Financial Markets and Mass Political Attitudes: Evidence from the 2022 Brazilian Election*

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Abstract

How do financial market outcomes affect mass attitudes toward election candidates? Elections can generate worries among professional investors over concerns about changes in government policy, especially in emerging and frontier market countries. While many analyses examine how markets react to elections and government change, less attention has been paid to whether and how financial market concerns around elections may shape mass preferences over candidates. We examine two channels through which financial markets could affect mass attitudes and vote choices: one based on voters' material interests and the other based on elite cues deriving from financial investors' responses to politics. We explore these mechanisms using data from an original survey experiment fielded during the 2022 Brazilian presidential election campaign.

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1 Introduction

Countries in the Global South often depend on international capital markets. Foreign direct investment offers the promise of technological upgrading, access to global supply chains and wage premiums. Shorter-term portfolio inflows can increase the resources available to domestic financial institutions and non-bank firms as well as to governments. Capital account liberalization has therefore been an attractive policy choice for many governments.[1] At the same time, capital mobility exposes countries in the Global South to risks of economic crisis and capital flight. Even in non-crisis periods, financially open countries are exposed to global market forces. A significant part of the pricing of capital is driven by regional and global, rather than country-specific, factors (Brooks, Cunha, and Mosley, 2015; Mosley, 2003*a*; Miranda-Agrippino and Rey, 2020; Wibbels, 2006).

A large literature therefore has debated the extent to which structural dependence on capital limits governments' autonomy (e.g. Campello, 2015; Freeman, Hays, and Stix, 2000; Mosley, 2003*b*; Przeworski and Wallerstein, 1988). Part of the work in this tradition observes that financial markets may react to political events and anticipated political outcomes (Kaplan and Thomsson, 2016). These reactions can be motivated by uncertainty around the election itself, as well as by preferences for candidates perceived as more market-friendly. For instance, elections may be associated with increased volatility in sovereign debt markets, especially when those elections bring left-leaning and inexperienced governments to office (Brooks, Cunha, and Mosley, 2022; Campello, 2015; Jensen and Schmith, 2005). At other times, investors may engage in speculative attacks against pegged currencies, as they expect that governments will be less willing to defend their currencies (and raise interest rates) as an election approaches (Leblang and Bernhard, 2000; Leblang and Satyanath, 2006).

The 2002 presidential election in Brazil is often used to illustrate these dynamics (Hardie, 2006). Professional investors' fears in the run-up to the election of Luiz Inacio Lula da Silva,

[1] International financial institutions also have encouraged capital account liberalization, especially as part of post-crisis reforms (Nelson, 2014).

a former trade union leader who once called upon Brazil to repudiate its foreign debt, led to sharp drops in Brazil's currency and stock markets, as well as a jump in sovereign spreads. Only after Lula signed a pre-election agreement with the IMF did market jitters subside.

Chile's 2021 presidential election offers a more recent illustration of similar dynamics. The contest was a highly polarized campaign, including leading candidates from the extreme left as well as from the extreme right. Despite long being considered a beacon of political and economic stability, Chile experienced financial market volatility, falling equity prices, capital flight and heightened fears of default. The currency fell sixteen percent in 2021 (one of the largest depreciations among emerging markets currencies), and the stock market declined 14 percent. Only after both candidates moderated their policy positions ahead of the December 2021 run-off vote did stability return to markets.

Such market responses to elections and the electoral cycle can affect governments' ability to access new credit, as well as to refinance their existing obligations. These reactions also can have negative consequences for the broader real economy, either by raising interest rates for firms and consumers, or by generating greater volatility (see, for instance, Brooks, Cunha, and Mosley (2022)). In response to, or as an attempt to avoid, such reactions, incumbents as well as candidates may moderate their policy platforms, especially in countries that are highly dependent on international capital or that have high levels of sovereign debt outstanding (Brooks, 2004; Rodrik, 1998; Wibbels, 2006).

In this paper, we explore another channel by which financial markets could affect political outcomes and political actors' incentives to pursue market-friendly policies. We investigate the potential effects of financial market responses to election campaigns on mass publics' preferences over candidates for executive office. We hypothesize that, especially for individuals that do not identify strongly with a given political party or candidate, information about financial market responses to different candidates can shift evaluations of those candidates. We discuss two channels through which this might occur, one based on material interests and the other based on elite cues deriving from financial market responses to politics.

We assess our expectations in the context of Brazil's 2022 presidential election. We fielded a survey experiment in October 2022, in the weeks between the first and second rounds of voting. We randomly assigned respondents to receive information about financial markets' reactions to Jair Bolsonaro and Luiz Inácio Lula da Silva, as well as to the first round of the election. We find that information about the overall market reaction to the election – a positive shift following a stronger-than-expected showing for Bolsonaro in the first round – is associated with more positive assessments of Bolsonaro and more negative views toward Lula. Similarly, respondents who are informed that professional investors are worried about either candidate are less favorable, all else equal, in their assessments of that candidate. We also discuss how these treatment effects vary with individuals' economic knowledge and exposure.

2 Theory & Existing Research

A rich body of research in international political economy has explored the foundations of mass attitudes toward various aspects of the global economy, including trade, foreign direct investment, sovereign borrowing and exchange rates. Much of this research is premised on the assumption that preferences over economic policy reflect material self-interest. Material self-interest could stem from factor endowments, sector of employment, consumer interests, exposure to offshoring, or home ownership and financing, among others (see, for instance, Ahlquist, Copelovitch, and Walter (2020); Aklin, Arias, and Gray (2022); Ansell (2019); Baker (2005); Hiscox (2001); Rogowski (1987); Walter (2008)). Some analyses treat material self-interest at the individual or household level, while others view such concerns as sociotropic (Mansfield and Mutz, 2009). More recently, scholars have debated the extent to which material concerns are the main determinants of individual preferences over economic policies (see, for review, Curtis, Jupille, and Leblang (2014); Margalit (2019)). Many suggest that material concerns are mediated by partisanship (Nelson and Steinberg, 2018),

media framing (Barnes and Hicks, 2021), elite cues (Bansak, Bechtel, and Margalit, 2021) and racial attitudes (Baccini and Weymouth, 2021; Guisinger, 2017), *inter alia*.

We focus on how financial markets affect the formation of attitudes by the mass public toward political candidates in domestic politics, or as (Curtis, Jupille, and Leblang, 2014) call it, "mass IPE."[2] In countries that rely heavily on foreign investment, government actors may devote considerable attention to sending the "right" signals to win or maintain investor confidence. While considerable research has focused on the implications of such market discipline for government actors and public policy, less is known about the potential for market actors' influence to be transmitted through their impact on mass public opinion on political candidates. To the extent that voters are aware of, and react to market actors' signals of a candidate's competence, or impact on the domestic economy, the constraints generated by financial markets on domestic politics may be magnified in ways that existing research has overlooked. These effects, crucially, should be particularly difficult to the extent that voters have a strong partisan or personal attachment to a candidate, and where the information environment is such that voters have extensive information about candidates, and thus there is narrow room for updating of their assessments of those candidates.

Given that many developing countries are exposed to financial markets, we seek to understand whether and under what conditions market signals affect mass political attitudes. Specifically, our theory focuses on middle-income countries that have both a sufficiently deep financial sector, and are exposed to international financial flows in ways that are consequential to the domestic economy. Indeed, emerging nations have long been subject to highly volatile financial flows and international shocks, and the risk that changes in investor sentiment (whether the result of country-specific or global factors) could lead to sudden stops in capital flows. The consequence is that not only incumbent governments, but also candidates for the highest office, might alter their proposed policy platforms in order to avoid market

[2]Our main dependent variables of interest are not mass attitudes toward various international economic policies; but rather mass attitudes toward political actors, potentially influenced by the reactions of international investors.

"punishment" and its consequences for the domestic economy.

Under what conditions, then, might citizens use signals from financial markets to inform their views of political candidates? Existing research on public opinion and voting suggests that voters may respond either to personal "pocketbook" economic concerns, or "sociotropic" concerns, relating to the broader economy. Pocketbook concerns are the most intuitive theory of voting, wherein citizens are expected to support a candidate that will provide the greatest material benefit (albeit in transfers or tax relief). However, whilst the pocketbook theory is rooted in a view that voters respond to their economic self-interest, scholarship focusing on sociotropic concerns has drawn upon long history of research demonstrating that democratic elections tend to by strongly influenced by economic conditions, wherein incumbents are favored when the economy has been prospering and less so when it has not. The logical implication of this research is that if voters are concerned with the overall effect of elections on the economy, then they will vote for the candidate that is expected to do "better" for the national economy. A third body of research suggests that voters may be swayed by elite "cues." In this view, voters may not be fully informed or certain about a candidate's qualification or prospective effects on the economy or individual, so they may delegate that judgment to actors who are seen as better-informed on the consequences of an election.

On the basis of existing scholarship focused on mass attitudes toward borrowing, default and financial crises, we expect that material considerations may play a role. For the electorate generally, government's capacity to borrow is related to governments' capacity to engage in fiscal policy. To the extent that publics prefer that governments spend on education, infrastructure, social security and the like (and that they do so without raising taxes), voters should want their governments to retain access to international capital markets (Ballard-Rosa, 2020). Moreover, in countries with a history of economic and financial crises, publics will be especially sensitive to negative market reactions. This suggests a first, general expectation:

Hypothesis 1. *Information about positive financial market reactions to a candidate are*

associated with more positive assessments of the candidate; while informing respondents about negative market reactions is associated with less favorable assessments of the candidate.

This first hypothesis assumes that all individuals are equally concerned about financial market reactions, as a function of markets' general implications for the state of the economy as well as governments' capacity to borrow and spend. We expect, however, that individuals vary in their attentiveness to, as well as their concern with, financial markets. These differences reflect individual material interest, strength of identification with a candidate or party, and propensity to view international investors as a type of elite cue. Put differently, we expect heterogeneous effects of our information treatment.

With respect to individual material considerations, previous studies suggest that voters who worry about the interest rates on their consumer debt, for instance, are more likely to support the quick resolution of banking sector crises, even as such resolution is fiscally costly (e.g. Curtis, Jupille, and Leblang (2014)). Similarly, Steinberg and Nelson (2019)'s study suggests that economic self-interest is central to explaining mass attitudes toward capital controls in Argentina, as well as presidential vote choice.

Additionally, Margalit and Shayo (2021) conduct a field experiment in which individuals in the United Kingdom are given funds to invest in financial markets. Stock market investment is associated with a shift to the right in political and social attitudes, as asset ownership appears to generate a greater trust in markets (and market-friendly political viewpoints). We therefore anticipate that individuals who have investments, whether inside or outside of Brazil, will be particularly sensitive to information about financial market movements during presidential election campaigns. We also expect that market reactions will be more salient to respondents who report higher levels of concern with the state of the economy.

Hypothesis 2. *Individuals with investment holdings, as well as those who are more concerned about economic policy outcomes, are more likely to shift their views in response to information about market reactions.*

These sociotropic as well as individual material concerns are, in our view, unlikely to

operate alone. Indeed, Barnes and Hicks (2018) note that public opinion toward deficit reduction, while explained partly by material interests, is affected by elite framing as well as media coverage. Similarly, in their study of mass attitudes toward austerity in several European nations, Bansak, Bechtel, and Margalit (2021) find that preferences around austerity are driven not only by material interests, but also by media framing and governments' strategic creation of policy packages.

Perhaps even more directly related is Nelson and Steinberg (2018)'s study of attitudes toward default in Argentina. They draw on multiple surveys related to the government's protracted legal disputes with (mostly foreign) bond investors. They find that opinions toward these disputes are predicted more accurately by partisan identity and presidential approval than by individual economic self-interest. That is, those who might be expected, for material reasons, to support the repayment of debt did not do so when their preferred party or presidential candidate opposed repayment. Hence, at least in some contexts, partisan attachment may override concerns with market movements.

In the empirical context of our study – an election with two well-known candidates, and in which a significant proportion of the electorate held strong (and polarized) views – we might then expect that individuals who are strong partisans will be less likely to be moved by information regarding financial market reactions. Put differently, we expect market-related information to have a greater impact among those who are less attached to a candidate, and who are less certain about their second-round vote choice.

Hypothesis 3. *Individuals with strong attachments to a presidential candidate or a candidate's political party are less likely to shift their views in response to information about market reactions.*

Our final hypothesis considers the possibility that "elite cues" may come not only from political elites (such as party leaders or candidates for national office), but also from economic and financial elites. That is, if voters view international investors as well-informed, they may take cues from them. This is a different channel – an informational mechanism – by which

financial market reactions could shift mass attitudes. Here, we expect that publics vary in their trust of, and their attention to, international financial markets. Those who are more attentive to markets, and who view international investors as a reliable judge of policy quality, are more likely to respond to information about market movements.

Hypothesis 4. *Individuals who place greater trust in markets, or who pay greater attention to markets (to the exchange rate or interest rates) are more likely to shift their political views in response to new information.*

We assess these expectations via a survey experiment, conducted in October 2022 in Brazil. If mass attitudes indeed vary in response to financial market movements, there exists another channel – beyond the direct costs to governments of debt financing – by which global capital markets influence domestic politics. Voters' awareness of the potential impact of markets, as well as their willingness to take cues for markets, suggests a more direct connection between investors' behaviors and the domestic policy process. Voters might hold governments accountable not only for debt defaults, financial crises and currency devaluations (Ballard-Rosa, 2020), but also for more subtle increases in risk premia. Mass attention to financial market movements could facilitate the "democratic advantage" in sovereign borrowing, by intensifying the domestic audience costs of default (Beaulieu, Cox, and Saiegh, 2012; Ballard-Rosa, Mosley, and Wellhausen, 2021; Schultz and Weingast, 2003). Mass publics' awareness of professional investors' reactions to politics also might make (some) political candidates and leaders more inclined to emphasize the market-friendliness of their policy positions.

3 Data and Research Design

We conduct a survey experiment between the first (October 2) and second (October 30) rounds of the 2022 Brazilian presidential election. The runoff election pitted incumbent president Jair Bolsonaro, from the right-wing Liberal Party (PL), against former president

Luiz Inácio Lula da Silva, from the left-wing Workers' Party (PT). The survey was fielded online between October 17 and 28, that is, after the result of the first round was announced but before voters cast their ballots for the presidential runoff on October 30. Our sample was collected from Cint's survey panel and includes 2,507 adult respondents (age 18 and older) living in Brazil. The sampling procedure uses census-based quotas for age, sex, and region. In addition, we use income-based quotas to ensure a more even representation across income strata. Given the highly unequal income distribution in the Brazilian population, we choose to oversample from higher income brackets (Figure A1) to allow for the testing of mechanisms related to material exposure to election-induced financial market shocks, such as through the ownership of financial assets.

The study consists of experimentally manipulating information about financial market responses to the first round results, as well as foreign investors' views about the presidential candidates, to assess how financial market responses and assessments affect mass political attitudes. We randomly assign respondents to one of five experimental conditions. In the first two conditions, a vignette describes international investors' worries about a possible new Bolsonaro(Lula) presidency, focusing on investor concerns about the future course of macroeconomic policy under Bolsonaro(Lula). In both conditions, the information presented draws from real news sources, including actual quotes from financial market participants, as shown in Table 1. Note, however, that the vignettes refrain from naming specific sources to avoid confounding effects from respondents' possible preferences over particular news outlets. This first set of experimental conditions therefore emphasizes investors' concerns with the economic policies likely were either candidate to win office.

In contrast, the second set of experimental conditions focuses on financial markets' behavioral responses to developments in the presidential campaign. In crafting these manipulations, we leverage the fact that Bolsonaro performed better than expected in the first round of the election, which caused financial markets to rally on the day after the results were announced. While major poll aggregators predicted a 10-14 percentage-point lead for

Table 1. Experimental Manipulations

Treatment Condition	Vignette
Investors worried about Bolsonaro	Some international investors have recently expressed worries about a possible new Bolsonaro presidency. According to a major financial newspaper, Bolsonaro's proposals lack "a commitment to promoting a stable macroeconomic environment, rooted in low inflation, sustainable fiscal policy and predictability." Foreign investors also worry about the fact that "Bolsonaro has circumvented the federal spending ceiling."
Investors worried about Lula	Some international investors have recently expressed worries about a possible new Lula presidency. According to a major financial newspaper, Lula's proposals lack "a commitment to promoting a stable macroeconomic environment, rooted in low inflation, sustainable fiscal policy and predictability." Foreign investors also worry about the fact that "Lula has been open about his desire to abandon the federal spending ceiling altogether."
Market reaction to first round results	On the day after this year's first-round presidential election results were announced, a stronger-than-expected showing for President Jair Bolsonaro led to positive reactions in Brazilian financial markets: • The Ibovespa stock index had its largest one-day gain since April 2020. • The real rose 5% against the US dollar. • Interest rates on Brazilian government bonds fell, indicating an improvement in "country risk" assessments by investors.
Market reaction + expert interpretation	Same as previous treatment with the following added: According to financial analysts, "investors are betting Lula's narrow lead may pressure him to pivot toward the center before the second-round vote and prioritize market-friendly policies."

Lula in the first round, the actual results revealed a much slimmer 5 p.p. margin. On the Monday following the vote count, the Brazilian stock market posted its highest one-day return in over two years, the Brazilian real appreciated 5% against the dollar, and Brazilian government bond yields dropped. Among financial analysts, the most common interpretation of the market's reaction to the result was that Lula's unexpectedly narrow lead would force him to pivot toward the center before the runoff.

In the third treatment condition, we therefore give respondents factual information about how financial markets reacted to the first-round election outcome. The vignette describes the positive shift in Brazilian stock, bond, and currency markets that followed the stronger-than-expected showing for Bolsonaro, using real information reported in the financial press. In the fourth condition, we provide respondents with the same factual information about financial markets' reaction, but also add a quote that reflects the emergent consensus among financial analysts at the time about why markets responded positively. The third condition therefore emphasizes the positive implications for markets from Bolsonaro's better-than-expected odds, while the fourth condition casts a more positive light on the implications for Lula's future economic policy. The fifth and final experimental condition is a control group in which respondents were not given any information about international investors' concerns or financial markets' behavior during the presidential campaign.

For respondents in all conditions, we then measure their attitudes towards each presidential candidate. Specifically, we first measure respondents' overall rating of the candidates on a 0-100 feeling thermometer, where higher values mean warmer or more favorable feelings towards the candidate. We also measure respondents' perceptions of each candidate's level of competence when it comes to managing Brazil's economy (on a 4-point Likert scale). In the analysis, we normalize these outcome measures to be between zero and one for ease of interpretation of the results. Finally, we ask respondents which candidate they plan to vote for in the second round of the election. The distribution of these outcome measures is shown in Figure A2.

The survey includes two types of attention checks. First, we implement two screener items that require respondents to select a particular answer (Berinsky et al., 2021). We use these items early in the survey to screen out inattentive respondents before they get to the experimental interventions. All respondents in the sample passed these attention checks. Second, we implement a manipulation check immediately after the experimental manipulations, in which respondents are asked a factual question about the treatment vignette that they read in the previous screen. We use this manipulation check to assess how effective the vignettes are at informing respondents about the views and reactions of financial markets regarding the presidential candidates, as well as to measure attention levels during the experimental component of the survey.

4 Results

Do financial market reactions and investor preferences matter for voters' assessments of presidential candidates? Hypothesis 1 states that information about positive (negative) financial market reactions to a candidate should be associated with more positive (negative) assessments of the candidate by voters. Figure 1 shows estimates of the average effect of the four treatments on feelings towards the candidates, perceptions of candidates' competence in economic policymaking, and vote intentions for the second round of the 2022 Brazilian presidential election. The figure shows linear regression estimates from models with and without pretreatment covariates. The set of pretreatment covariates includes factors that are typically predictive of vote choice and attitudes towards candidates: political ideology, party identification, income, education, gender, race, region, employment status, political and economic knowledge, financial asset ownership, personal debt, and a measure of economic anxiety.

The results in Figure 1 show that information about financial markets' reactions to and views about candidates affect voters' attitudes towards candidates, as measured by feelings

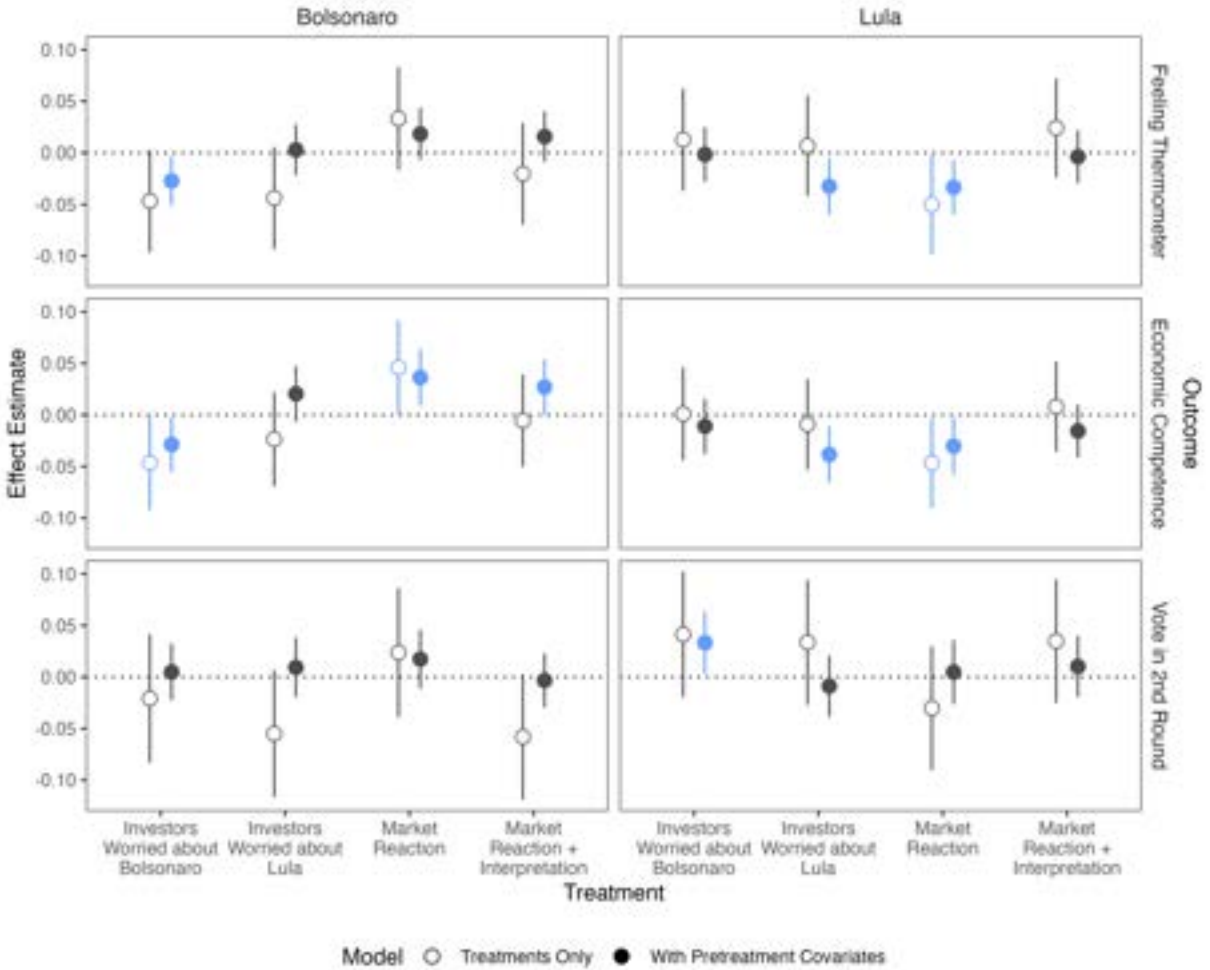

Figure 1. Average Treatment Effects on Attitudes towards Presidential Candidates and Vote Choice

toward candidates and evaluations of economic competence, in the way predicted by hypothesis 1. Specifically, we find that information about the market's positive reaction to the stronger-than-expected showing for Bolsonaro in the first round negatively affect voters' feelings towards Lula as well as voter evaluations of his economic competence. Conversely, information about the market's positive reaction improves Bolsonaro's evaluations of competence, including when that information is accompanied by expert interpretation. We also find that investors' worries about Bolsonaro's future macroeconomic policy negatively affect feelings towards Bolsonaro and evaluations of his economic competence, while information about investors' worries when it comes to Lula's future economic policy decreases voter eval-

uations of Lula's economic competence. Consistent with hypothesis 1, these results show that positive investor reactions boost voter evaluations of the candidates, whereas negative investor reactions hurt their economic management credentials.

Despite the strong and consistent evidence for the effect of financial market responses on attitudes toward the candidates, we find less evidence of an average effect on vote choice. The only treatment with a discernible effect on vote intentions for the second round is the one that provides information about investors' concerns about Bolsonaro's future economic policy. Interestingly, the treatment increases the probability of voting for Lula in the second round. As Figure A3 indicates, that effect seems to mostly stem from the treatment nudging undecided voters towards Lula. Nonetheless, the limited average effect on vote intentions is not surprising, given the highly polarized political climate that preceded the 2022 election and the fact that most voters had already made up their minds between the two candidates in the first round of the election. Moreover, average treatment effects may hide important variation in the size and direction of the treatment effects across different subgroups in the population. Indeed, as we explore below, the effects seem to be concentrated among voters with greater exposure to financial market shocks, those who pay greater attention to and place greater trust in markets, as well as those with weaker political attachments or who are less certain about their vote choice.

Figure 2 shows treatment effect estimates that account for potential noncompliance with the assigned treatment. In survey experiments like this one, some respondents may read the treatment vignettes with little attention or may be unwilling to engage seriously with the information provided to them. To gauge the extent to which our treatments effectively "treated" the respondents, we use a manipulation check that asks a factual question about the vignette to which that they were exposed. Respondents are presented with two correct and one incorrect answer about the vignette. We code as non-compliers those respondents who selected the only incorrect answer.

While Figure 1 reports intent-to-treat effects based on assignment to treatment, Figure

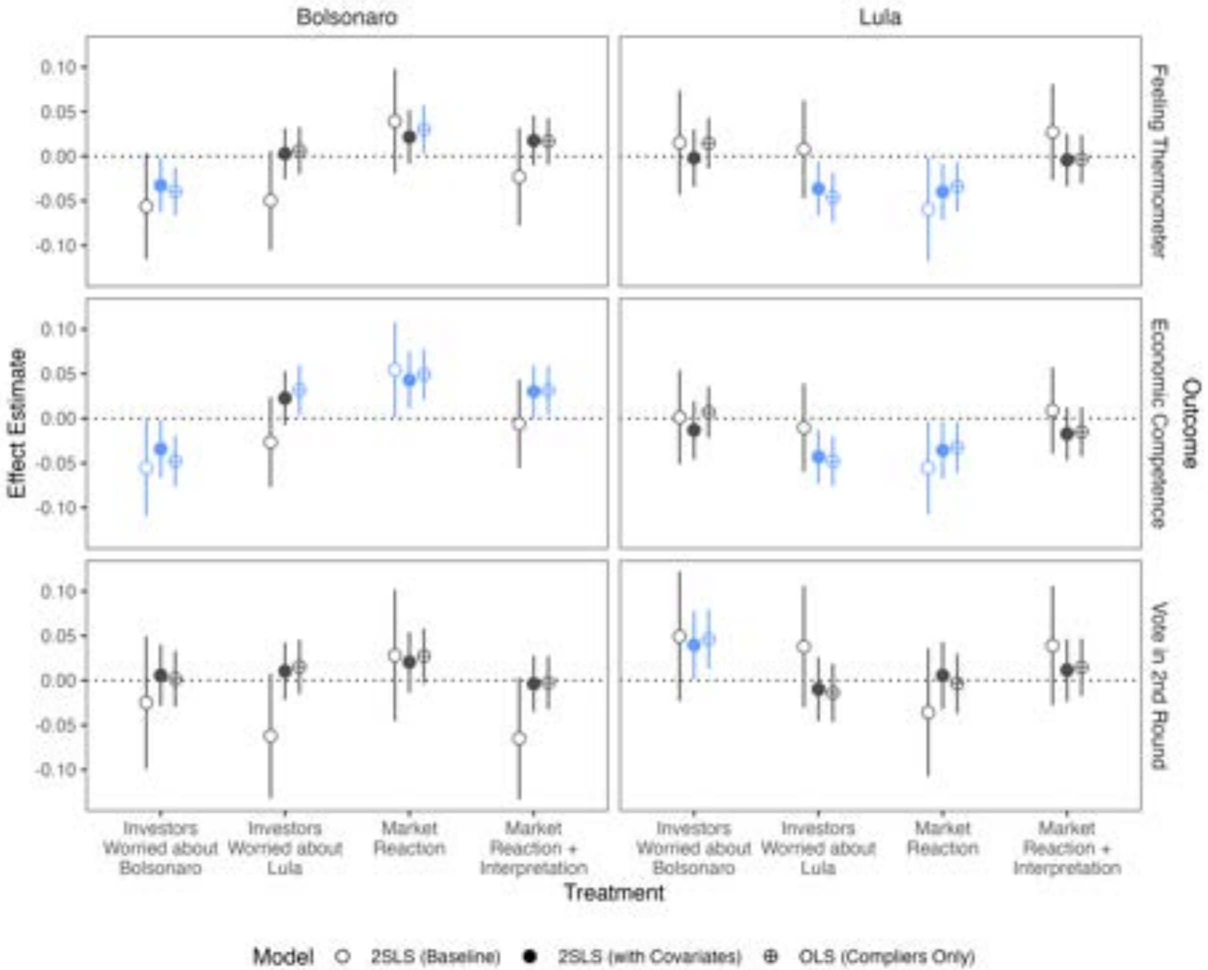

Figure 2. Average Treatment Effects on Compliers

2 shows local average treatment effects for the subpopulation of compliers. The OLS estimates for the subgroup of compliers are consistent with the main treatment effect estimates from Figure 1. However, because non-compliance may be systematic, including only compliers in the analysis can bias the results. Indeed, the data shows that those who voted for Bolsonaro in the first round were more likely to fail the manipulation check when receiving the "investors worried about Bolsonaro" treatment. Similarly, those who voted for Lula were disproportionately likely to fail the manipulation check in the "investors worried about Lula" and "market reaction" treatments – suggesting a motivated response to the study's experimental stimuli (Figure A4). We address this potential source of selection bias

by instrumenting treatment delivered with random treatment assignment. The two-stage least squares estimates shown in Figure 2 are consistent both in direction and size with our original estimates, lending further support for the claim that financial investors' views and market behavior affect assessments of the candidates' by voters.

4.1 Financial market reactions and individual economic interest

Are individuals with greater material exposure to financial market movements more sensitive to markets' reactions to presidential election campaigns? Hypothesis 2 states that individuals with investment holdings and those who are more concerned about future changes in economic policy outcomes should be more likely to shift their political attitudes in response to information about market reactions. We assess this hypothesis by looking at effect heterogeneity based on investment holdings, personal debt, and fears about the economy.

Figure 3 shows the marginal effects of the information treatments by financial asset ownership. We find that individuals with investment holdings are particularly sensitive to some of the information cues about markets. Notably, investment holders in Brazil are particularly sensitive to negative market information about Lula. Respondents who learn that investors are worried about Lula's possible election show pronouncedly worse evaluations of the former president, both in the form of colder feelings toward him and lower evaluations of his economic competence. Similarly, information about the market's reaction to the first round results lead respondents to score Lula markedly lower on the feeling thermometer. Along the same lines, asset holders show warmer feelings toward Bolsonaro and improved evaluations of his economic competence in response to information about financial market movements during the election campaign. Perhaps surprisingly, we also find that individuals that report not having financial investments of any sort sometimes are also moved by financial market cues. For example, information about investors' worries regarding Bolsonaro's economic policies seem to make non-asset holders more likely to declare a vote for Lula in the 2nd round. Nonetheless, respondents with no reported financial assets overall are less

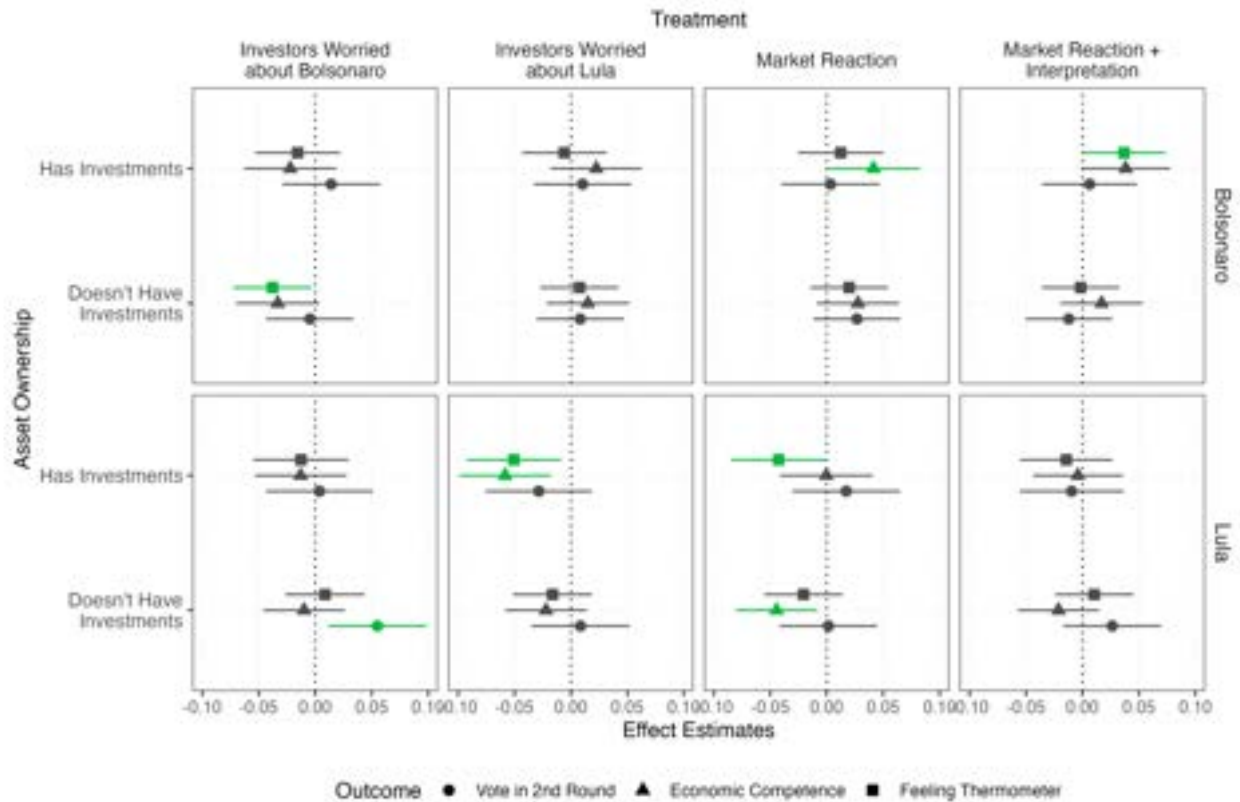

Figure 3. Marginal effect of information treatments by financial asset ownership (with 95% confidence intervals)

sensitive to information about financial markets as predicted by H2.

A second channel by which voters may be materially exposed to financial market movements is personal debt. Voters who worry about the interest rates on their debt should be more responsive to information about financial market reactions. Figure 4 shows marginal effects by level of personal indebtedness, using an additive index based on reported levels of credit card debt, mortgage, bank, and auto loans. The information treatments have a particularly large, negative effect on voter assessments of Lula both in terms of overall feelings towards him and in terms of voter evaluations of competence in economic management. While the treatments appear to have a particularly large, positive effect on Bolsonaro among voters with high levels of debt, none of the estimates are statistically significant at the 5% level, due in part to the relatively small number of voters who report having "a lot" of debt (Figure A5).

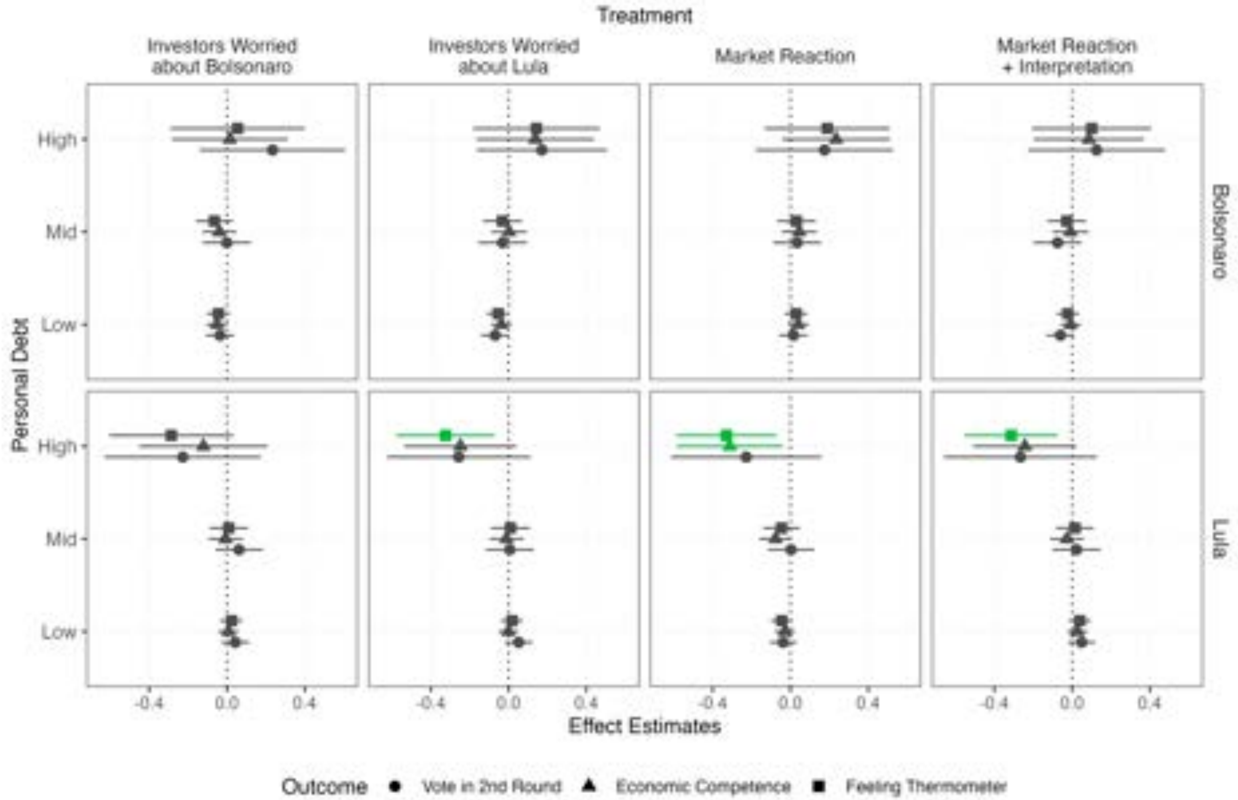

Figure 4. Marginal effect of information treatments by level of personal debt

We also assess effect heterogeneity related to voters' level of concern about future economic policy outcomes. We ask respondents how worried they are about: a future devaluation of the exchange rate, a future increase in the rate of inflation, and a future downgrade in the country's sovereign credit rating (Figure A6). Figure 5 shows marginal effects for those who report being "very worried" about these three outcomes vs. all other respondents. Information about investors' worries regarding Bolsonaro's future economic policies consistently reduces his support among very worried voters, including worse competence evaluations and a reduced likelihood of voting for him in the second round. Accordingly, that same information improves voter assessments of Lula, especially in terms of vote intentions. The remaining information treatments do not show a clear interaction with voters' assessments of Lula and Bolsonaro. Two of the information treatments – "investors worried about Lula" and "market reaction with expert interpretation" – seem to have the opposite of the expected

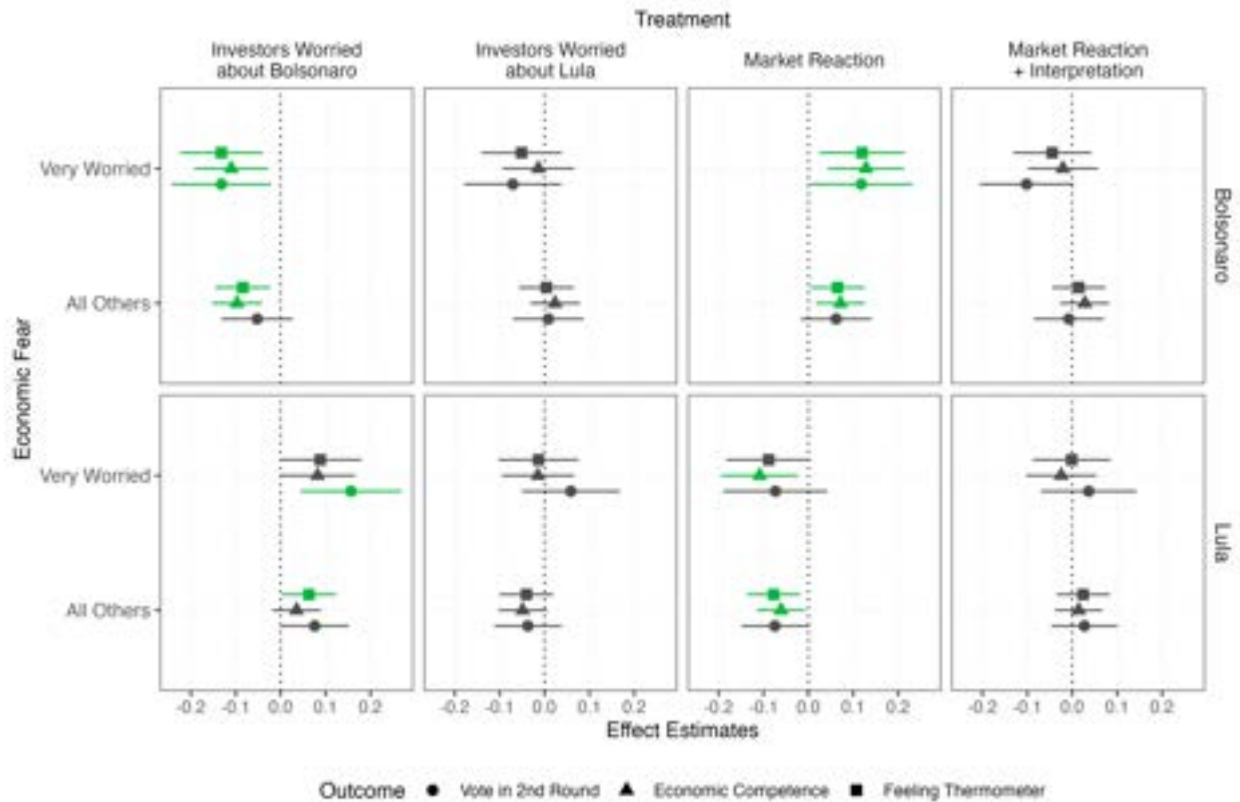

Figure 5. Marginal effect of information treatments by level of economic worry

effect on vote intentions for Bolsonaro, which suggests some caution in the interpretation of effects for relatively small subgroups like this one.

4.2 Financial market reactions as elite cues

Financial market reactions to presidential election campaigns may affect voters not only through individual material concerns, but also through an informational channel. Voters may take cues not only from political elites but also from economic and financial elites. They may see financial investors as savvy and well-informed, and as a result they may incorporate information gleaned from investors' public statements about presidential candidates as well as from their market behavior into their assessments of candidates. For one, we should expect voters with weaker partisan and ideological attachments to be more receptive to cues from international investors, as those should be less reliant on cues from party leaders and

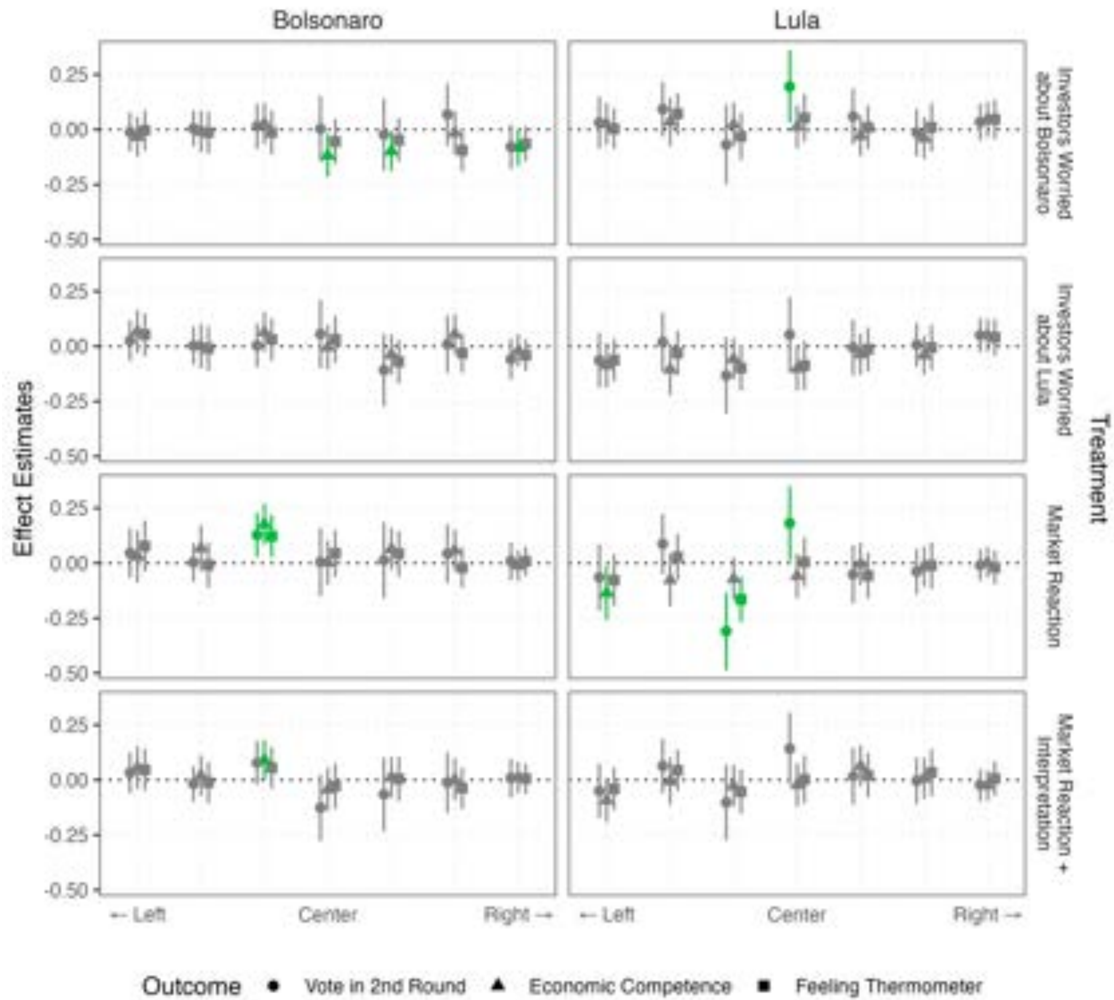

Figure 6. Marginal effect of information treatments by political ideology

other political elites and should have less solidified beliefs about the candidates. In other words, the our information treatments should have a greater impact on respondents with weaker ideological or partisan attachments to a candidate, as stated by hypothesis 3.

Figure 6 shows marginal effects as a function of political ideology measured on a 7-point left-right scale. Overall, the effects are markedly larger among voters who identify closer to the center of the ideology scale compared to voters who identify at either end of the scale. Information about investors' worries regarding Bolsonaro's economic policies worsens voters' evaluations of his economic competence especially among center and center-right voters. Similarly, information about investors' worries regarding Lula's economic policies adversely

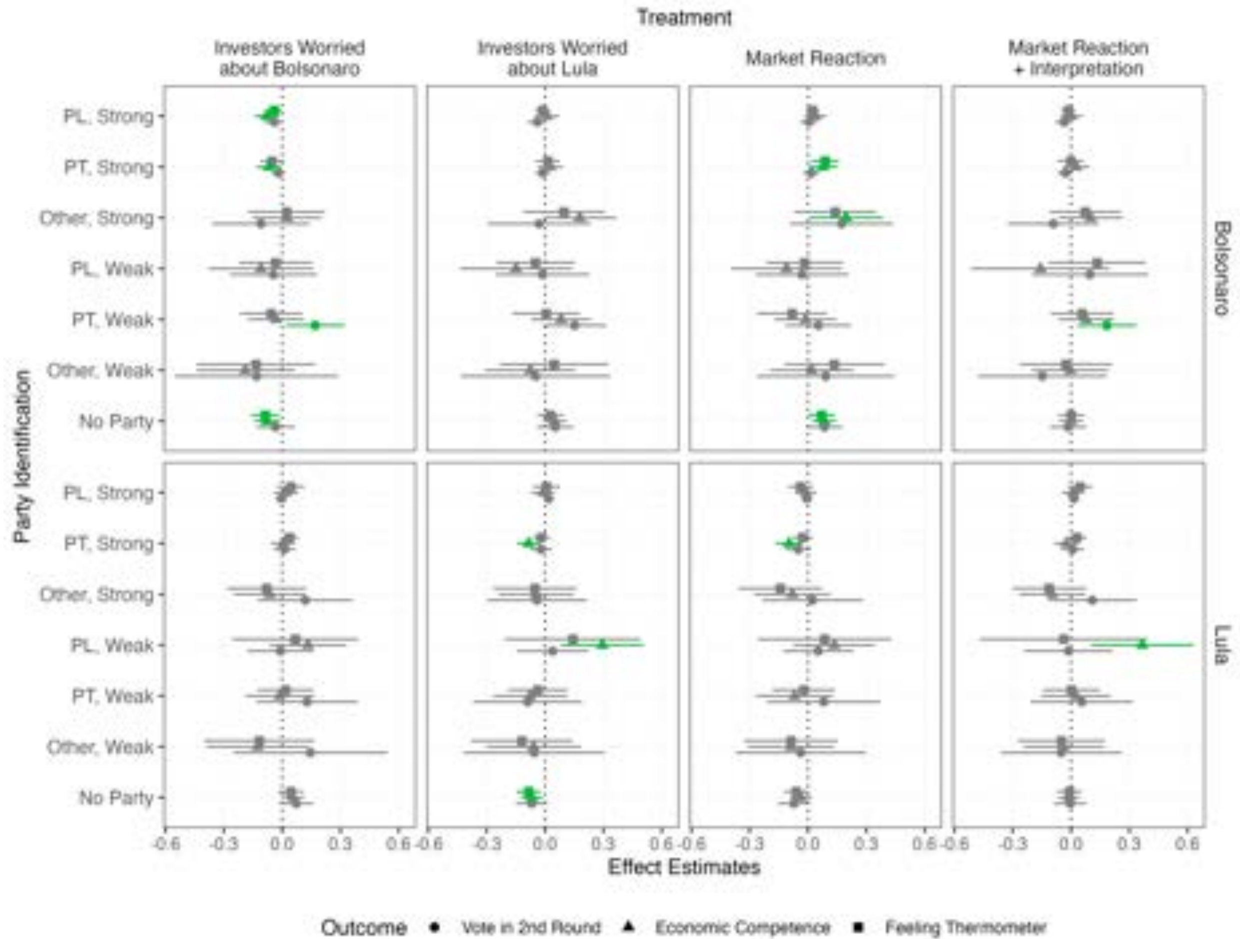

Figure 7. Marginal effect of information treatments by strength of party identification

affect the latter's evaluations of competence among center and center-left voters. Information about the market's reaction to the first-round results has a particularly pronounced effect on Bolsonaro among center-left voters and on Lula among center and center-left voters. In addition, the treatment effects also tend to be more pronounced for strong partisans. Figure 7 shows marginal effects by level of attachment to Bolsonaro's Liberal Party (PL), Lula's Workers' Party (PT), and the other parties that fielded presidential candidacies in the 2022 election. The impact of the information treatments appears to be greater among weak partisans overall, although in most cases the relatively small number of respondents who report a weak identification with any parties adds substantial uncertainty to the subgroup estimates.

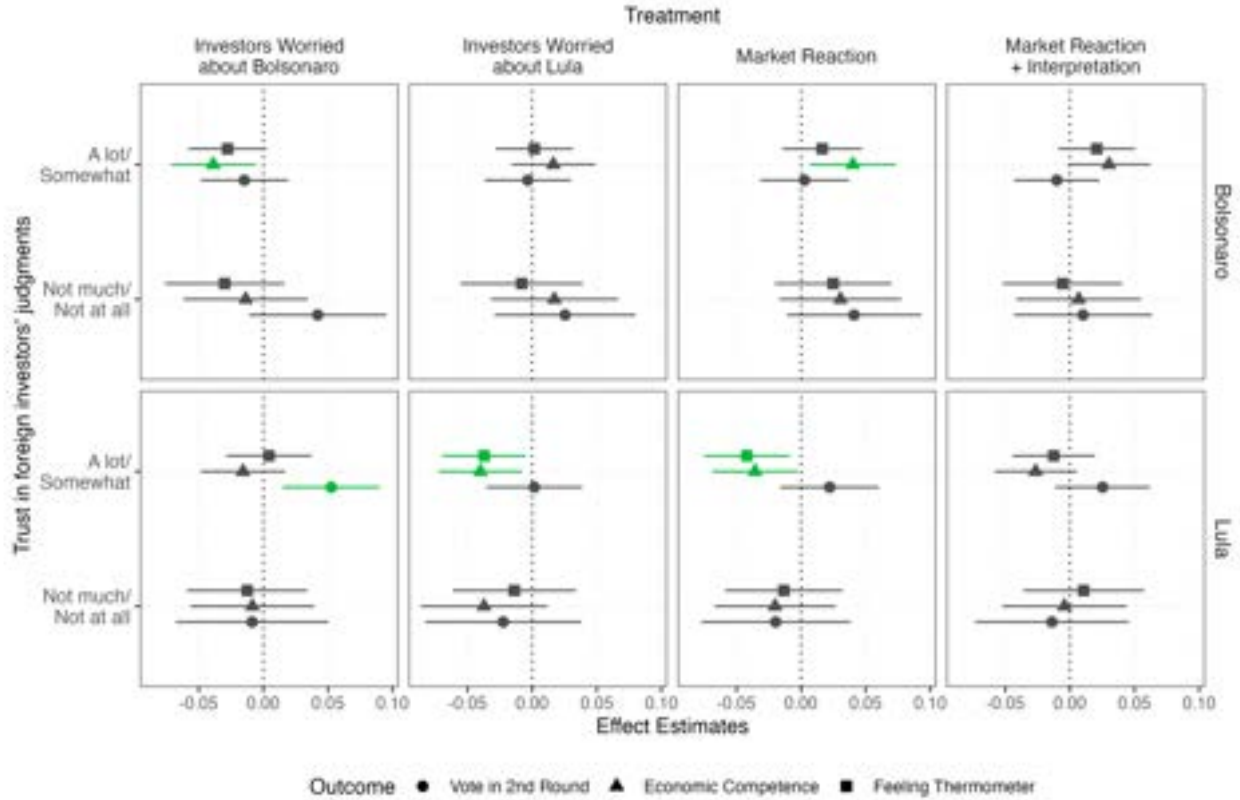

Figure 8. Marginal effect of information treatments by level of trust in foreign investors

By the same logic, the informational mechanism according to which financial market reactions act as cues about the candidates to voters should be more relevant among those individuals who trust investors' judgments about the candidates or who pay closer attention to financial markets. For those voters, the effect of our information treatments should be larger, as stated in hypothesis 4. Figure 8 shows marginal effects for respondents who report some or a lot of trust in investors' judgments about the candidates, compared to respondents who report little to no trust in foreign investors. Information about investors' worries regarding Bolsonaro's future economic policy is particularly damaging to voter perceptions of his competence in economic management, as well as overall feelings towards him, among those who trust investors. In addition, investors' worries about Lula and the market's positive reaction to Bolsonaro's stronger-than-expected result in the first round seem to hurt support for Lula and assessments of his economic competence.

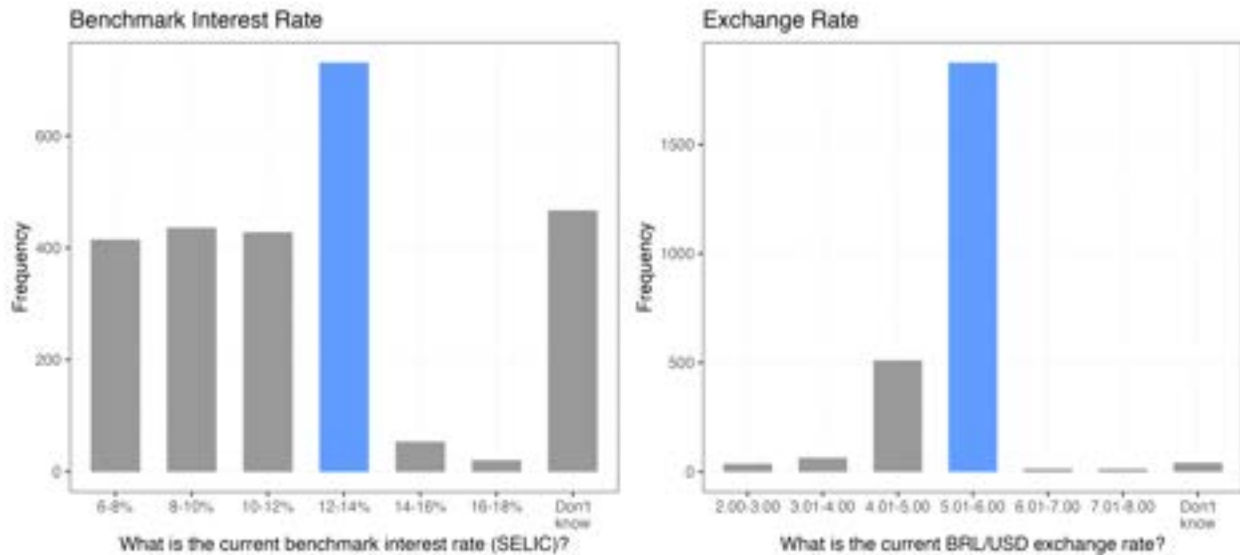

Figure 9. Knowledge about exchange rates and interest rates

Beyond trust in investors, the informational channel should also be more pronounced for those who are more attentive to markets. To gauge respondents' level of information about financial markets, we ask them about the current level of the benchmark interest rate set by Brazil's Central Bank (the SELIC rate) and the exchange rate of the Brazilian real against the US dollar. Figure 9 shows the distribution of answers to these two questions, with the correct answer highlighted in blue. The majority of respondents did not give the correct answer about the benchmark interest rate, though the modal response is correct. In contrast, most respondents did pick the correct interval for the exchange rate. Respondents also appear more confident in their answers about the exchange rate, as suggested by the lower rate of "don't know" answers.

Figure 10 shows marginal effects according to respondents' knowledge about interest rates. We find some evidence that financial market cues are more salient for well-informed voters. In particular, information about the market's reaction to the first-round results has a pronounced positive effect on Bolsonaro's evaluations of economic competence among voters who are well-informed about the current level of benchmark interest rates. It also has a pronounced negative effect on voters' feelings toward Lula among that same group of

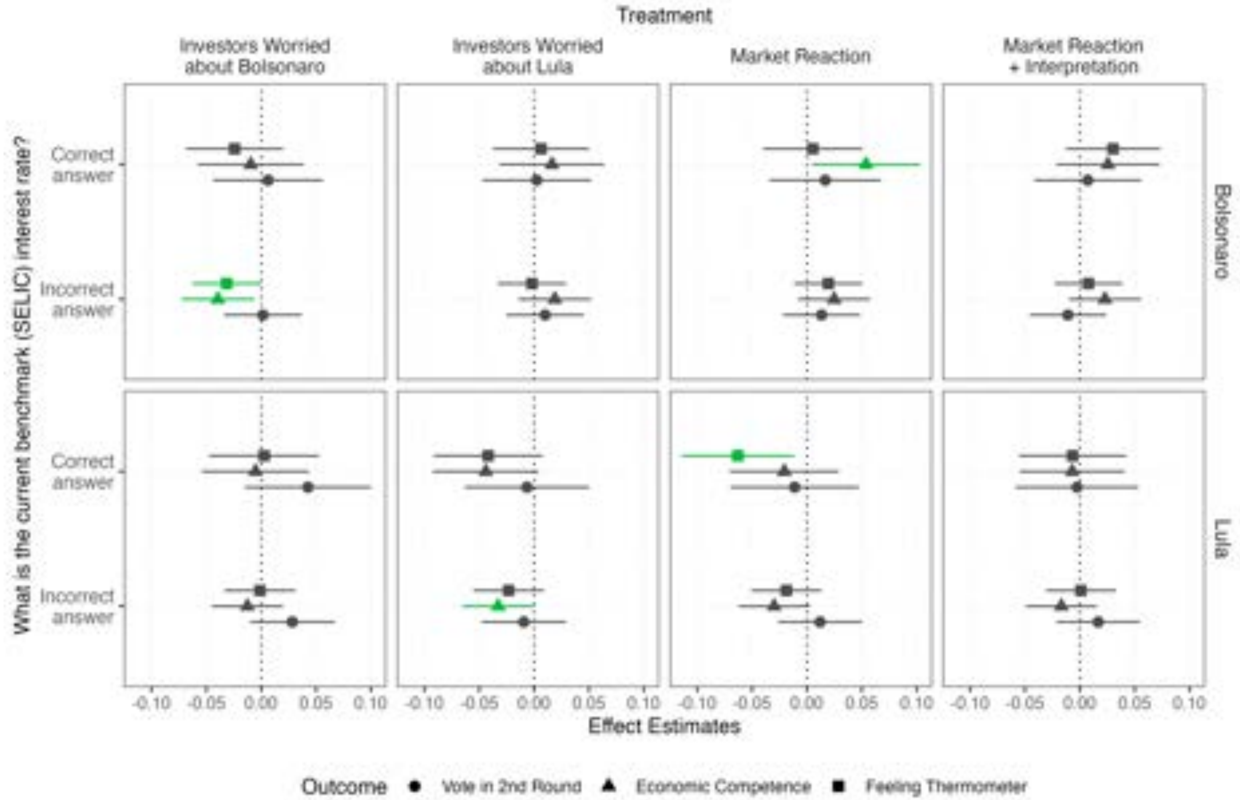

Figure 10. Marginal effect of information treatments by level of knowledge about benchmark interest rates

voters. Similarly, information about investors' concerns when it comes to Lula's economic policies hurt his evaluations among informed voters. In contrast, we find no clear evidence that our information treatments interact with voters' level of knowledge about the exchange rate, as Figure A7 shows, perhaps because given the salience of the exchange rate among respondents in our sample, knowledge about the exchange rate does not discriminate well between informed and uninformed voters.

5 Conclusion

We look at mass responses to investor behavior in an electoral setting. This might be the time when masses are receiving the most information about candidates, so finding effects here may be a more difficult test for us. We could look at how information about investor

assessments matters at different points in the electoral cycle.

Moreover, our analyses treat large sovereign debt market investors as largely external. The survey prompts noting negative or positive market assessments of candidates reference "international investors." While it is the case that many sovereign bonds are issued on international markets, under foreign law (Ballard-Rosa, Mosley, and Wellhausen, 2022), many governments also issue debt governed by domestic law. Complicating the picture future, some domestic law debt is held by foreigners, while some foreign law bonds are held by domestic residents. In any case, one might imagine that public reactions to "market" movements could vary as a function of whether bond investors are assumed to be domestic, foreign or a mix of the two.

The implications of this research go well beyond simply fleshing out a portrait of international market forces in domestic politics; rather, they identify a less well-understood channel through which financial markets affect domestic politics.

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