Respondents were then asked questions on

[6] Given the polls before the first round it was clear that, if there would have been a second round, it would have been a run-off between Lula and Bolsonaro. This is why in Wave 1 I only asked about who they would expect to win between these two candidates.

[7] I briefly introduce respondents to the concept of percent chance by providing them with a few examples, such as: *2 or 5 percent may indicate "almost no chance"*; *83 percent or so may mean a "very good chance."*

[8] These questions are asked at this point of the survey for two reasons: to not influence their answer to the expectations questions and to allow me to personalize subsequent questions depending on the candidate the respondents support.

[9] To have an alternative measure, I also asked the standard questions to measure social distance (e.g., how comfortable would you be having a close friend supporting the opposite candidate?).

their support for democracy and how much different types of political systems, such as having a strong leader, or military rule would work well in Brazil. They also had to say how acceptable is to resort to violence to express disagreement with the government. In the first five waves, respondents were asked about what they expect would happen after the elections, namely how likely each of the following scenarios were going to be: a peaceful transition of power, protests against the winner of the elections, violent riots, a military coup in favor of the loser of the election.[10] In the last wave, respondents were asked how likely they are to participate in various kind of protests, how much they approve the January 8th Congress attack, and if they would be in favor of a military intervention to make Lula step down.

**Socioeconomic perceptions and expectations.** In this block, I elicited respondent's perceptions and expectations about various socioeconomic factors. For every factor, I asked respondents to tell how it evolved in the last year or its current situation, and then I asked their expectations on how it will evolve in the next 12 months. In Wave 6, I asked respondents their perceptions about 2022, during Bolsonaro's presidency, and about 2023, during Lula's. These socioeconomic factors are: inflation, unemployment, inequality, economic growth, criminality, and political division.

**Other questions.** In the survey, I also elicit respondents' perceptions of the political affiliation of other Brazilians, how homogeneous their interpersonal networks are, and how exposed to different political views they are. Respondents were also asked questions on their preferences toward various redistributive and moral policies. Finally, I also asked questions that allow me to compute measures of trust, morality, moral universalism, identity, and external and internal efficacy.

The survey ends by asking respondents whether they felt it was biased and inviting them to provide open-ended feedback.

# 4 Model

This section presents a simple model where individuals face the choice of turning violent to try to overthrow the government. My main assumption is that individuals' utility is given by the competence of the current president. If they believe a better alternative is available, they will be willing to incur the cost of being violent to change the person in charge of the country. While this framework holds at any moment of the political cycle, I explore what happens when election results occur. With this model, I show how polarized views of candidates'

[10] In the waves before the second round, respondents were asked about their expectations both in case of a Lula's and a Bolsonaro's victory.

competence and expectation shocks enter the individual choice of becoming violent. I then derive the condition that must hold for individuals to turn violent after an election, which I will use to guide the empirical analysis in the rest of the paper.

### 4.1 Environment

Let us assume that every individual $i$ is either a Bolsonaro supporter ($b$) or a Lula supporter ($l$) and has their own perceived competence of Bolsonaro and Lula. Let us denote by $c_B^i$ the perceived competence of Bolsonaro for individual $i$, and by $c_L^i$ the perceived competence of Lula for individual $i$. In this setting, individuals' utility depends on how well the country will fare under the presidency of one of the two candidates. For simplicity, I assume that the utility of the individuals will depend on the candidates' competence $c_C^i$. Every individual assigns a certain probability to Bolsonaro's victory. I denote by $P^i(B)$ such probability for individual $i$. Finally, individuals face the binary choice of accepting violence to express disagreement with the government and express anti-democratic sentiment or not. This choice is captured by the variable $v = \{0, 1\}$.

### 4.2 Choice of Violence

In this setting, a citizen decides to show anti-democratic and violent sentiments to change the person in charge of the country. Showing this sentiment has a cost of $\delta > 0$. Before the election, every individual utility depends on who will win. Bolsonaro supporters have the following utility:

$$U^b(v|B) = c_B^b - \delta v$$
$$U^b(v|L) = (1 - v)c_L^b + v(c_B^b - \delta)$$

**Remark 1.** In case of their candidate's victory, the supporters will not try to change who is in charge even if they decided to be violent before the election. Nonetheless, they have to pay the cost $\delta$ since they have been accepting more violence and/or undermining democracy and its institutions. ▲

**Remark 2.** In this model, I assume that the probability of success in overthrowing the government when they choose to be violent is equal to 1. In Appendix Section A-2.1, I explore an extension of this model where I include the perceived probability of success. ▲

For every $i$, the pre-election expected utility is then given by:

$$U_{Pre}^i(v) = P^i(B)U^i(v|B) + (1 - P^i(B))U^i(v|L) \tag{1}$$

Before the election, for Bolsonaro supporters to choose violence, the following condition must hold:

$$\begin{aligned} v^b_{Pre} = 1 \Leftrightarrow U^b_{Pre}(v=1) > U^b_{Pre}(v=0) \\ \Leftrightarrow (1 - P^b(B))(c^b_B - c^b_L) > \delta \end{aligned} \tag{2}$$

From this condition, we can see that there are two factors influencing Bolsonaro supporters' decision to be more violent before the election. On the one hand, there is their perceived probability of who will win. If $P^b(B)$ is larger, they are less likely to choose violence. The intuition is that if they expect Bolsonaro to remain president, there is no need to be violent. On the other hand, keeping $P^b(B)$ fixed, Bolsonaro supporters are more likely to choose violence the more polarized they are. That is, the larger their perceived gap in competences $(c^b_B - c^b_L)$ is. The reason for this is that the more an individual believes that Bolsonaro is better than Lula, the more willing they will be to pay the cost of becoming violent.

After the election, the state in which Lula wins is realized. Therefore, the condition that must hold for Bolsonaro supporters to choose violence is:

$$\begin{aligned} v^b_{Post} = 1 \Leftrightarrow U^b(v=1|L) > U^b(v=0|L) \\ \Leftrightarrow c^b_B - c^b_L > \delta \end{aligned} \tag{3}$$

Since the election has been decided, Bolsonaro supporters will resort to violence only when their perceived gap between the competence of Bolsonaro and Lula is large enough.

### 4.3 Expectation Shocks

Let us now look into how expectations about the future of the country $(\theta)$ play a role in changing supporters' views toward violence. Before the election, assuming that no violence will occur, the expectations for individual $i$ are given by $\theta^i_{Pre} = P^i(B)c^i_B + (1 - P^i(B))c^i_L$. After Lula's victory, the expectations about Brazil's future will entirely depend on Lula's perceived competence, that is: $\theta^i_{Post} = c^i_L$.
I define *expectation shock* as the difference between individual $i$'s pre- and post-election expectations, that is:

$$\begin{aligned} \Delta\theta^i &= \theta^i_{Post} - \theta^i_{Pre} \\ &= P^i(B)(c^i_L - c^i_B) \end{aligned} \tag{4}$$

Two factors are at play in determining the size and direction of the expectation shock. First, which of the two candidates individual $i$ considers more competent determines whether the expectation shock will be positive or negative. Assuming that $\forall i = l$, $c^i_L > c^i_B$ and $\forall i = b$,

$c_L^i < c_B^i$, I have that $\Delta\theta^i \geq 0 \ \forall i = l$ and $\Delta\theta^i \leq 0 \ \forall i = b$. That is, Lula supporters had a positive expectation shock, while Bolsonaro supporters had a negative one. The difference in perceived competences also affects the magnitude of the expectation shock. The larger the gap, the larger the expectation shock will be. In the extreme case that an individual considers Lula and Bolsonaro equally competent, their expectation shock will be zero since they believe they will do equally good (or equally bad). Finally, the second factor is the expectation of who would win the election. The more an individual expected Bolsonaro to win (high $P^i(B)$), the more they were surprised by the election result, and consequently the larger the expectation shock. In the extreme case that they were sure of Lula's victory ($P^i(B) = 0$), their expectation shock will be zero since they had already internalized whatever outcome you were expecting for the future of Brazil.

**Across Group Comparison.** I now investigate which kind of supporters this framework predicts to experience a larger expectation shock. For simplicity, I consider four groups of supporters: extreme Bolsonaro supporters ($b_e$), moderate Bolsonaro supporters ($b_m$), extreme Lula supporters ($l_e$), and moderate Lula supporters ($l_m$). I assume that stronger supporters are more sure that their candidate is going to win. Therefore, the probabilities of Bolsonaro winning follow the following ordering:

$$1 \geq P^{b_e}(B) > P^{b_m}(B) > P^{l_m}(B) > P^{l_e}(B) \geq 0 \tag{5}$$

Secondly, it is safe to assume that the more an individual supports a candidate, the more likely they are to consider him competent and his opponent incompetent. Therefore, the perceived competences of Lula and Bolsonaro are ranked as follows:

$$c_L^{l_e} > c_L^{l_m} > c_L^{b_m} > c_L^{b_e} \quad \text{and} \quad c_B^{b_e} > c_B^{b_m} > c_B^{l_m} > c_B^{l_e} \tag{6}$$

By combining these rankings with equation (4), I get that the expectation shocks are ranked in the following way:

$$\Delta\theta^{l_e} \lesseqgtr \Delta\theta^{l_m} \geq 0 > \Delta\theta^{b_m} > \Delta\theta^{b_e} \tag{7}$$

The first thing to notice is that for every Bolsonaro supporter, the expectation shock is negative, and its magnitude is increasing in the support strength. On the other hand, while being weakly positive for all Lula supporters, the expectation shock does not follow a clear pattern. First, unlike Bolsonaro supporters, their expectation shock could be zero if they were sure about Lula's victory. Secondly, the magnitude is not related to their support strength. This interesting implication comes from the fact that the two factors determining the expectation shock go in opposite directions as the support strength among Lula supporters increases. While the gap between the two competences is increasing in support strength, the proba-

bility of Bolsonaro winning is instead tending toward zero. This implies that there might be moderate Lula supporters with larger expectation shocks than extreme supporters or the other way around. In Section 5, I will show how the data support this prediction.

**Expectation Shocks and Violence.** As a final step, I now use this framework to understand better which kind of supporters are more likely to become violent. In this section, I focus on Bolsonaro supporters since, as shown in Proposition 3, these are the groups that I expect to become more violent.
Since being accepting of violence is a binary choice, two trivial conditions must hold to have individual $i$ becoming more accepting of it: individual $i$ had to be non-violent before the election ($v^b_{Pre} = 0$) and has to be violent after the election ($v^b_{Post} = 1$). Rearranging conditions (2) and (3), we get that the two following conditions must hold:

$$v^b_{Pre} = 0 \Leftrightarrow \delta > (1 - P^b(B))(c^b_B - c^b_L)$$
$$v^b_{Post} = 1 \Leftrightarrow c^b_B - c^b_L > \delta$$

By combining them and from equation (4) we get the following final condition:

$$(c^b_B - c^b_L) > \delta > (c^b_B - c^b_L) + \Delta\theta^b \tag{8}$$

This entails the following proposition:

**Proposition 1.** *For Bolsonaro supporters, the more negative the expectation shock, the more likely they are to switch from non-violence to violence. Moreover, the gap between the two competences must be sufficiently large, meaning that the switch is more likely to happen among stronger supporters.*

Intuitively, two conditions must hold simultaneously. On the one hand, an individual must believe that the gap between Bolsonaro and Lula's competence is large enough. If they believed who is president would not make much difference, they would not be willing to incur the cost of becoming violent. On the other hand, they also need to negatively update their expectations about the future of Brazil by a considerable amount. For these reasons, the model predicts that there will be an increase in violence only among strong supporters who experienced a large enough negative expectation shock. In Appendix Section A-2.1, I show that including the perceived probability of success in overthrowing the government would strengthen my result. In the next section, I will explore if the data supports these predictions.

# 5 Supporters' Strength and Expectation Shocks

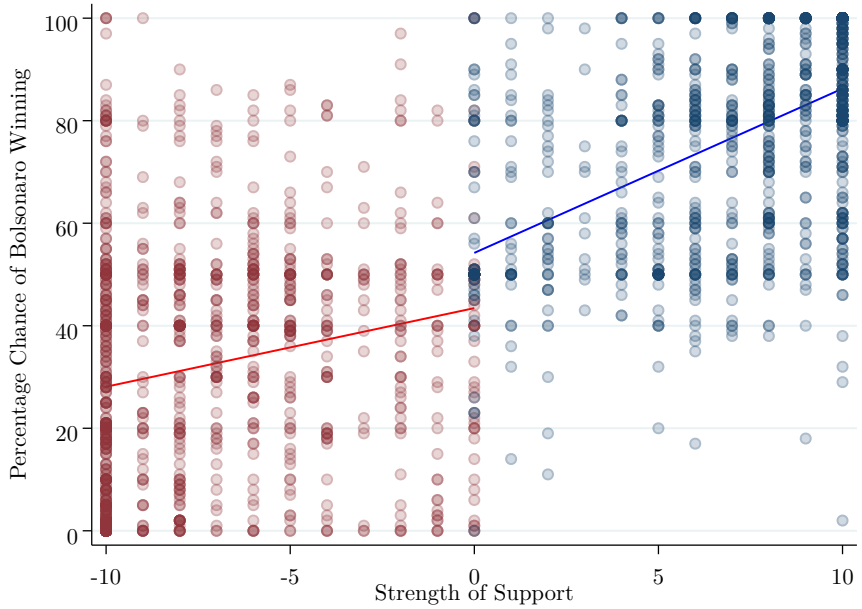
In this section, I describe the expectations of the respondents regarding the election result, their feelings toward the two candidates, the expectation shocks that they experienced, and how these dimensions relate to their level of support. For this descriptive analysis, I focus on the data collected during the third wave of the survey, namely the one conducted just before the second round of the election. For the expectation shocks, I instead rely on the respondents who completed the follow-up survey, as I have to capture the within-respondent variation.

As described in section 3.2, every respondent was first asked if they would vote for Lula or Bolsonaro. Then, they had to report how strong their support for the chosen candidate was on a scale ranging from 0 to 10. The answer to this question defines respondents' support strength. In the subsequent figures, the support strength is reported on the x-axis, going from -10 (maximum support for Lula) to 10 (maximum support for Bolsonaro). Every red dot represents a Lula supporter, every blue dot represents a Bolsonaro supporter. In Figure 2, I show the relationship between support strength and respondents' perceived chance of Bolsonaro winning the election. As can be seen, there is a clear increasing trend where the stronger the support, the more likely Bolsonaro supporters are to believe that their candidate will win. Even if with a flatter slope, the same trend appears among Lula supporters. This might be due to some noise in reporting small probabilities. In Appendix Figure A-4, I report the answers to the same question about Lula's probability of winning, finding a similar trend.

Figures 3a and 3b show how respondents' feelings toward the two candidates relate to their support strength. On the y-axis are reported the values provided to the feeling thermometer question. Respondents were told that ratings between 0 and 49 mean they have unfavorable feelings, while between 51 and 100 mean they have favorable feelings. I use the answers to these questions as a proxy for the perceived competence of the two candidates.[11] A few results emerge from these figures. First, we can see that the feelings toward the supported candidate are increasing in the support strength. Interestingly, voters with low levels of support have, on average, unfavorable feelings toward the candidate they decided to vote for. This finding holds both for Lula and Bolsonaro voters. Two possible complementary reasons can explain this. On the one hand, a two-round system undoubtedly increases the chances that voters will have to vote for a candidate they dislike. On the other hand, for many people, the 2022 Brazilian election has been a choice for the least bad candidate, help-

[11] In Appendix Section A-3, by looking at respondents from Wave 6, I show how the answers provided to the feeling thermometer are highly correlated with respondents' assessment of Lula and Bolsonaro's government performances. This question has been asked only in that wave.

## Figure 2: Probability of Bolsonaro Winning by Strength of Support




*Notes*: The figure shows the dispersion of respondents by strength of support and perceived probability of Bolsonaro winning the election. Variables defined in Appendix Section A-1.1. Respondents from Wave 3. Red dots represent Lula supporters, blue dots Bolsonaro supporters. The red line is a linear fit of Lula supporters, the blue line is a linear fit of Bolsonaro supporters.

ing to explain why so many voters have negative feelings toward both candidates. Figure 3c reports the level of affective polarization by support strength. This measure consists of the difference between the two feeling thermometers previously described. Its value can go from 100 (warmest feelings toward Lula and coldest toward Bolsonaro) to -100 (warmest feelings toward Bolsonaro and coldest toward Lula). A value of 0 means the respondent holds the same feelings for Bolsonaro and Lula. We can see a clear linear trend with a similar slope for Lula and Bolsonaro supporters. It is also interesting to notice how strong supporters reach values close to 100 (or -100), evidence of a very polarized election. Finally, we can see that almost the entirety of the sample is situated in the top left or bottom right quadrant of the figure. This means that almost all Lula voters reported having stronger feelings toward Lula than Bolsonaro, and Bolsonaro supporters reported the opposite. This result is evidence that respondents completed the survey carefully.

The data showed in Figures 2 and 3 matches with the ordering that I assumed in inequality 5 and 6 in the previous section of the paper. The next step is to show that the ranking of the expectation shocks, as presented in inequality 7, holds as well. To do so, I exploit the respondents who took the follow-up survey and look at how their answers to the questions on their expectations changed. More precisely, I use a set of seven questions that ask how optimistic they are about the future of Brazil and their expectations about the economy in general, inflation, finding a job, income inequality, criminality, and political division. Respondents had to select an answer on a five-point Likert scale from "decrease a lot" to "increase a lot." The expectation shock consists of the average of the differences between the post- and pre-election answers to these questions.

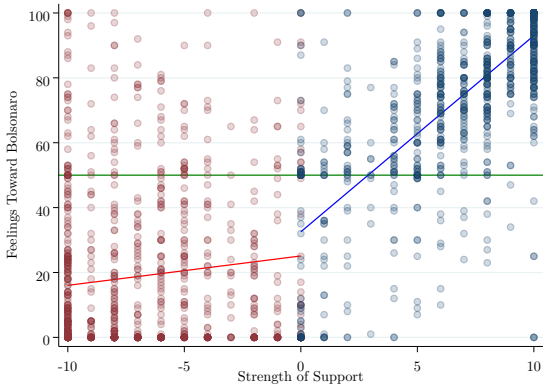
Figure 4 shows how the expectation shock varies depending on the support strength of the respondent. As predicted by the model, among Bolsonaro supporters, the stronger the support, the more negative the expectation shock has been. On the other hand, while, on average, Lula supporters experienced a positive expectation shock, there is no relationship between their support strength and the magnitude of the shock. These results are perfectly in line with inequality 7. Appendix Figure A-5 shows an alternative way of building the expectation shock, where instead of taking the average of the difference of the seven questions, I created a PCA index. The results are indistinguishable. Finally, to ensure one particular outcome was not driving the shock, I report all seven variables separately in Appendix Figure A-6. The same pattern emerges for every variable.

## 6 Election Results' Effects

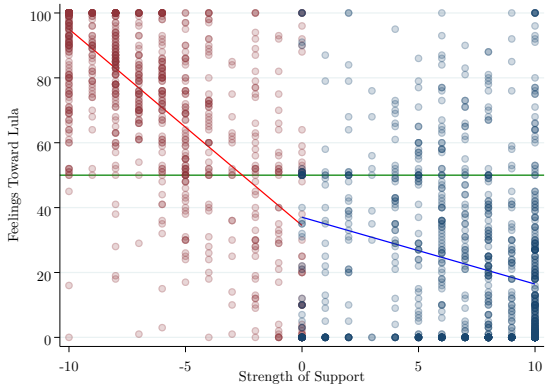
In this section, I explore how Brazilian voters' attitudes toward violence and democratic institutions were affected by the results of the 2022 presidential election. As I am interested

## Figure 3: Feelings Toward Candidates by Strength of Support

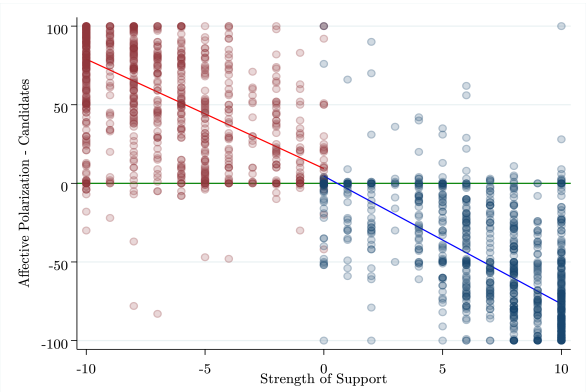
(a) Feelings toward Bolsonaro




(b) Feelings toward Lula

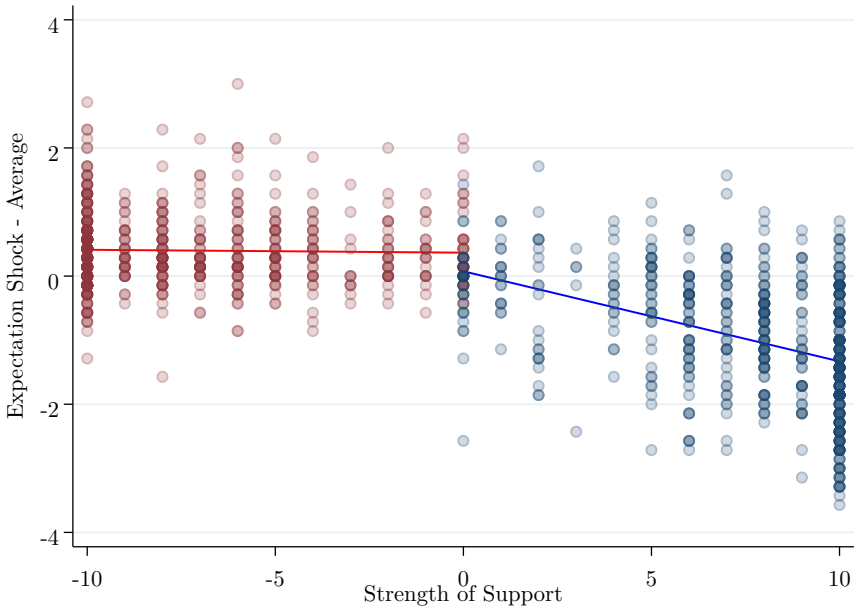



(c) Affective Polarization




*Notes*: The figures show the dispersion of respondents by strength of support and feelings toward the two candidates (subfigure A and B) and their difference (subfigure C). Variables defined in Appendix Section A-1.1. Respondents from Wave 3. Red dots represent Lula supporters, blue dots Bolsonaro supporters. The red line is a linear fit of Lula supporters, the blue line is a linear fit of Bolsonaro supporters.

## Figure 4: Expectation Shock




*Notes*: The figure shows the dispersion of respondents by strength of support and expectation shock. Variables defined in Appendix Section A-1.1. Respondents from Wave 3. Red dots represent Lula supporters, blue dots Bolsonaro supporters. The red line is a linear fit of Lula supporters, the blue line is a linear fit of Bolsonaro supporters.

in studying the effects of an electoral loss, for this analysis I rely on the sample of Bolsonaro respondents who completed the follow-up survey, allowing me to build a two-period panel dataset. In Appendix Section A-4, I replicate this analysis for Lula supporters.

I divide Bolsonaro supporters into four groups depending on their support strength. I call "reluctant supporters" ($r$) those voters with a support strength between 0 and 3 (12.34% of Bolsonaro voters), "moderate supporters" ($m$) those between 4 and 7 (27.04%), "strong supporters" ($s$) those between 8 and 9 (21.05%), and "extreme supporters" ($e$) those who reported a support strength of 10 out of 10 (39.56%).[12]

The main independent variable of interest is my measure of expectation shock that I presented in the previous section and plotted in Figure 4. By construction, the value of this variable can range between 4 and -4. Among the Bolsonaro supporters in the sample, this measure ranges between 1.71 and -3.57, with a median value of -1. To facilitate the interpretation of my results, in the subsequent analysis I standardize this variable to have a standard deviation of 1 and utilize its negative values. My measure is therefore increasing in the negative change to socioeconomic expectations.[13]

The two-period panel data allows me to use the following specification:

$$Y_{it} = \alpha_i + \sum_{g \in G} \beta_g Post_t \times Group_{g,i} \times NegExpShock_i + \sum_{g \in G} \delta_g Post_t \times Group_{g,i} + \varepsilon_{it}$$

where $G = \{e, s, m, r\}$, $\alpha_i$ are the individual fixed effects, $Post_t$ is a dummy taking the value of 1 in the after-election period, $Group_{g,i}$ are dummies taking the value of 1 for every supporter group $g \in G$, and $NegExpShock_i$ is the continuous variable measuring the negative expectation shock experienced by supporter $i$. The parameters of interest are the coefficients $\beta_g$ since they capture the post-election effect of the negative expectation shock on outcome $Y$ for the various groups of supporters.

I start by looking at the effects on the main outcome variables, that is the violent and anti-democratic sentiments, as well as the effects on the expectations of what would happen after the election. I then explore how other outcomes such as polarization, the perceived share of people supporting each candidate, and emotions have been affected by the electoral defeat. After this, I confirm my results by performing additional robustness checks to exclude alternative mechanisms. Finally, by exploiting all the waves of my survey, I provide some descriptive evidence of how persistent these effects are.

[12] In Appendix Section A-5.1, I replicate the analysis by splitting the sample between those above and below the support strength median finding similar results.

[13] In Appendix Section A-5.2, I use a discrete version of the negative expectation shock finding similar results.

### 6.1 Effects on Democratic Discontent

The electoral defeat significantly affected the violent and anti-democratic sentiment of Bolsonaro supporters. As predicted by Proposition 1, these effects are present only among extreme Bolsonaro supporters and are increasing in the size of the negative expectation shock.[14]

In column 1 of Table 2, we can see that, after the election result, the more negative the expectation shock, the more acceptant of violence Bolsonaro supporters became (as measured with agreement with the statement *"Violence is sometimes an acceptable way for Brazilians to express their disagreement with the government"*). This effect is entirely driven by the extreme supporters.

In columns 2 through 5, I report the effect on supporters' attitudes toward democracy. These attitudes were measured in two distinct ways. First, respondents had to express their agreement with the following statement: *"Democracy may have problems but it is better than any other form of government"* (column 2). Then, they had to rate how good various political systems would be for Brazil from very bad to very good. These political systems were: a democratic political system (column 3); having a strong leader who does not have to bother with parliament and elections (column 4); and having the army rule the country (column 5). From these results, it emerges that, after the election result, extreme supporters who experienced a larger negative expectation shock started to look democracy in a less favorable way and an army rule in a more favorable way. On the bright side, even if democratic discontent increased, democracy remains the most favorably viewed political system. This result is supported by the null result from column 2 and by the fact that, after the election result, I observe that 89% of extreme supporters consider democracy to be a good political system for Brazil while only 80% believe the same about army rule (values reported in Appendix Table A-5).[15]

In the last three columns of Table 2, I show how people's views on what would happen in the aftermath of the elections were affected by its results. Respondents were asked to report how likely they thought mass protests against Lula (column 6), violent riots (column 7), and a military coup in favor of Bolsonaro (column 8) would have been in case of Lula's victory. I find that extreme supporters who experienced a larger negative expectation shock became more likely to believe that violent riots and a military coup were going to happen. While these questions are just capturing their expectations and not their willingness to participate

[14] In Appendix Section A-5.3, I explore the heterogeneous effects by groups of supporters, excluding the negative expectation shock.

[15] While this number can appear extremely high for a democracy, two things are worth noticing. First, given the close ties between Bolsonaro and the army, it is not surprising that his extreme supporters view a possible army rule in a very favorable way. Second, Brazil experienced years of stability and growth during the years of the military dictatorship (1964-1985), leaving a sense of nostalgia in many Brazilians on both sides of the political spectrum.

nor their hope that they will happen, we can imagine that these three aspects are quite correlated, especially among extreme supporters who, as we just saw, became more accepting of violence and more anti-democratic.

### 6.2 Effects on Other Attitudes and Perceptions

In this section, I explore how polarization, perceived share of supporters, and emotions changed after the election results. Since expectation shocks do not play a role in this context, I only look at the heterogeneous effects on the various supporter groups. To do so, I rely on a simpler specification:

$$Y_{it} = \alpha_i + \sum_{g \in G} \delta_g Post_t \times Group_{g,i} + \varepsilon_{it}$$

where $G = \{e, s, m, r\}$, $\alpha_i$ are the individual fixed effects, $Post_t$ is a dummy taking the value of 1 in the after-election period, and $Group_{g,i}$ are dummies taking the value of 1 for every supporter group $g \in G$. These results are reported in Table 3.

As shown in Figure 3c, affective polarization is very high in Brazil, especially among stronger supporters. Does an electoral defeat exacerbate this problem, or does it attenuate it? We could expect that supporters, especially the strongest ones, dislike the opposite candidate and his supporters even more after losing an election. Surprisingly, I find the opposite result in columns 1 and 2 of Table 3. Extreme supporters' affective polarization toward the candidates and their supporters decreased significantly after the election. While this is good news for society, it is nonetheless important to notice that the affective polarization level among extreme supporters remains extremely high.

As previously discussed, during the electoral campaign, Bolsonaro cast doubt on Brazil's elections, claiming that electoral fraud would certainly be committed, especially in case of his defeat. My data suggests that his supporters have accepted this view. In fact, by looking at the respondents who completed the survey right after the election result (Wave 4), I find that 47% of Bolsonaro supporters reported that they believe a lot or completely that Lula committed electoral fraud, and 61% believe that Lula's victory was probably or certainly illegitimate. Nonetheless, in columns 3 and 4, I show that all Bolsonaro supporters correctly updated their perception of how many voters of the two candidates are present in their city.[16] After the electoral defeat, the perceived share of Lula supporters increased while the perceived share of Bolsonaro supporters decreased. On the one hand, this does not necessarily contradict the view that the election was rigged. People can still believe that Lula is not the legitimate winner while admitting they underestimated the share of his supporters. On

[16]The only exception is for the "reluctant supporters," probably because their perceptions were already accurate.

# Table 2: Election Effects on Democratic Discontent

| | Agreement violence acceptable to express disagreement | Agreement democracy best form of government | Belief good political system for Brazil: | | | After Lula's victory: | | |
|---|---|---|---|---|---|---|---|---|
| | | | Democracy | Strong Leader | Army Rule | Mass Protests | Violent Riots | Military Coup |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Panel A - Bolsonaro Voters by Support Strength** | | | | | | | | |
| Pre-election extreme supporters mean | 0.10 | 0.03 | 0.02 | 0.29 | 0.40 | 0.20 | 0.21 | 0.19 |
| Pre-election strong supporters mean | -0.01 | 0.02 | 0.05 | -0.04 | -0.05 | -0.05 | -0.16 | -0.11 |
| Pre-election moderate supporters mean | 0.04 | -0.06 | -0.09 | -0.23 | -0.18 | -0.19 | -0.16 | -0.11 |
| Pre-election reluctant supporters mean | -0.38 | 0.00 | 0.04 | -0.35 | -0.82 | -0.13 | -0.05 | -0.17 |
| Observations | 545 | 546 | 544 | 542 | 544 | 544 | 542 | 539 |
| **Panel B - All Bolsonaro Voters** | | | | | | | | |
| Post-Election × Neg Exp Shock | 0.12*** | -0.09** | -0.09** | -0.00 | 0.08** | 0.05 | 0.03 | 0.15*** |
| | (0.04) | (0.05) | (0.05) | (0.05) | (0.04) | (0.05) | (0.05) | (0.05) |
| Post-Election | 0.03 | 0.06 | 0.07 | -0.13** | 0.02 | 0.09 | 0.14** | -0.05 |
| | (0.07) | (0.07) | (0.07) | (0.06) | (0.05) | (0.07) | (0.07) | (0.06) |
| **Panel C - Post-Election Effect on:** | | | | | | | | |
| Extreme Bolsonaro Supporter × Neg Exp Shock | 0.19*** | -0.06 | -0.15** | -0.04 | 0.15** | 0.05 | 0.17* | 0.29*** |
| | (0.07) | (0.07) | (0.07) | (0.08) | (0.07) | (0.09) | (0.09) | (0.08) |
| Strong Bolsonaro Supporter × Neg Exp Shock | 0.06 | -0.03 | 0.08 | 0.09 | 0.05 | 0.04 | -0.11 | 0.14 |
| | (0.12) | (0.11) | (0.15) | (0.11) | (0.09) | (0.13) | (0.12) | (0.09) |
| Moderate Bolsonaro Supporter × Neg Exp Shock | 0.04 | -0.07 | -0.11 | 0.00 | 0.01 | -0.09 | -0.05 | 0.02 |
| | (0.11) | (0.09) | (0.10) | (0.10) | (0.07) | (0.09) | (0.09) | (0.09) |
| Reluctant Bolsonaro Supporter × Neg Exp Shock | -0.03 | -0.40* | 0.06 | -0.06 | -0.11 | 0.38** | -0.02 | -0.01 |
| | (0.12) | (0.22) | (0.12) | (0.12) | (0.12) | (0.17) | (0.17) | (0.14) |
| Extreme Bolsonaro Supporter | -0.06 | -0.01 | 0.14 | -0.03 | -0.05 | 0.09 | -0.12 | -0.29** |
| | (0.14) | (0.12) | (0.14) | (0.14) | (0.13) | (0.17) | (0.15) | (0.14) |
| Strong Bolsonaro Supporter | 0.17 | 0.08 | -0.13 | -0.40*** | 0.05 | 0.15 | 0.31* | -0.09 |
| | (0.16) | (0.16) | (0.22) | (0.13) | (0.12) | (0.18) | (0.16) | (0.11) |
| Moderate Bolsonaro Supporter | 0.03 | -0.04 | 0.09 | -0.10 | 0.00 | 0.19* | 0.23* | 0.12 |
| | (0.13) | (0.11) | (0.12) | (0.10) | (0.08) | (0.10) | (0.12) | (0.10) |
| Reluctant Bolsonaro Supporter | 0.02 | 0.22 | 0.08 | -0.05 | 0.13 | -0.10 | 0.18 | 0.02 |
| | (0.09) | (0.14) | (0.10) | (0.11) | (0.08) | (0.13) | (0.14) | (0.11) |
| Observations | 1090 | 1088 | 1084 | 1088 | 1085 | 1090 | 1087 | 1082 |

*Notes*: All dependent variables are continuous variables (Z-scores) defined in Appendix Section A-1.1. Panel A reports the mean of the dependent variables for extreme, strong, moderate, and reluctant Bolsonaro supporters before the election result (Wave 3). Panel B and C report the coefficients of a fixed-effects regression with cluster–robust standard errors within individual. In Panel B, the specification includes the interaction between "Post-Election" and the continuous negative expectation shock ("Neg Exp Shock"). In Panel C, the specification includes all triple interactions between "Post-Election," the Bolsonaro supporter groups ("Extreme," "Strong," "Moderate," "Reluctant supporter") and the continuous negative expectation shock ("Neg Exp Shock"), and all double interactions between "Post-Election" and the Bolsonaro supporter groups. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

## Table 3: Election Effects on Polarization, Perceptions, and Emotions

| | Affective Polarization | | Perceived share of | | When thinking about the election feel a lot of | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Candidate | Supporter | Lula supporters in their city | Bolsonaro supporters in their city | Hope | Joy | Enthusiasm | Fear | Indignation | Sadness | Pride |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| **Panel A - Bolsonaro Voters by Support Strength** | | | | | | | | | | | |
| Pre-election extreme supporters mean | 0.82 | 0.68 | 0.40 | 0.81 | 0.83 | 0.68 | 0.71 | 0.41 | 0.44 | 0.22 | 0.64 |
| Pre-election strong supporters mean | 0.62 | 0.46 | 0.43 | 0.70 | 0.70 | 0.44 | 0.43 | 0.37 | 0.45 | 0.30 | 0.37 |
| Pre-election moderate supporters mean | 0.38 | 0.27 | 0.46 | 0.69 | 0.43 | 0.26 | 0.23 | 0.47 | 0.40 | 0.29 | 0.25 |
| Pre-election reluctant supporters mean | 0.13 | 0.04 | 0.55 | 0.55 | 0.26 | 0.15 | 0.15 | 0.43 | 0.59 | 0.44 | 0.10 |
| Observations | 529 | 530 | 541 | 545 | 546 | 546 | 546 | 546 | 546 | 546 | 546 |
| **Panel B - Post-Election Effect on:** | | | | | | | | | | | |
| Extreme Bolsonaro Supporter | -0.07*** | -0.07*** | 0.06*** | -0.05*** | -0.62*** | -0.58*** | -0.62*** | 0.27*** | 0.41*** | 0.55*** | -0.54*** |
| | (0.02) | (0.02) | (0.02) | (0.01) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| Strong Bolsonaro Supporter | -0.04 | -0.03 | 0.05** | -0.06*** | -0.57*** | -0.37*** | -0.35*** | 0.23*** | 0.29*** | 0.30*** | -0.30*** |
| | (0.03) | (0.03) | (0.02) | (0.02) | (0.05) | (0.05) | (0.05) | (0.05) | (0.06) | (0.06) | (0.05) |
| Moderate Bolsonaro Supporter | -0.02 | -0.01 | 0.05*** | -0.05*** | -0.31*** | -0.20*** | -0.17*** | 0.18*** | 0.21*** | 0.17*** | -0.18*** |
| | (0.02) | (0.03) | (0.02) | (0.02) | (0.05) | (0.04) | (0.04) | (0.05) | (0.05) | (0.05) | (0.04) |
| Reluctant Bolsonaro Supporter | 0.04 | 0.05** | -0.00 | -0.01 | -0.09 | -0.07 | -0.10** | -0.06 | -0.15** | -0.03 | -0.03 |
| | (0.03) | (0.03) | (0.03) | (0.02) | (0.06) | (0.05) | (0.05) | (0.07) | (0.06) | (0.07) | (0.04) |
| Observations | 1060 | 1065 | 1085 | 1088 | 1090 | 1089 | 1085 | 1090 | 1088 | 1088 | 1090 |

*Notes*: The dependent variables in columns 1-4 are continuous variables defined in Appendix Section A-1.1. The dependent variables in columns 5-11 are indicator variables defined in Appendix Section A-1.1. Panel A reports the mean of the dependent variables for extreme, strong, moderate, and reluctant Bolsonaro supporters before the election result (Wave 3). Panel B reports the coefficients of a fixed-effects regression with cluster–robust standard errors within individual. This specification includes all interactions between "Post-Election," and the Bolsonaro supporter groups ("Extreme," "Strong," "Moderate," "Reluctant supporter"). Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

the other hand, it could be that certain respondents stay stuck with their opinion that the election was rigged for partisan reasons. However, if asked differently (as through their perceived share of supporters), they are fine admitting that Lula received the largest share of votes.

As the 2022 presidential election has been very heartfelt, the emotional reaction to its results is a part of the story that cannot be omitted. [17] In all survey waves, respondents were also asked to report how much they felt a range of emotions when thinking about the 2022 presidential election. In columns 5 through 12 of Table 3, I show that the electoral defeat led to a considerable drop in the share of supporters feeling positive emotions (hope, joy, enthusiasm) and an increase in the share feeling negative emotions (fear, indignation, sadness) and pride. It is interesting to notice how the magnitude of these effects is increasing in the strength of support, going from a mostly null effect on reluctant supporters to extreme supporters experiencing, for example, a 150% increase in sadness and an 87% drop in enthusiasm. These heterogeneous effects led to a convergence to the same level of every emotion for all supporters, as I found by combining the pre-election levels with the post-election effects.

[17] 80.61% of my sample from Wave 3 reported that this election was important or extremely important for the future of Brazil.

### 6.3 Alternative Mechanisms

One concern that can be raised from previous results is that expectation shocks are highly correlated with other perceptions and beliefs. First, I showed how the magnitude of the expectation shock is driven by the affective polarization, which captures the gap in the two candidates' competences, and by the ex-ante perceived probability of victory. These relations already lead to two alternative mechanisms. First, it could be that highly polarized people are more likely to react violently to an electoral defeat. Alternatively, I could be capturing the effect of a surprise shock rather than an expectation shock. A very unexpected defeat could increase democratic discontent, independently of their expectations about the future. Second, I find that, after the election result (Wave 4), 83% of extreme Bolsonaro supporters believe that Lula's victory is probably or certainly illegitimate. Therefore, it could be that the post-election increase in violence is caused by the belief that the election was stolen. Finally, in the previous section, I showed how the electoral defeat not only negatively affected people's expectations but also greatly affected their emotions, particularly extreme supporters'. Could it then be that the increase in democratic discontent is driven by an emotional shock rather than a sharp change in their expectations?

These alternative stories are not mutually exclusive. It is not hard to believe that they all play a role in increasing the post-election democratic discontent among extreme supporters. Nonetheless, it is essential to understand which is the dominant mechanism. To do so, I use the recontact sample and focus on extreme Bolsonaro supporters. In Table 4, I regress the change in the three outcome variables affected by the expectation shock (acceptance of violence, support for democracy, and army rule) on the various alternative mechanisms presented above while controlling for individual-level characteristics. From the first three columns, it emerges that the negative expectation shock is the only variable significantly affecting the change in acceptance of violence and support for army rule among extreme supporters. While the effect on the change of support for democracy is insignificant, the coefficient goes in the right direction and is the largest in magnitude. In column 4, I build a PCA index including the previous three variables and find that the negative expectation shock is the only variable affecting these changes. From these results, the alternative stories seem unlikely to play an equally important role.

In Appendix Section A-5.4, as an additional robustness check, I replicate Table 2 by interacting the election effect with probability of victory (Table A-7), affective polarization (Table A-8), and the legitimacy of the election (Table A-9), rather than with the negative expectation shock. While the polarization level and the belief that the election has not been legitimate seem to have an effect in making extreme supporters more violent, the results are less clear and less significant, confirming, therefore, the findings from Table 4. These results are also going to be confirmed by the experiment that I will discuss in Section 7.

## Table 4: Effect of Alternative Mechanisms

| | Extreme Bolsonaro Supporters | | | |
|---|---|---|---|---|
| | Violence Acceptable to Express Disagreement | Good Political System for Brazil | | Index Democratic Discontent |
| | | Democracy | Army Rule | |
| | (1) | (2) | (3) | (4) |
| Probability of victory | -0.01 | 0.02 | -0.11 | -0.09 |
| | (0.08) | (0.08) | (0.07) | (0.08) |
| Affective polarization - Candidate | 0.12 | 0.11 | -0.04 | 0.05 |
| | (0.08) | (0.08) | (0.07) | (0.08) |
| Legitimacy of Lula's victory | 0.04 | 0.04 | -0.03 | 0.00 |
| | (0.07) | (0.07) | (0.07) | (0.07) |
| Negative Expectation Shock | 0.15* | -0.13 | 0.23*** | 0.27*** |
| | (0.08) | (0.09) | (0.08) | (0.08) |
| Negative Emotional Shock | -0.10 | -0.08 | -0.10 | -0.14 |
| | (0.09) | (0.08) | (0.08) | (0.09) |
| Observations | 206 | 205 | 203 | 202 |
| $R^2$ | 0.146 | 0.121 | 0.150 | 0.157 |

*Notes*: The dependent variables in columns 1-3 are continuous variables (Z-scores) defined in Appendix Section A-1.1. The dependent variables in column 4 is an index defined in Appendix Section A-1.2. Independent variables input as Z-scores. All regressions include only extreme Bolsonaro supporters. All regressions include controls for gender, age group, race, income group, employment status, education, religion, whether on welfare, and macro-region fixed effects. Coefficients not reported due to space constraints. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

### 6.4 Persistence

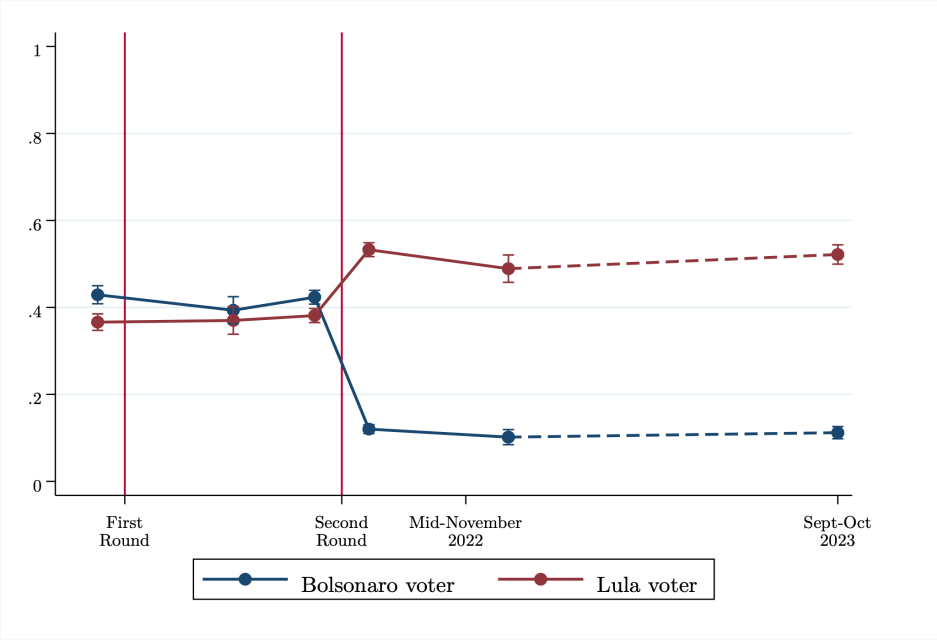
Given the important role that the negative shock to expectations had in increasing democratic discontent, it is crucial to understand how persistent this effect may be. On the one hand, it might be that this is just a temporary reaction in the heat of the moment given by the disappointment of having lost the election. On the other hand, it may be something more long-lasting. If the latter is the case, as my evidence suggests, this would be a more concerning result.

I rely on the fifth and sixth survey waves to answer this question. This data allows me to look at how respondents' answers evolved after three weeks and after one year of the election.[18] As shown in Figure 5, the sharp drop Bolsonaro supporters experienced in their expectations is long-lasting. Even after one year, they are equally likely to believe that Brazil will get worse in the future. Appendix Figure A-7 reports the time trend for every socioeconomic expectation used, and the same result emerges from every variable.

A similar result emerges if we look at respondents' emotions when thinking about the 2022 election, as shown in Figure 6. While negative emotions among Bolsonaro supporters appear to have been on a downward trend (Panel B of Figure 6), they remain higher than

[18]Given the impossibility of re-contacting the same respondents after weeks, even more after a year, I rely on different batches of respondents.

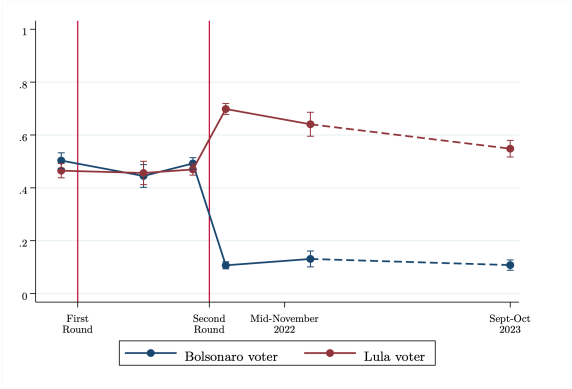
## Figure 5: Average Expectations Across Time



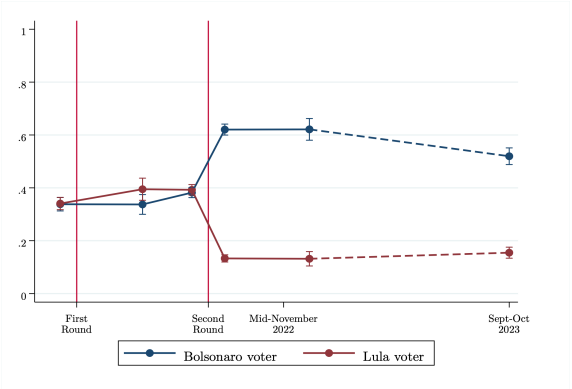

*Notes*: The figure shows, for all six waves, the average level of expectations for Bolsonaro and Lula supporters with its associated 90% confidence interval. Variable defined in Appendix Section A-1.1. The two vertical red lines represent the two election's rounds.

Figure 6: Average Emotions Across Time

(a) Positive Emotions




(b) Negative Emotions




*Notes*: The figures shows, for all six waves, the average level of positive and negative emotions for Bolsonaro and Lula supporters with its associated 90% confidence interval. Variable defined in Appendix Section A-1.1. The two vertical red lines represent the two election's rounds.

before the election results. Positive emotions have instead remained as low as right after the previous year's elections (Panel A of Figure 6). These results are also not driven by a particular set of emotions, as can be seen in Appendix Figure A-8.

While this cannot prove that violent and anti-democratic sentiments are as persistent, the fact that their primary determinant (socioeconomic expectations) and a highly correlated outcome (emotions) are is supportive evidence that this may be the case. In any case, it is important to note that persistent low expectations and negative emotions could be used to incite violent and anti-democratic behavior among Bolsonaro supporters. Such behavior could lead to events similar to those that occurred on January 8th, 2023.

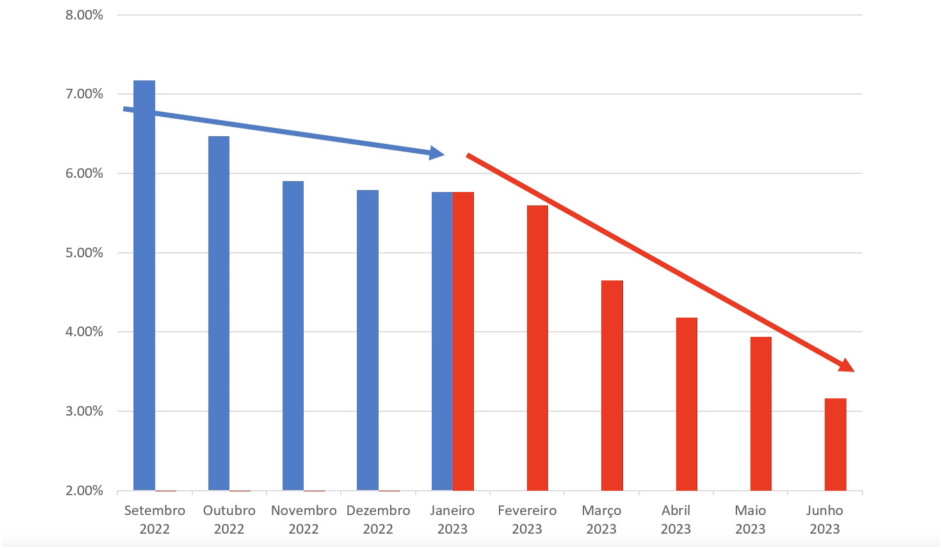
# 7 Experimental Effects of Information on the Economy

To better test the mechanism identified by the electoral outcome, I designed a survey experiment that causally identifies the role that a change in the expectations about the economy has on violent and anti-democratic attitudes. The experiment was conducted between September and October 2023 on a sample of 3,000 respondents during an additional survey wave. Below, I describe the treatment in detail and present the experimental results.

## 7.1 The Treatment

In Wave 6 of the survey, respondents were randomly assigned to watch a short video (35 seconds) showing how inflation decreased between September 2022 and June 2023 (see Figure 7). In this treatment, I highlight how, during the last months of Bolsonaro's presidency, the inflation rate was decreasing very slowly, but once Lula became president, it started to

FIGURE 7: TREATMENT - INFLATION DECREASE




*Notes*: Data from the Brazilian Institute of Geography and Statistics (IBGE).

decrease at a higher rate.

This treatment, designed to change respondents' economic expectations about the future, allows me to test how different groups of supporters react to an upward adjustment of their expectations.[19] I hypothesize that a treatment making respondents more optimistic about Brazil's future would make them more satisfied with Brazil's current government. This effect would then make respondents less likely to hold violent and anti-democratic sentiments. In the next subsection, I present my model predictions for the treatment effect more formally.

## 7.2 Model Prediction

Given that Lula is the current president of Brazil, the only condition determining Bolsonaro supporters' violence is the following:

$$v^b = 1 \Leftrightarrow (c_B^b - c_L^b) > \delta$$

The treatment showing how inflation has decreased provides positive information about the economy. A better perception of the economy should then increase $c_L^b$. This increase makes the condition harder to hold, meaning that respondents should become less likely to choose violence.

To explore whether a particular kind of supporter is more likely to be affected by the

[19] I designed a second treatment to test the effect of a downward adjustment to respondent's expectations, but the information provided was not internalized as negative. I discuss the findings of this second treatment in Appendix Section A-7.2.

treatment, I have to look at the conditions that must hold to observe a switch from violence to non-violence. More precisely, I need to have violence in the control group and non-violence in the treated group. Therefore, the following two conditions must hold:

$$v_C^b = 1 \Leftrightarrow (c_{B;C}^b - c_{L;C}^b) > \delta$$
$$v_T^b = 0 \Leftrightarrow \delta > (c_{B;T}^b - c_{L;T}^b)$$

By combining them, I reach the following condition:

$$(c_{B;C}^b - c_{L;C}^b) > \delta > (c_{B;T}^b - c_{L;T}^b)$$

The left-hand side of the inequality is more likely to hold among stronger supporters, but the right-hand side entirely depends on the strength of the first-stage effect of the treatment in changing $c_B^b$ or $c_L^b$. For this reason, while the treatment is more likely to work on extreme supporters, given the uncertainty behind the intensity of the first-stage effect, I cannot clearly predict which group will be more affected. Therefore, from now on, I will not distinguish between supporter groups.

### 7.3 Experiment Results

Table 5 reports the effects of the treatment on the main outcomes of interest by Bolsonaro and Lula respondents separately ("T × Bolsonaro Supporter" and "T × Lula Supporter"). In Appendix Section A-7.1, I report the treatment effects on additional outcomes.

**First-stage effects.** The information treatment has significant first-stage effects. In columns 1 and 2, it can be seen that treated respondents are more likely to say that inflation decreased both in 2022, under Bolsonaro, and in 2023, under Lula. Providing positive news on how inflation decreased makes respondents also more optimistic that it will keep decreasing in the future (column 3). Interestingly, these effects are very significant among both Lula and Bolsonaro supporters and with a considerable magnitude among the latter (113% on the expectation about future inflation). This strong result among Bolsonaro supporters is not obvious since, as shown in other studies with similar treatments, positive information perceived as partisan often backfires. Moreover, this information significantly increased the socioeconomic expectations of both Lula and Bolsonaro supporters (column 4).[20] Finally, it is worth noticing how the treatment significantly increased the grade Lula supporters assigned to the first months of Lula's presidency and their expectations about it. Among Bolsonaro supporters, while positive, this effect is not significant (columns 2 and 3, Appendix Table

[20] In Appendix Tables A-11 and A-12, I show the effects on every single component of the socioeconomic expectations index.

## Table 5: Treatment Effects - Inflation Decrease

| | Inflation | | | Indices | | | | |
|---|---|---|---|---|---|---|---|---|
| | decreased in 2022 | decreased in 2023 | will decrease in future | Socioeconomic Expectations | Violent Protests | Violence Acceptance | Support Military | Support Democracy |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Descriptive Statistics (control group only)** | | | | | | | | |
| Bolsonaro supporters mean | 0.30 | 0.13 | 0.08 | -1.48 | 0.23 | 0.41 | 0.76 | -0.20 |
| Lula supporters mean | 0.20 | 0.58 | 0.54 | 1.14 | -0.11 | -0.34 | -0.67 | 0.17 |
| Observations | 878 | 878 | 878 | 876 | 861 | 877 | 869 | 872 |
| **Treatment Effects - Inflation Decrease** | | | | | | | | |
| T × Bolsonaro Supporter | 0.09*** | 0.25*** | 0.09*** | 0.26*** | -0.21** | -0.06 | -0.03 | 0.03 |
| | (0.03) | (0.03) | (0.02) | (0.10) | (0.10) | (0.09) | (0.07) | (0.09) |
| T × Lula Supporter | 0.12*** | 0.23*** | 0.13*** | 0.44*** | 0.03 | -0.09 | -0.04 | 0.10 |
| | (0.03) | (0.03) | (0.03) | (0.09) | (0.08) | (0.06) | (0.06) | (0.07) |
| Observations | 1650 | 1650 | 1650 | 1645 | 1623 | 1649 | 1636 | 1640 |
| $R^2$ | 0.069 | 0.299 | 0.318 | 0.564 | 0.094 | 0.206 | 0.460 | 0.114 |

*Notes*: The dependent variables in columns 1-3 are indicator variables defined in Appendix Section A-1.1. The dependent variables in columns 4-8 are indices defined in Appendix Section A-1.2. First two rows report the mean of the dependent variables for respondents who saw no treatment video separately for Bolsonaro and Lula supporters. The bottom panel reports the treatment effects of the inflation decrease video interacted with the respondent's political affiliation ("T × Bolsonaro Supporter" and "T × Lula Supporter") relative to the omitted category (no video). All regressions include controls for gender, age group, race, income group, employment status, education, religion, whether on welfare, strength of support, and macro-region fixed effects. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A-11).

**Second-stage effects.** To study the treatment effect on democratic discontent, I build four different indices capturing various aspects of it: the propensity to attend violent protests if the economy starts to worsen, the acceptance of violence to express disagreement with the government, the support for military rule, and the support for democracy. The treatment effects on these four indices can be seen in columns 5 through 9 of table 5.[21]

For Lula supporters, the treatment does not have any second-stage effect. While I observe strong first-stage effects, their perceptions and expectations were already very high. This may be why I do not find an effect on their democratic discontent (if anything, they seem to become more supportive of democracy and less tolerant of violence).

Conversely, Bolsonaro supporters become significantly less willing to attend violent protests. While I do not find significant effects on the other indices, the coefficients all go in the right direction. The small second-stage effect can be explained by the fact that, while the treatment positively updated the perceptions and expectations about inflation of all respondents, this information was not strong enough to change Bolsonaro supporter's views of Lula's

[21] The treatment effects on the single variables composing the indices can be found in Appendix Table A-10.

government significantly. This might explain why the treatment did not significantly affect deeper preferences, such as support for the military. Nonetheless, these results confirm my previous finding that expectations about the economy affect people's propensity to violence and democratic discontent.

# 8 Conclusion

This paper leverages large-scale survey data collected during the 2022 Brazilian presidential election to study how democratic discontent is affected by the results of an uncertain and polarizing election. By surveying a large sample of respondents right before and after the election result, I observed how their expectations and attitudes changed in a very narrow time frame. Since more extreme supporters were more confident of their candidate's chances of winning, they held very high expectations about Brazil's future. Moreover, the stronger their support, the larger their perceived gap between the two candidates' competence. For these reasons, when Lula won the election, extreme Bolsonaro supporters experienced a very large negative shock to their expectations about the future of their country. What I find is that this negative expectation shock is the reason behind the increase in their violent and anti-democratic sentiments.

This result adds a rational element to the interpretation of the post-election violent events happening more frequently in recent years. Supporters who became more anti-democratic and violent did not do so just because they lost or were angry. They became more discontent with democracy because they became more concerned with the future of their country.

However, what can be done to reduce these expectation shocks? As highlighted by the model, two factors are at play. On the one hand, we have the expectations of who will win. As shown in the data, even if the election was extremely close, strong supporters on both sides of the political spectrum were convinced that their candidate would win. Trusting the polls and not casting doubt on the electoral process should lead to more realistic expectations about the election result. On the other hand, we have extremely high affective polarization. By believing that only their supported candidate can save the country, while the opponent would lead it to ruin, voters' expectations about the country's future performance will be extremely different depending on who will win. This highlights another ill-fated consequence of polarization. Not only does polarization lead to more tribal and dysfunctional politics, but increasing the perceived stakes of an election will also increase the likelihood of a violent reaction in its aftermath. By avoiding the demonization of the political opponents, voters' expectations will not rely much on who wins an election, reducing the risk of post-electoral violence.

My results also highlight the critical role that a healthy economy plays in sustaining good institutions. Not only did I show that the abrupt change in socioeconomic expectations after

the election led to an increase in violent and anti-democratic sentiment, but in the experimental part of the paper, I provided additional evidence of the role of economic expectations. Indeed, by providing good economic news, I managed to decrease respondents' democratic discontent. This result has important implications that extend beyond the election period. Economic indicators are double-edged swords. On the one hand, providing good economic outcomes can help restore confidence in democracy. On the other hand, when faced with negative economic outcomes, voters' discontent with democracy can increase even further. Future work should dig deeper into how people's views on democracy are shaped by their perceptions about the economy.

While this paper follows in the footsteps of a rich literature in economics and political science that exploits large-scale survey data, it is the first to exploit this method to measure within-individual changes in attitudes, beliefs, and expectations during an election and how they are affected by its result. Given the rise of democratic discontent and polarization in many democracies, it is likely that we will witness more instances of post-election violence in the future. These future events could have even more severe and long-lasting consequences than those caused by the attacks in Washington, D.C., and Brasilia. For this reason, it is important for future research to utilize this survey method to examine elections in other countries. In addition to shedding light on the causes of rising democratic discontent in other cultures and societies, such research may help us identify effective interventions to address these threats to democracy.

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