How Do Voters Hold Politicians Accountable for Personal Welfare? Evidence of a Self-Serving Bias

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Short title: A Self-Serving Bias in Political Accountability

Abstract: Examining a government's record is difficult. This is a problem for voters who want to hold governments accountable. One solution is for voters to hold governments accountable for changes in their personal welfare. Yet, it is often unclear whether changes in personal welfare are caused by government policies or voters' own actions. Since voters have a desire to protect their self-image, this ambiguity might fuel a self-serving bias in attribution. That is, voters might take personal responsibility for positive changes in personal welfare and hold the government responsible for negative changes. Based on data from election surveys and survey experiments, this article shows that voters attribute responsibility for personal welfare in this self-serving way. This hurts democratic accountability because voters do not reward governments (enough) for improving their personal welfare.

Keywords: accountability; economic voting; political psychology; attribution; experiment.

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A key question in representative democracies is how, if at all, voters can hold governments accountable. The media, political parties and nonpartisan experts often disagree about what parts of a government's record are relevant – *is it national security or the economy?* – and about the nature of this record - *how much healthier is the economy really?* To complicate things further, voters have many other and more pressing obligations, such as work and family, besides figuring out whether the government has done a good job. In light of this, it is natural to consider whether there is a shortcut or a heuristic voters might use to hold governments accountable. One such heuristic could be to focus on personal welfare. Fiorina (1981), for instance, has argued that even uninformed voters "typically have one hard bit of data: they know what life has been like during the incumbent's administration" (Fiorina, 1981, 5), and that voters can use this data to judge the incumbent (see also Downs, 1957; Key, 1966; Popkin, 1991). If voters behave in this way, punishing and rewarding the government for changes in personal welfare, some voters might end up reacting to personal experiences that have little to do with the government's behavior. Yet, overall, politicians will suffer at the polls if they make their voters suffer, and prosper if they make their voters prosper. In this way, voters ensure some measure of democratic accountability by voting for incumbents when their personal welfare improves (Surowiecki, 2005; Fiorina, 1981).

Early enthusiasm for this type of "egotropic" voting behavior was tempered by research showing that voters are rarely moved to reject or support governing politicians because of changes in their personal welfare (e.g., Kinder and Kiewiet, 1979, 1981; Stubager et al., 2014). Instead, this research suggested, voters focus on how society is doing as a whole (Lewis-Beck and Stegmaier, 2013). However, more recent research has found that personal welfare might indeed affect support for governing politicians. Using more detailed measures and more appropriate research designs, both Tilley, Neundorf and Hobolt (2018) and Healy, Persson and Snowberg (2017) find that changes in voters' own economic situation powerfully shape support for incumbent governments (see also Healy and Lenz, 2017; Simonovits, Kates and Szeitl, 2019). This puts the politicization of personal welfare back into play as a potential source of democratic accountability.

Even so, a key problem with holding politicians accountable for changes in personal welfare remains. The extent to which changes in personal welfare are the result of government policies or voters' own behavior is often unclear. Factors such as your employment situation, the size of your mortgage payments, and your children's test scores are influenced by government action, but they are also influenced by your own behavior as well as other extraneous factors. On its face, this ambiguity should not be a problem in the aggregate, as voters who happen to think the government is less responsible for some relevant outcome are canceled out by voters who think the government is more responsible. However, this article shows that even in the aggregate, ambiguity about the extent of voters' personal responsibility for changes in personal welfare is detrimental to democratic accountability. In particular, the article shows that voters seize on the ambiguity about who is responsible for changes in their personal welfare to attribute responsibility in a self-serving manner.

Protection and enhancement of one's self-image is an important motivation of human behavior (Sedikides and Strube, 1995; Beauregard and Dunning, 1998; Baumeister, 1999; Kurzban, 2012; Tavris and Aronson, 2008). This is reflected in a ubiquitous, self-serving bias in attribution, which motivates people to draw causal inferences that make them look good (Kunda, 1999; Heider, 2013; Stephan, Rosenfield and Stephan, 1976). Because of this bias, people tend to take personal responsibility for desirable outcomes and externalize responsibility for undesirable outcomes. In the context of attributing responsibility for changes in voters' personal welfare, the self-serving bias implies that voters hold the government more responsible for bad outcomes (in order to exculpate themselves) and less responsible for good outcomes (in order to implicate themselves). This constitutes a valence asymmetry in attribution of political responsibility.

I discuss the implications of the self-serving bias for democratic accountability at length below, but it should already be clear that it will hurt the re-election prospects of politicians who are able and willing to increase voters' personal welfare because voters will not credit politicians adequately for improving their personal welfare (Achen and Bartels, 2016). Therefore, it also attenuates politicians' electoral incentives to improve personal welfare and weakens voters'

ability to select welfare-improving politicians from (Fearon, 1999). In sum, the self-serving bias undermines democratic accountability.

This article presents evidence of a self-serving bias in attribution of political responsibility for personal welfare in three separate studies: (1) based on a number of election studies, it shows that voters punish incumbents more for negative changes in their economic situation than they reward incumbents for positive changes. (2) Based on survey data, it shows that voters who say their personal finances are improving are less likely to say that the government can affect their personal finances. (3) Based on three population-based vignette survey experiments ($n \approx 6000$) that present voters with different hypothetical outcomes related to their personal welfare, it shows that voters hold the government more responsible for negative changes than for positive changes. All three studies thus find that voters attribute political responsibility for changes in their personal welfare in a self-serving way, attributing more responsibility to the government if the changes are negative than if they are positive.

The Political Relevance of the Self-Serving Bias

The need to present a positive self-image - to be the best you can be - is important in many social settings (Goffman, 1959). After all, if you do not signal kindness or competence, why should anyone want to spend time with you? Following the adage that "what convinces is conviction", evolutionary psychologists have argued that humans have developed a tendency to enhance and protect a positive self-image so that the average human can convincingly signal to others that they are really better than average (Kurzban, 2012; Tavris and Aronson, 2008).

An important consequence of the desire to self-protect and self-enhance is a self-serving bias in attribution (Heider, 2013; Greenwald, 1980; Stephan, Rosenfield and Stephan, 1976; Fiske and Taylor, 2013, 272). This bias is reflected in a "tendency for people to take personal responsibility for their desirable outcomes yet externalize responsibility for their undesirable outcomes" (Shepperd, Malone and Sweeny, 2008, 895). If, for instance, someone gets a good grade on an exam, they infer that the grade reflects their own effort and skill. If they get a bad

grade, they infer that it was due to the teacher's tough grading or the loud neighbors who made studying impossible (McAllister, 1996; Miller, 1976; Sedikides, Gaertner and Toguchi, 2003).

While previous studies have found that the self-serving bias shapes people's attributions in a number of different areas, such as who you blame for gun deaths (Joslyn and Haider-Markel, 2017) and for losing in games of chance (Cassar and Klein, 2017; Deffains, Espinosa and Thöni, 2016), it has not been shown to affect how voters attribute political responsibility for policy outcomes, such as the state of the economy or the quality of public services. If one considers the internal logic of the self-serving bias, there might be a good reason for this omission.

The self-serving bias is a type of "directional" motivated reasoning (Kunda, 1990), meaning that the bias leads people to reach conclusions based on a motive other than accuracy. Motivated reasoning feeds on ambiguity; ambiguity about which conclusions to draw makes room for rationalizations steered by motives like self-enhancement or self-protection. For the self-serving bias, this ambiguity relates to your own involvement in producing an outcome. If you are sure that you had nothing to do with a particular outcome, the self-serving bias cannot play a role in shaping how you attribute responsibility for this outcome, because there is no ambiguity regarding your own involvement. Consequently, the self-serving bias cannot affect how citizens attribute responsibility for outcomes such as the state of the national economy because outcomes like this are beyond the control of any one individual.

While individual citizens cannot meaningfully influence national welfare, citizens can meaningfully influence outcomes related to their own personal welfare, such as mortgage payments, income, and job security. These are all outcomes over which citizens have some individual control, and yet they are also policy outcomes; a partial result of government (in)action. The self-serving bias would predict that when outcomes like these change for the worse, the motivation to self-protect will lead people to externalize responsibility, and one of the external forces that might be blamed is the government. Conversely, when outcomes related to personal welfare change for the better, the motivation to self-enhance will lead people to internalize responsibility, and the government is one of the external actors that might receive less credit as a result. This valence asymmetry in how citizens attribute responsibility for changes in their

personal welfare is the politically relevant implication of the self-serving bias which I want to interrogate further. It can be expressed in the following terms:

> **The self-serving bias hypothesis:** Voters will hold governing politicians more responsible for changes in their personal welfare when these changes are for the worse than when they are for the better.

The self-serving bias hypothesis is somewhat similar to the partisan bias hypothesis, i.e., voters who identify with or feel close to a particular party hold it responsible for desirable policy outcomes yet exculpate it for undesirable outcomes (Rudolph, 2003, 2006; Malhotra and Kuo, 2008; Marsh and Tilley, 2010; Tilley and Hobolt, 2011; Bisgaard, 2015; Healy, Kuo and Malhotra, 2014). However, the self-serving bias is driven not by whether the voters' preferred party is in charge but by whether outcomes reflect poorly or well on the voters.

Since the self-serving bias hypothesis predicts a valence asymmetry in the attribution of responsibility for policy outcomes, it is also natural to contrast it with studies identifying a negativity bias (or grievance asymmetry) in retrospective voting (e.g., Bloom and Price, 1975). Conceptually, the self-serving bias is distinct from this literature because it suggests that the valence asymmetry in attributions will be stronger for particular outcomes—those related to personal welfare—contrary to the negativity bias literature where the asymmetry is typically thought to be unconditional (e.g., Nannestad and Paldam, 1997).

The self-serving bias has important implications for the aggregate-level relationship between economics and elections. For one, it may help explain why there appears to be a negativity bias in the effect of GDP growth on incumbent support, i.e., voters punish governments harder for deteriorating economic conditions than they reward them for improvements (e.g., Bloom and Price, 1975; Dassonneville and Lewis-Beck, 2014). If positive growth translates into better personal welfare, then voters may attribute this change to their own character and grit, whereas they will be more likely to blame the government for any reversals of economic fortune associated with negative growth. Relatedly, the self-serving bias may also help explain why much of the literature has generally found small, inconsistent effects of personal economic conditions (Kinder and Kiewiet, 1979, 1981; Singer and Carlin, 2013; Lewis-Beck and Stegmaier, 2013; Stubager et al., 2014). In particular, the self-serving bias implies that

the estimated effect of personal economic conditions on government support is sensitive to the distribution of personal economic conditions in the electorate (i.e., the effect will be smaller when more voters experience stable or improving economic conditions).

The most important potential implication of the self-serving bias hypothesis is for democratic accountability. Recent studies have shown that voters are sensitive to changes in personal welfare (e.g., Larsen, 2017) and hold governments electorally responsible for personal economic conditions (Tilley, Neundorf and Hobolt, 2018), perhaps even to the same extent as they hold them responsible for national economic conditions (Healy, Persson and Snowberg, 2017). As mentioned in the introduction, this type of voting behavior could potentially help secure effective democratic accountability (Ashworth, 2012) as it pushes governments to maximize the personal welfare of their citizens. It is therefore also potentially problematic for democratic accountability if voters hold governments responsible for personal welfare in a self-serving way.

The self-serving bias implies that if a politician manages to increase voters' personal welfare, then voters will internalize responsibility in order to enhance their self-image. Similarly, some voters might hold the government responsible for negative changes in their personal welfare to externalize responsibility (even if the government only played a minor role in realizing the negative outcome). In this way, the self-serving bias will make it less likely that voters re-elect politicians who are able and willing to improve their personal welfare, thus enhancing problems related to adverse selection (Fearon, 1999). It will also reduce politicians' electoral incentive to make a positive difference for their electorate, enhancing problems related to moral hazard (Ferejohn, 1986).

Research Design

The article employs a series of surveys and experiments to test the self-serving bias hypothesis. I have organized these different data sources into three separate studies. Study 1 examines voter behavior based on the Danish, American, British, and Australian national election studies as well as the Latinobarómetro, a comparative election survey of Latin American countries.

For each election study, I estimate a valence asymmetry in the extent to which the government is held electorally responsible for personal economic conditions. In particular, I compare the propensity to vote for governing parties among respondents who say their personal finances are better, worse, or the same. Study 2 correlates voters' assessment of their personal finances with their beliefs about the government's capacity to affect their economic situation based on a population-based survey of Danish voters. Study 3 consists of three population-based vignette survey experiments with Danish voters who are asked to evaluate the extent to which the government is responsible for different outcomes. Based on these experiments, I am able to randomly assign outcomes to voters and estimate the causal effect of (hypothetical) changes in personal welfare on voters' attributions. Table 1 presents an overview of the studies.

Table 1: Description of Surveys and Experiments

	Goal of Study	Description of Data Sources	N
1.	Identify signs of a self-serving bias in voter behavior.	Danish National Election Study (1990-2015)	12,391
		American National Election Study (1984-2012)	12,252
		British Election Study (2001-2017)	5,873
		Australian Election Study (1987-2015)	15,904
		Latinobarómetro (1995-2010)	112,096
2.	Explore whether differences in behavior reflect differences in attributions.	Survey of attributional beliefs and economic perceptions. (2014)	943
3.	Explore whether differences in attributions are caused by (hypothetical) changes in personal welfare.	Vignette survey experiment randomizing hypothetical outcomes (2015)	1,002
		Pre-registered replication of first experiment. (2019)	3,014
		Vignette survey experiment with a different set of hypothetical outcomes and an alternative dependent variable. (2019)	2,016

While the experiments provide the strongest empirical evidence, the observational data is included because it has other inferential strengths. As such, even though there are many alternative explanations for the behavioral patterns identified in Study 1, it examines real voting behavior based on experienced economic hardship, which adds a high level of ecological validity. Overall, the three studies aim to provide a methodologically triangulated test of the self-serving bias hypothesis.[1]

As presented in Table 1, much of the data relates to Danish voters. Recent studies have identified average levels of economic voting in Denmark (Lewis-Beck, Stubager and Nadeau, 2013) with effects of economic growth and unemployment being of roughly the same size as in other OECD countries (Larsen, 2016). While some older research has suggested that the effect of personal economic conditions is especially strong in Denmark due to the large welfare state (Nannestad and Paldam, 1994), more recent research has shown that Denmark is similar to other countries in that the national economy appears to be more important than personal finances (Stubager et al., 2014).

Study 1: Election Studies

Study 1 tests the self-serving bias hypothesis using election studies. Election studies do not generally include explicit questions about who is responsible for changes in respondents' personal welfare. Instead, I measure the extent to which voters hold their government responsible for economic outcomes by examining the correlation between voters' perceptions of the economy and their support for the incumbent government, inferring that a stronger correlation implies that voters believe the government is more responsible. This is a relatively standard assumption in retrospective voting research (e.g., Lewis-Beck and Stegmaier, 2013; Duch and Stevenson, 2008). Following the self-serving bias hypothesis, I expect that voters will hold governing

[1]Another compelling test of the hypothesis would be to use panel data on attributional beliefs to examine whether voters become more likely to blame the government for changes in their personal welfare when they experience a negative (as opposed to positive) income or wealth shock. However, I was unable to find panel data that includes survey items regarding the extent to which the government can affect voters' personal welfare.

politicians more electorally responsible when their personal finances deteriorate than when their personal finances improve.

Study 1 also examines whether there is a similar valence asymmetry when it comes to the national economy. Since an improving national economy reflects neither well nor poorly on the individual voter, the self-serving bias predicts a relatively weaker valence asymmetry. Additionally, the analysis of national economic perceptions may serve as a more general placebo test, showing that those who generally select into negative outcomes (i.e., pessimists) do not differ systematically from those who select into positive outcomes (i.e., optimists) in the extent to which they are politically responsive to economic conditions.

The study uses the American National Election Studies (ANES), the British Election Study (BES), the Danish National Election Studies (DNES), the Australian Election Study (AusES), and the Latinobarómetro. The Latinobarómetro is not a typical election study but rather an annual comparative survey of Latin American countries concerning primarily political matters. It is nevertheless included because long-running election studies are rare outside economically developed contexts, so the Latinobarómetro serves as a substitute, representing less economically developed countries.

In terms of representativeness, the countries studied here span the major fault lines identified by the comparative economic voting literature. In particular, they include countries with high and low clarity of responsibility (Powell and Whitten, 1993; Duch and Stevenson, 2008; Anderson, 2006), presidential and parliamentary systems (Samuels, 2004), as well as more and less developed countries (Singer and Carlin, 2013).

Data and Empirical Strategy

I include all surveys from the ANES (1984-2012), the BES (2001-2017), the AusES (1987-2017) the DNES (1988-2015), and the Latinobarómetro (1995-2010) that ask respondents about how their personal economic situation as well as the national economic situation have developed (see Appendix A).

The dependent variable is support for the incumbent government. In the ANES, this is operationalized as a dummy variable indicating whether the respondent reported voting for the

incumbent presidential party at the presidential election. Denmark, the UK, and Australia have parliamentary systems, and the dependent variable is therefore a dummy variable indicating whether the respondent reported voting for one of the parties in government at the parliamentary election.[2] In Australia, which has two directly elected chambers, I use support for the government in the lower chamber. Since the Latinobarómetro data does not follow election cycles, I cannot use reported voting behavior at elections as the dependent variable. Instead, I use a dummy variable indicating whether the respondent approved of the incumbent president's performance.[3]

The independent variables are voters' evaluations of their own and the national economy. Specifically, I use two questions that were included in all election surveys: how (1) your own and your family's economy and (2) the national economy has developed (the period asked about varies from the last 12 months to the last three years). The responses are sorted in three categories: the economy had stayed the same, the economy had deteriorated, and the economy had improved. I also use a small set of control variables in some parts of the analysis (gender, age, education, and ideology). See Appendix B for a detailed description of how all variables were measured as well as descriptive statistics.

To analyze the data, I model the probability of supporting the incumbent as a linear function of how voters perceive the national and their personal economic situation. I also include survey fixed-effects to control for any election-specific or country-level confounders. For both national and personal economic evaluations, I include the variables as dummy variables using those who thought their own/the national economy had stayed the same as reference category. I estimate the parameters of this linear probability model (LPM) using a linear regression with robust standard errors and estimate separate models for each of the five election studies. In Appendix D, these analyses are replicated using a logistic link function. The results are substantively similar. The main analyses privilege the LPMs because they are easier to interpret.[4]

[2]See Appendix C for analyses that define incumbent supporters as only Prime Minister party voters.

[3]This is the standard dependent variable when estimating retrospective voting models based on Latinobarómetro data (see Carlin and Singh, 2015).

[4]One concern with this model specification is that I do not allow the effect of personal economic perceptions to vary across national economic perceptions and vice versa. As shown in Appendix E, however, there are only

Results

Figure 1 presents the key results from Study 1. In particular, it presents the estimated effect of reporting that the economy is doing *better* rather than the same, the estimated effect of reporting that the economy is doing *worse* rather than the same, and the estimated difference between these effects: the valence asymmetry.[5] The valence asymmetry represents the extent to which voters react more strongly when the economic situation changes for the worse rather than for the better. A positive valence asymmetry means that voters are more sensitive to things getting worse. I present estimates for national as well as personal economic conditions. The underlying regression models for this and subsequent figures can be found in Appendix G.

All election studies are marked by a statistically significant and positive valence asymmetry for personal economic conditions ($p < 0.05$). This is in line with the self-serving bias hypothesis, which predicted a valence asymmetry in the attribution of responsibility for personal welfare. There is no comparable pattern for national economic conditions. In the DNES, improving national economic conditions seem to have a greater effect than deteriorating national economic conditions. The opposite is the case for personal economic conditions. The remaining election studies have no significant valence asymmetry for national economic conditions.

Rather unsurprisingly, Figure 1 also shows that across all election surveys, perceptions of the national economy seem to be more closely related to government support than perceptions of the respondents' personal finances (as suggested by Kinder and Kiewiet, 1981). There are also some differences across the election surveys. Both the Latinobarómetro and the ANES are marked by a clearly statistically significant estimated effect of perceiving one's own economy as improving rather than staying the same. This estimate is insignificant in the other election studies. Even so, in all elections studies, the estimated negative effect of personal welfare is larger than the positive effect.

signs of such a dependence in the DNES, suggesting that it is reasonable to estimate the effects of national and personal economic conditions as independent of each other.

[5] See Appendix F for details on how the valence asymmetry is estimated.

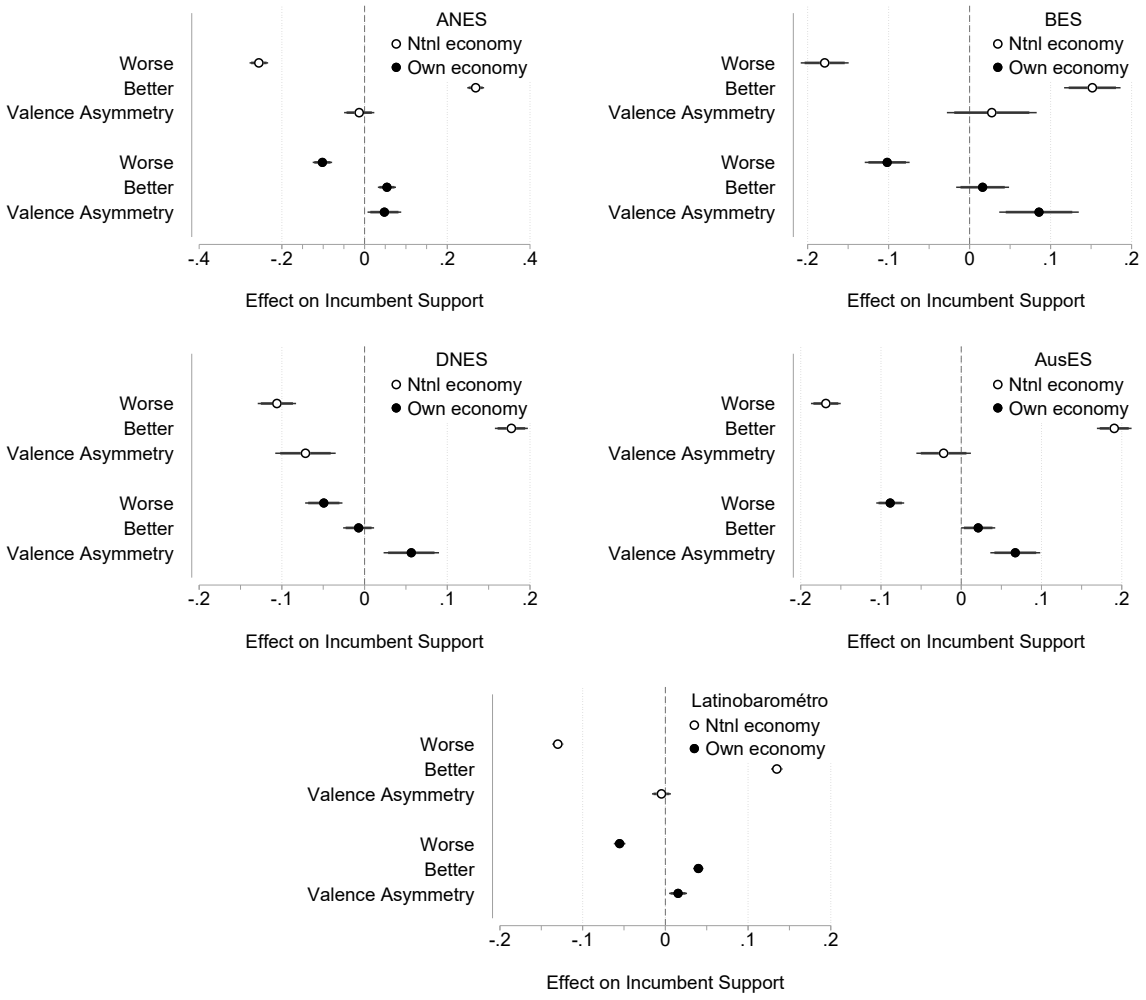

Figure 1: Perceptions of the Economy and Incumbent Support Across Election Studies. Estimated effects of believing your own or the national economy has gotten "worse" or "better" rather than "stayed the same" on voting for/supporting the incumbent government. The valence asymmetry is calculated as the sum of the "worse" and "better" effects divided by -1. Horizontal lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. See Table 1 for sample sizes and Appendix G for the underlying regression models.

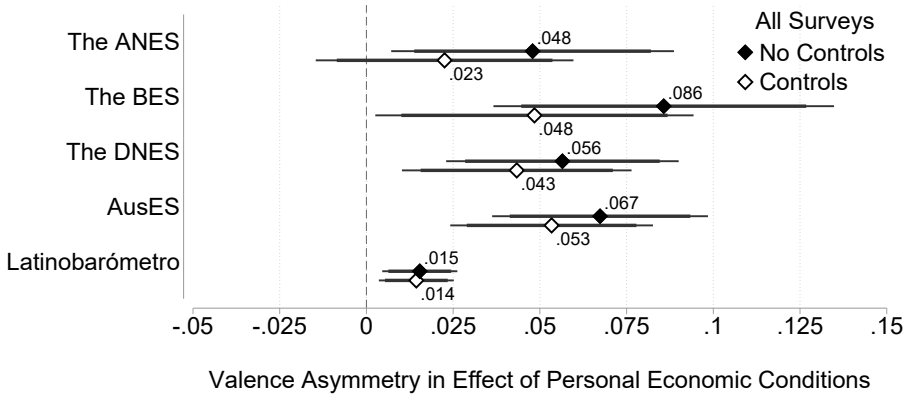

Figure 2: Estimated Valence Asymmetries with Controls across Election Studies. The valence asymmetry is calculated as the sum of the "worse" and "better" effects divided by -1. Horizontal lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals.

To test how this pattern holds up to statistical control, I re-estimate the models including age, gender, education and ideology. These controls are not meant to be exhaustive as they do not control for all possible confounders. Instead, the analysis serves as a simple test of whether the patterns found above can be explained away by including a "standard set of controls."

Figure 2 plots the valence asymmetry estimated from LPMs with controls. For comparison, I also include the estimates from the models without controls. The controls reduce the valence asymmetry somewhat. However, in all election studies except the ANES, the valence asymmetry for the respondents' own economy remains significantly different from zero ($p < 0.05$). The estimated valence asymmetries are remarkably similar across election studies—only the Latinobarómetro stands out with a comparatively small valence asymmetry; perhaps because the dependent variable is presidential approval rather than vote choice.

Across the US, Britain, Denmark, Australia, and in Latin America, I thus find that voters hold the incumbent less electorally responsible for their personal welfare when it improves than when it deteriorates. This asymmetry is not present for the state of the national economy. These findings are especially noteworthy due to the diverse set of contexts analyzed. Signs of a self-serving bias in voting behavior do not seem confined to one particular type of election or country.

While the consistency of the results speaks in favor of the self-serving bias hypothesis, there are some important inferential issues these analyses cannot deal with. First, I assume that dif-

ferences in the effect of economic conditions on incumbent support correspond to differences in the attribution of responsibility. As mentioned, this is a standard assumption in much research on retrospective voting, but it does not necessarily make it valid. Second, I assume that the correlation between how voters perceive the economy and incumbent support reflects a causal effect of the former on the latter. This might not be the case as the variables that determine how voters perceive the economy might have an independent effect on incumbent support (Rudolph, 2003). Studies 2 and 3 include new tests of the self-serving bias hypothesis that address these inferential issues.

Study 2: A Survey of Voters' Attributional Beliefs

Study 2 tests the self-serving bias hypothesis by examining once again the relationship between voters' perception of their personal finances and the extent to which they attribute responsibility for their personal finances to the government. However, instead of inferring attribution of responsibility from voting behavior, it is measured directly by asking voters about the extent to which they believe the government can affect their personal economic situation. Following the self-serving bias hypothesis, I expect that voters who believe that their personal finances are improving will be less likely to think that the government can affect their personal economic situation.

Data and Empirical Strategy

The survey used in Study 2 was collected by a Danish polling company, Epinion, using a population-based sample frame. The survey ran from May 28 to June 28, 2014, included 1,028 respondents, and was conducted over the phone. The sample was diverse although not completely representative of the Danish voting-age population; in particular, it was better educated and slightly older (see Appendix B).

The survey included the following item, which is used as the dependent variable: "To what extent can the Danish government affect your personal economic situation?" As a placebo test, I also examine an alternative dependent variable: "To what extent can the Danish government

affect the national economic situation?" For both questions, answers were recorded on a 5-point scale from "Not at all" to "A lot."

The key independent variable is the same as in Study 1, namely, how voters perceive their personal finances have changed over the past 12 months. Answers were recorded on a 5-point scale from "A lot worse" to "A lot better."

To analyze the data, I estimate a linear regression with attributional beliefs as the dependent variable and personal economic conditions as the independent variable. Age, gender, education, and voters' perception of how the national economic situation developed over the past 12 months are included as controls. The model is estimated with robust standard errors.

Results

Figure 3 presents the main results from Study 2. It shows that voters are less likely to think the government can affect their personal economic situation when their personal finances are improving. The negative slope is significantly different from zero ($p < 0.01$). This is in line with a self-serving bias in attribution of political responsibility since those who are doing better should be motivated to credit themselves rather than the government.

Figure 3 also shows that there is no (or a very weak) relationship for the placebo outcome: beliefs about the government's effect on the national economic situation ($p > 0.35$). This is reassuring because it tells us that people who are doing well do not hold the government less responsible for all types of economic outcomes. They only hold the government less responsible for their own good fortune, not the good fortune of the nation.

Study 3: Survey Experiments

Study 3 tests the self-serving bias hypothesis using a set of survey experiments that randomly assign voters to vignettes describing different outcomes and then ask them to evaluate the government's responsibility for these outcomes. The key test of the self-serving bias hypothesis is whether voters hold the government more responsible for negative (as opposed to positive) outcomes when these outcomes are related to voters' personal welfare.

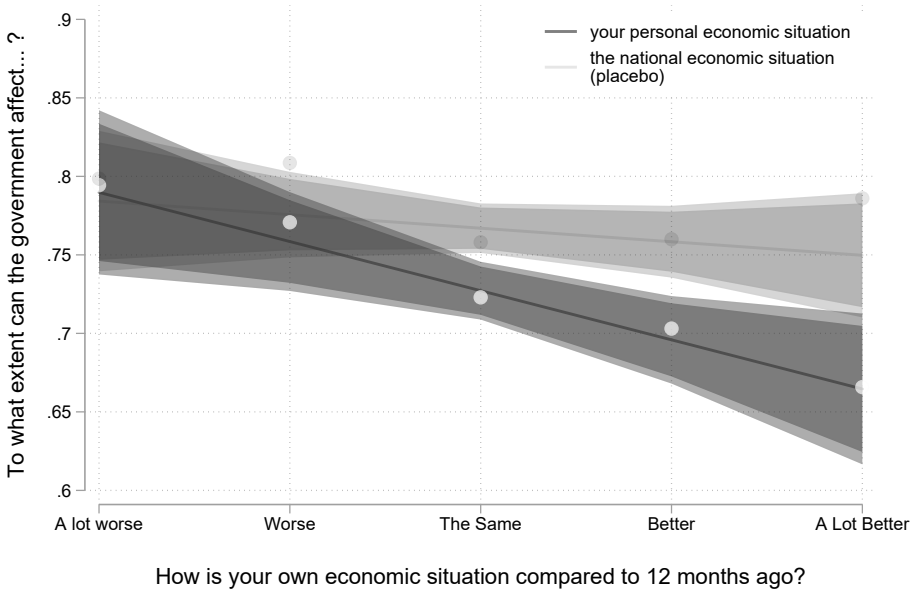

Figure 3: Perceptions of personal economic conditions and attributional beliefs. Linear fit with 90 and 95 pct. confidence intervals. Linear fit for beliefs about the government's effect on voters' personal economy shown in dark shaded areas and beliefs about the government's effect on the national economy in light shaded areas. Dots are marginal means from regression with personal economic conditions as a set of dummies. Light dots represent average beliefs about the government's effect on voters' personal economy and dark dots beliefs about the government's effect on the national economy.

By randomly assigning economic outcomes to voters, I address a key problem with the analyses in Study 1 and 2: observed economic outcomes are endogenous to assignment of responsibility. In the previous analyses, I have estimated the effect of economic outcomes on the assignment of political responsibility by comparing voters who believe an outcome is improving with voters who believe the same outcome is deteriorating. This is potentially problematic as voters with specific propensities to attribute responsibility to the government may select, inadvertently or intentionally, into specific types of beliefs about the economy (Rudolph, 2003, 2006). By assigning outcomes at random, we can be sure that voters' propensity to hold the government responsible is balanced in expectation across those assigned to positive and negative outcomes.

Ideally, I would assign actual positive and negative changes in personal welfare to individuals at random and then measure whom they held responsible for these changes. However, this is neither practically feasible nor ethically defensible. Instead, the experiments in this article use hypothetical vignettes. This is a fairly common technique (see, e.g., Tomz and Van Houweling, 2009 or Aarøe and Petersen, 2014), and studies have shown that when respondents are confronted with hypothetical situations in vignettes, their behavior mirrors their behavior in similar real-world situations (Hainmueller, Hangartner and Yamamoto, 2015).

It is important to note that a vignette survey experiment is a relatively hard test of the self-serving bias in the sense that people do not actually experience the outcomes described in the vignette. This potentially mutes the affective response that might drive motivated reasoning when respondents face a realized undesirable outcome (Lodge and Taber, 2013). If anything, the experimental design therefore biases the findings against the self-serving bias hypothesis.

Data and Empirical Strategy

We rely on three separately collected survey experiments. The first survey experiment was conducted by Norstat, a Danish polling company, from June 2-4, 2015, and sampled 1,002 respondents. The second survey experiment was an exact pre-registered replication of the first. It was conducted by the Danish branch of YouGov from March 4-15, 2019, and sampled 3,014 respondents. The third survey experiment was also pre-registered and conducted by YouGov

from June 14-19, 2019, sampling 2,016 respondents.[6] The target population for all three survey experiments was the Danish voting-age population.

The first survey experiment presented voters with two experimentally manipulated outcomes; one related to housing and one related to employment. For each of the two outcomes, respondents were presented with one of four versions (positive v. negative $\times$ personal v. national).[7] Respondents were then asked: "To what extent would the government be responsible for this outcome?" Answers were given on an 11-point point scale from "Not at all" to "A great deal". The variable was rescaled to go from zero to one. Specifically, respondents were presented with one of the following hypothetical outcomes for housing (H1-H4) and for employment (E1-E4):

H1-H2: Imagine that the price of your or your family's house [increases/decreases].[8]

H3-H4: Imagine that the price of housing in the country as a whole [increases/decreases].

E1-E2: Imagine that you or someone in your family [lost their job/got a better job].

E3-E4: Imagine that unemployment in the country as a whole [increases/decreases].

The housing and employment outcomes have different inferential strengths and weaknesses. The balance across negative and positive outcomes is strong for housing prices but weaker for employment status. As such, there might be different causal processes involved in losing a job and getting a better job, whereas the causal processes involved in increasing and decreasing housing prices are more similar. At the same time, it might be difficult for voters to figure out

[6]The pre-registrations for the second and third survey experiment can be found at `https://osf.io/29jfb` and `https://osf.io/a83pj` respectively.

[7]The first two experiment also included a neutral version that presented both negative and positive outcomes (e.g., imagine that the price of housing in the country increases or decreases). Following the advice of several of the anonymous reviewers, I decided to omit the neutral category from the article as it was not clear how it helped test the self-serving bias hypothesis. For transparency, results including the neutral category are reported in Appendix H.

[8]The positive economic outcome in this case is rising house prices whereas falling prices is the negative outcome, because changes in house prices are a de facto wealth shock (Ansell, 2014).

what implications rising or falling house prices have for their personal welfare; that is, whether their own housing outcome is in fact positive or negative. Conversely, almost all voters should understand that getting a better job is a desirable outcome and that losing a job is undesirable. All in all, the housing outcomes thus provide a harder test of the self-serving bias hypothesis than the employment outcomes. By including both outcomes, the experiment should provide a fair overall test of the hypothesis.

The second experiment is an exact replication of the first, but the randomization schedule is adjusted to reflect the special interest in outcomes related to personal welfare. Two-thirds of the respondents in the second were presented with a personal outcome (i.e., the outcomes E1-E2/H1-H2 described above) and one-third with a national outcome (i.e., the outcomes E3-E4/H3-H4) in the second experiment.

The first two experiments test whether voters hold the government more responsible for negative changes than for positive changes in personal welfare. They also test whether this reflects a general negativity bias in political attributions by examining how voters respond to negative and positive changes in national welfare. The third experiment tests some additional implications of the self-serving bias.

First, it examines whether voters hold themselves less responsible for negative (as opposed to positive) changes in personal welfare. To do so, it presents respondents with the personal housing outcomes (H1-H2) and then asks them, "To what extent would you and your family be responsible for this outcome?" Second, it examines whether there is something special about personal outcomes that might be driving the differences in how voters assign political responsibility for positive and negative outcomes, even when there is no self-serving motive to attribute responsibility asymmetrically. To do so, respondents are presented with a slightly different set of personal housing outcomes. Instead of evaluating whether the government would be responsible for changes in the price of their own/their family's house, respondents are asked whether the government is responsible for "the price of a house [increasing/decreasing]." Asking about the change in prices of *a* house mutes respondents' self-serving motives, yet the outcome is still personal in scope. The third experiment thus has four treatment conditions related to housing: the two personal housing outcomes with a different dependent variable and

two adjusted personal housing outcomes with the same dependent variable as in the first two experiments. The third experiment focuses only on the housing outcomes because, as argued above, the housing outcomes provide a harder test of the self-serving bias hypothesis than the employment outcomes.

In analyzing these experiments, I set up linear models that use voters' attribution of responsibility for the housing and unemployment outcomes as the dependent variables. The independent variables are the different experimental treatments. The models are estimated using a linear regression with robust standard errors.

Results

Figure 4 presents the results from the first two survey experiments. In the top panel, I examine the effects of the personal housing and employment outcomes. Across both types of outcomes, a similar pattern emerges: voters who were assigned to a positive outcome thought the government was *less* responsible for this outcome than voters assigned to a negative outcome ($p < 0.001$). This is in line with the self-serving bias hypothesis. In the bottom panel of Figure 4, I examine the effects of the national housing and employment outcomes. Across both outcomes, voters are more likely to hold the government responsible for the positive outcome ($p < 0.01$). The exact opposite of what was found for personal economic outcomes in the top panel. This is important because it suggests that voters do not generally hold the government more responsible for negative outcomes—voters only hold the government more responsible for negative outcomes when they have a self-serving motive to do so.

Turning to the third survey experiment, the left panel of Figure 5 shows the extent to which voters regard the government as being responsible for the price of *a* house either increasing or decreasing. For comparison, I also plot responses from the first two experiments where respondents were asked about their or their family's house. The figure shows that when asked to evaluate who is responsible for changes in the price of an unspecified house, voters hold the government more responsible for positive changes ($p < 0.01$), but when they have to evaluate the extent to which the government is responsible for changes in the price of their own house, they hold the government more responsible for the negative changes (as was shown above).

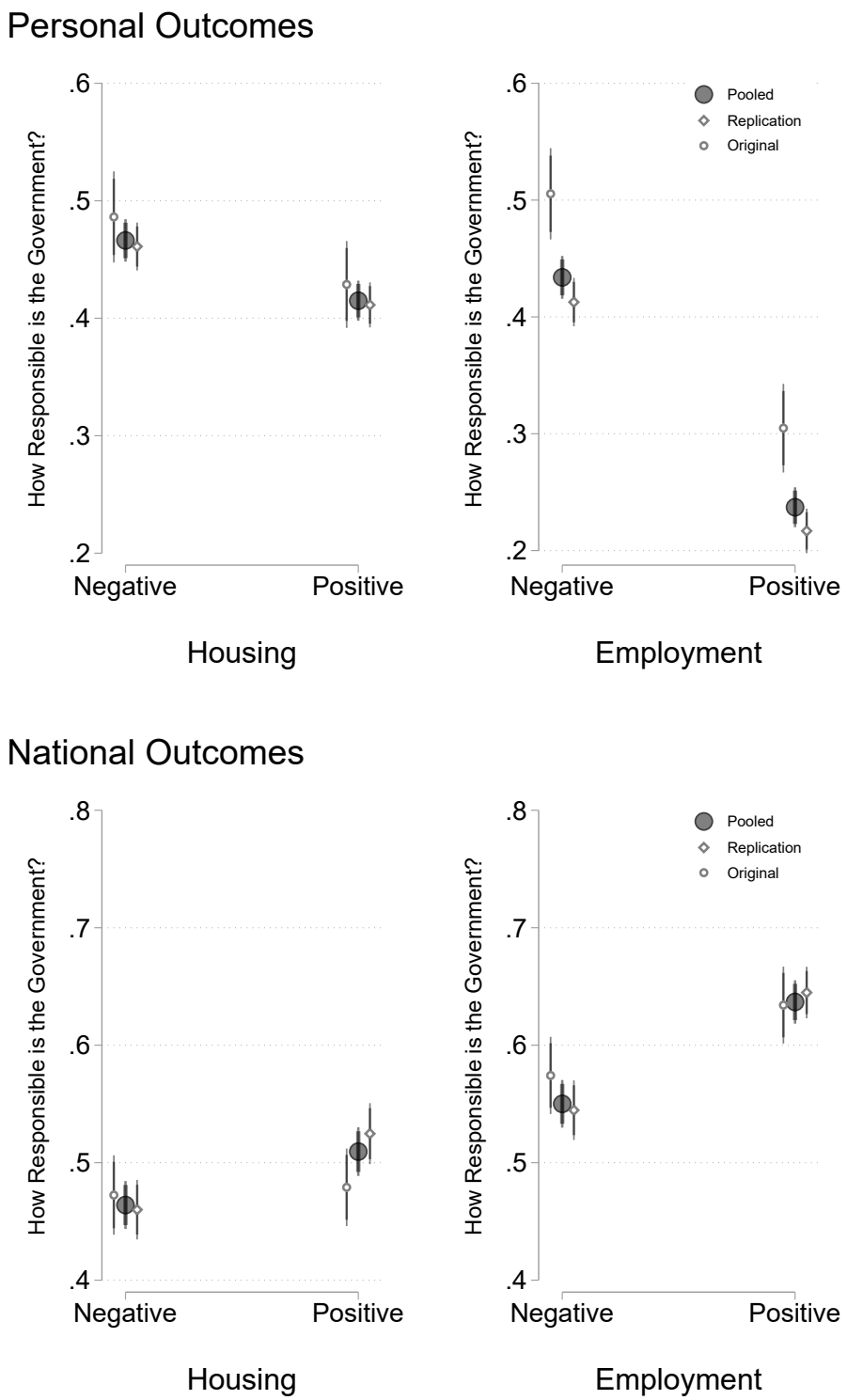

Figure 4: Government responsibility for negative and positive hypothetical changes in personal and national welfare. Dots represent average responses for each outcome. The smaller dots represent results from the original experiment (circles) and the replication (diamonds) separately. The larger dots represent pooled results. Vertical lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. There are at least 830 observation in each treatment condition for personal outcomes and at least 505 observations in each treatment condition for the national outcomes.

This is consistent with the self-serving bias because voters have no self-serving motive to hold the government less responsible for increases (as opposed to decreases) in the price of some house, but they do have a self-serving motive when it comes to the price of their own house, where rising and falling prices suggest that they have been either prudent or poor investors.

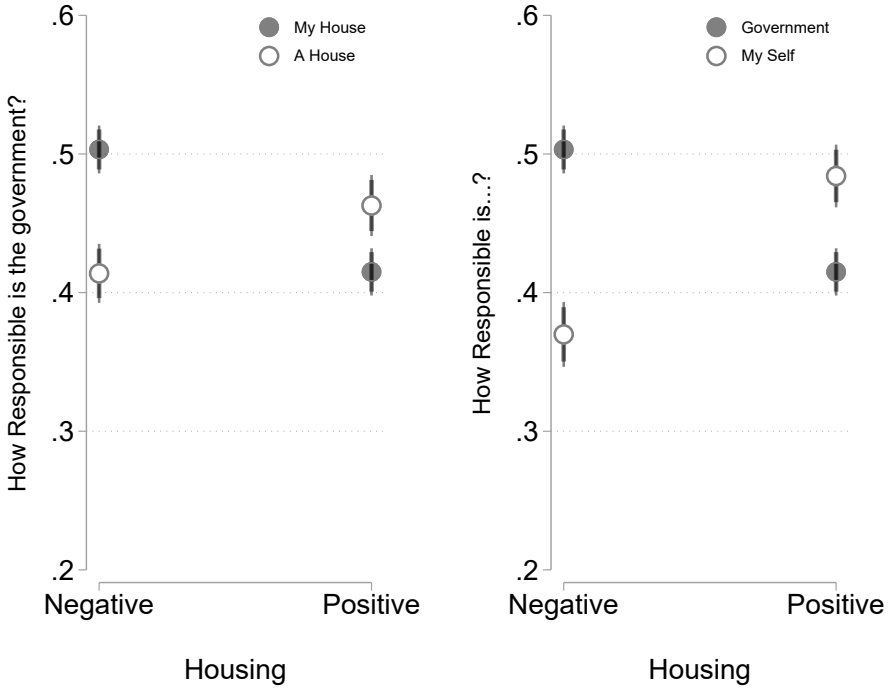

Figure 5: Testing Additional Implications of the Self-Serving Bias. Dots represent average responses for each outcome. Vertical lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. Light dots are from the third experiment with at least 500 observations in each treatment condition. Dark dots are the pooled estimates from the top left panel of Figure 4.

Since this article is interested in the political consequences of the self-serving bias, it has exclusively examined whether voters hold the government more responsible for negative changes than for positive changes in their personal welfare. However, another clear implication of the self-serving bias is that voters should hold themselves less responsible for negative changes than for positive changes in their personal welfare. The right panel of Figure 5 presents some evidence for this contention, showing that voters hold themselves less responsible for decreasing than for increasing house prices ($p < 0.001$).

Taken together, the three survey experiments provide clear causal evidence of the self-serving bias hypothesis: voters hold the government more responsible for negative changes

than for positive changes in their personal welfare. Consistent with this pattern being a result of a self-serving bias, I have also shown that there is no similar valence asymmetry in how voters hold the government responsible for changes in national welfare or for changes in the welfare of some other person. Finally, and in line with the self-serving bias in attribution, I have presented some evidence that suggests voters hold themselves more responsible for positive changes than for negative changes in their personal welfare.

Conclusion

People tend to exculpate themselves for undesirable outcomes yet implicate themselves in desirable outcomes. In this article, I have argued that this self-serving bias in attribution has important implications for how voters attribute political responsibility for changes in their personal welfare. In particular, I have found that voters shift blame toward the government when their personal welfare changes for the worse and shift credit away from the government when their personal welfare changes for the better.

I found evidence of such a self-serving bias in political attribution in a number of different places. For one, I showed that voters in Australia, Britain, Denmark, the US, and a large number of Latin American countries punish their governments more for negative changes in their personal finances than they reward their governments for positive changes in their personal finances. I have also shown that when voters think their economic situation is getting better, they are less likely to believe the government can influence their economic situation. Finally, I have shown that if we ask voters how responsible the government is for hypothetical changes in their personal welfare in survey experiments, then they are more likely to hold the government responsible for negative as opposed to positive changes. At the same time, both in the election studies and in the survey experiments, I have shown that voters are *not* more likely to hold the government responsible for negative changes in national welfare, which is consistent with the self-serving bias in that voters have no self-serving motive to attribute responsibility for national welfare asymmetrically. In the survey experiments, I also examined some additional implications of the self-serving bias, showing that voters hold themselves less responsible for

negative changes in personal welfare, and that when they are asked to evaluate who is responsible for someone else's personal welfare, voters are not more likely to hold the government responsible for negative changes.

One limitation of the studies presented here is that they are not able to examine whether the self-serving bias is primarily driven by voters holding the government more responsible for negative changes or less responsible for positive changes in personal welfare. The literature on the self-serving bias provides some guidance here, suggesting that the effect is the same in both directions (e.g., Heider, 2013), but there is little evidence to back this assertion. Moreover, this article is silent on exactly how voters should attribute responsibility for personal welfare. Instead, it simply suggests that the tendency to attribute responsibility asymmetrically is problematic, because politicians have the capacity to both improve and impair voters' personal welfare.

This article has important implications for the existing literature on how voters attribute political responsibility for social and economic outcomes. Previous work has focused on attribution for events that are national in scope, like the national economy (Duch and Stevenson, 2008; Alcañiz and Hellwig, 2011) national emergencies (Malhotra and Kuo, 2008; Healy, Kuo and Malhotra, 2014) or how the government handles public service provision (Tilley and Hobolt, 2011; although see Tilley, Neundorf and Hobolt, 2018). This study underscores the importance of also focusing on how voters attribute blame for outcomes that are more personal in nature (Kinder and Kiewiet, 1979; Feldman, 1982; Giuliano and Spilimbergo, 2013; Ansell, 2014). In particular, it appears that voters can potentially attach political significance to personal economic outcomes, although, as this study has shown, they will tend to do so in a self-serving manner.

Most importantly, the findings should give pause to anyone who thinks that democratic accountability can proceed from voters punishing and rewarding the government for changes in their personal welfare. While changes in personal welfare are easily observable (Fiorina, 1981) and do, at least to some extent, reflect government action, they are by definition *personal* to the voters, meaning that motivations such as self-protection and self-enhancement influence how voters attribute political responsibility for these changes. As this article has demonstrated, the

result is that voters will tend not to credit the government for positive changes in their personal welfare yet blame them for negative changes. Therefore, politicians who promote voters' personal welfare will tend to be re-elected at the same rate as politicians who do not, minimizing the prospects for reduction in moral hazard and adverse selection that ideally accompany elections. Simply put, the self-serving bias undermines democratic accountability for personal welfare.

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Online Appendix for "How Do Voters Hold Politicians Accountable for Personal Welfare? Evidence of a Self-Serving Bias". The Journal of Politics.

Contents

A Surveys Included in Study 1

Election surveys from the US: 1980, 1984, 1988, 1992, 1996, 2000, 2004, 2008 and 2012. For details, see: http://www.electionstudies.org/studypages/anes_timeseries_cdf/anes_timeseries_cdf.htm

Election surveys from the UK: 2001, 2005, 2010, 2015 and 2017. For details, see: https://www.britishelectionstudy.com/data-objects/cross-sectional-data/

Election surveys from Denmark: 1990, 1994, 2001, 2005, 2007, 2011 and 2015. For details, see http://www.valgprojektet.dk/default.asp?l=eng.

Election surveys from Australia: 1987, 1990, 1993, 1996, 1998, 2004, 2007, 2010, 2013 and 2016. For details, see https://australianelectionstudy.org/voter-studies/.

Election surveys in the Latinobarómetro: Table A1 shows the countries included in the Latinobarómetro and the number of years that these countries have been surveyed. For details, see: http://www.latinobarometro.org/latContents.jsp

Table A1: List of included surveys from the Latinobarómetro

Country	First year	Last year
Argentina	1995	2010
Bolivia	1996	2010
Brazil	1995	2010
Chile	1995	2010
Colombia	1996	2010
Costa Rica	1996	2010
Dominican Republic	2004	2010
Ecuador	1996	2010
El Salvador	1996	2010
Guatemala	1996	2010
Honduras	1996	2010
Mexico	1995	2010
Nicaragua	1996	2010
Panama	1996	2010
Paraguay	1995	2010
Peru	1995	2010
Spain	1996	2010
Uruguay	1995	2010
Venezuela	1995	2010

B Variable Descriptions and Descriptive Statistics

The ANES uses the following question with answers falling in one of the three categories "better," "worse," and "the same":

- Country: "Would you say that over the past year the nation's economy has gotten better, stayed about the same or gotten worse?"
- Own: "We are interested in how people are getting along financially these days. Would you say that you and your family living here are better off or worse off financially than you were a year ago?"

The BES used the following questions, with answers falling in one of the five categories "got a little better," "got a lot better," "got a little worse," "got a lot worse," and "stayed the same":

- Country: "How do you think the general economic situation in this country has changed over the last 12 months?"
- Own: "How does the financial situation of your household now compare with what it was 12 months ago?"

The DNES used the following questions, with answers falling in one of the five categories "better," "a lot better," "worse," "a lot worse," and "the same":

- Country: "How is the economic situation in Denmark today compared to one year ago?"
- Own: "How is your and your family's economic situation today compared to one year ago?"

The AusES used the following questions, with answers falling in one of the five categories "got a little better," "got a lot better," "got a little worse," "got a lot worse," and "about the same":

- Country: "How does the general economic situation now compare with what it was 12 months ago?"
- Own: " How does the financial situation of your household now compare with what it was 12 months ago?"

In some more recent surveys the question about the country's economy is "How does the general economic situation in Australia now compare with what it was 12 months ago?".

The DK-OPT survey from study 2 used the following questions, with answers falling in one of the five categories "better," "a lot better," "worse," "a lot worse," and "the same":

- Country: "How is the economic situation in Denmark today compared to one year ago?"

- Own: "How is your and your family's economic situation today compared to one year ago?"

The Latinobarometro has used two set of questions for the economic perceptions questions. From 1995-2000, the following questions were used:

- Country: "Do you consider the current economic situation of the country to be better, about the same, or worse than 12 months ago?"
- Own: "Do you consider your economic situation and that of your family to be better, about the same, or worse than 12 months ago?"

From 2001— the following questions were used:

- Country: "Do you consider the current economic situation of the country to be much better, a little better, about the same, a little worse, or much worse than 12 months ago?"
- Own: "Do you consider your economic situation and that of your family to be much better, a little better, about the same, a little worse, or much worse than 12 months ago?"

Controls: *Education* is measured using a dummy indicating whether the respondent reported having attended college/university (including nursing and teaching certificates in the UK). Ideology is measured on a scale from left (0 or 1) to right (10) in the the BES, the DNES, the AusES and the Latinobarómetro. In the ANES, ideology is measured on a 7-point scale going from "extremely liberal" to "extremely conservative." Those who refused to answer or answered don't know to the question about ideology were placed at the midpoint of the scale. *Gender* is coded 1 for female and 0 for male. *Age* is measured in years.

Tables C1-C8 present descriptive statistics from the election studies, the survey on attributions and the survey experiments.

Table B1: Descriptive statistics, ANES

	Mean	SD	Min	Median	Max	n
Vote for presidential party	0.52	0.50	0.00	1.00	1.00	12252
Ideology	4.00	1.35	1.00	4.00	7.00	12252
State of personal economy	1.18	0.80	0.00	1.00	2.00	12252
State of country's economy	0.97	0.78	0.00	1.00	2.00	12252
Some college	0.63	0.48	0.00	1.00	1.00	12252
Age	49.09	16.76	17.00	49.00	93.00	12252
Woman (ref: man)	0.54	0.50	0.00	1.00	1.00	12252

Table B2: Descriptive statistics, BES

	Mean	SD	Min	Median	Max	n
Vote for party in government	0.41	0.49	0.00	0.00	1.00	5873
Vote for prime minister party	0.38	0.49	0.00	0.00	1.00	5873
Ideology	4.89	1.99	0.00	5.00	10.00	5873
State of personal economy	0.73	0.79	0.00	1.00	2.00	5873
State of country's economy	0.96	0.75	0.00	1.00	2.00	5873
Some college	0.37	0.48	0.00	0.00	1.00	5873
Age	52.81	16.81	18.00	53.00	99.00	5873
Woman (ref: man)	0.51	0.50	0.00	1.00	1.00	5873

Table B3: Descriptive statistics, DNES

	Mean	SD	Min	Median	Max	n
Vote for party in government	0.34	0.47	0.00	0.00	1.00	12391
Vote for prime minister party	0.26	0.44	0.00	0.00	1.00	12391
Ideology	5.23	2.42	0.00	5.00	10.00	12391
State of personal economy	0.88	0.91	0.00	1.00	2.00	12391
State of country's economy	1.20	0.85	0.00	1.00	2.00	12391
Some college	0.33	0.47	0.00	0.00	1.00	12391
Age	48.32	16.98	16.00	47.00	102.00	12391
Woman (ref: man)	0.47	0.50	0.00	0.00	1.00	12391

Table B4: Descriptive statistics, AusES

	Mean	SD	Min	Median	Max	n
Vote for party in government	0.43	0.50	0.00	0.00	1.00	15904
Vote for prime minister party	0.41	0.49	0.00	0.00	1.00	15904
Ideology	4.78	2.02	0.00	5.00	10.00	15904
State of personal economy	0.75	0.76	0.00	1.00	2.00	15904
State of country's economy	0.90	0.73	0.00	1.00	2.00	15904
Some college	0.45	0.50	0.00	0.00	1.00	15904
Age	49.18	16.43	18.00	49.00	102.00	15904
Woman (ref: man)	0.50	0.50	0.00	1.00	1.00	15904

Table B5: Descriptive statistics, Latinobarometro

	Mean	SD	Min	Median	Max	n
Approve of president	0.53	0.50	0.00	1.00	1.00	112096
Ideology	5.35	2.77	0.00	5.00	10.00	112096
State of personal economy	0.87	0.86	0.00	1.00	2.00	112096
State of country's economy	0.91	0.78	0.00	1.00	2.00	112096
Some university	0.07	0.25	0.00	0.00	1.00	112096
Age	38.92	16.07	16.00	36.00	99.00	112096
Woman (ref: man)	0.49	0.50	0.00	0.00	1.00	112096

Table B6: Descriptive statistics, DK-OPT survey

	Mean	SD	Min	Median	Max	n
Government responsible for national economy	0.77	0.24	0.00	0.75	1.00	943
Government responsible for repondent's economy	0.72	0.29	0.00	0.75	1.00	943
State of personal economy	2.13	0.79	0.00	2.00	4.00	943
State of country's economy	2.49	0.74	0.00	3.00	4.00	943
Some college	0.48	0.50	0.00	0.00	1.00	943
Age	52.68	17.49	19.00	55.00	97.00	943
Woman (ref: man)	0.48	0.50	0.00	0.00	1.00	943

Table B7: Descriptive statistics, Experiment 1–2

	Mean	SD	Min	Median	Max	n
Responsibility housing	0.48	0.25	0.00	0.50	1.00	4016
Responsibility employment	0.45	0.29	0.00	0.50	1.00	4016
Exp. 2	0.75	0.43	0.00	1.00	1.00	4016

Table B8: Descriptive statistics, Experiment 3

	Mean	SD	Min	Median	Max	n
Personal responsibility	0.43	0.27	0.00	0.44	1.00	1009
Government responsibility	0.44	0.25	0.00	0.44	1.00	1007

C Analyses Using Prime Minister Parties

The analyses of the AuSES, the BES, and the DNES used support for all governing parties as the dependent variable, yet some argue that it is primarily the Prime Minister party which is punished and rewarded for the state of the economy in parliamentary democracies (e.g., Duch and Stevenson, 2008). Figure C1 compares estimates of the valence asymmetry from analyses using only governing parties and only the prime minister party as the dependent variable. The results are quite similar across both types of analyses, although the estimated valence asymmetry from the DNES is somewhat smaller and no longer significantly different from zero.

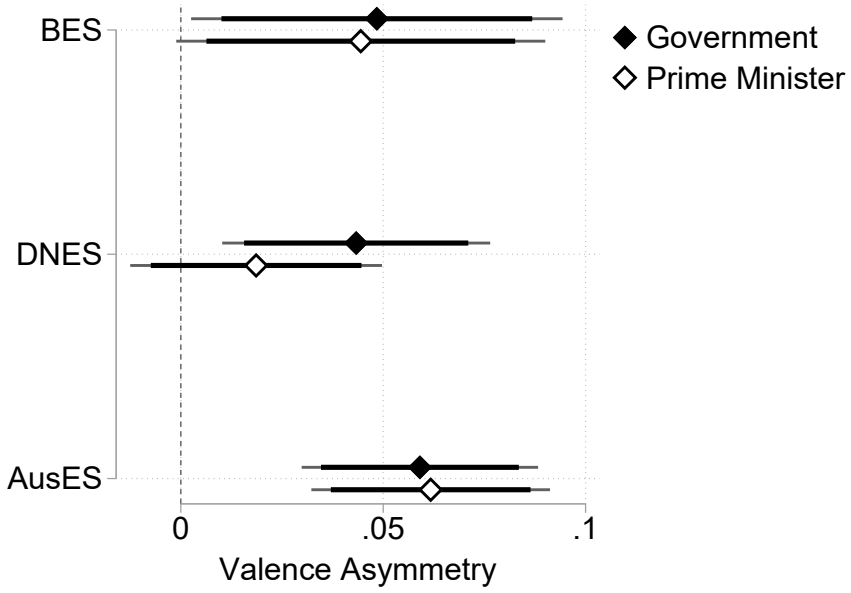

Figure C1: Estimated valence asymmetries for different dependent variables. Based on models which include controls (i.e., gender, age, education and ideology). Horizontal lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals.

D Logistic Regressions

Tables D1, E2, D3, E4 and D5 present logistic regressions using the same dependent and independent variables as the LPMs used to produce the main results in Study 1. The results of these analyses are similar to those found in Study 1. In particular, the estimated logit coefficients suggest that the effect of being worse off is larger than the effect of being better off for personal economic conditions. There is no similar valence asymmetry in the effect of national economic conditions.

Table D1: Logistic regression of voting for party in government (ANES)

	(1)	(2)
Worse off - own economy	-0.51*	-0.47*
	(0.06)	(0.07)
Better off - own economy	0.27*	0.30*
	(0.05)	(0.06)
Worse off - national economy	-1.12*	-0.94*
	(0.05)	(0.06)
Better off - own economy	1.37*	1.22*
	(0.06)	(0.07)
Female (ref:male)		0.16*
		(0.05)
Some college ore more (ref: none)		-0.08
		(0.05)
Ideology		1.03*
		(0.03)
Age		0.00
		(0.00)
Pseudo R^2	0.18	0.34
Observations	12,252	12,252

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table D2: Logistic regression of voting for party in government (BES)

	(1)	(2)
Worse off - own economy	-0.49*	-0.39*
	(0.07)	(0.07)
Better off - own economy	0.07	0.16*
	(0.07)	(0.08)
Worse off - national economy	-0.82*	-0.68*
	(0.07)	(0.07)
Better off - own economy	0.63*	0.55*
	(0.07)	(0.08)
Female (ref:male)		0.11+
		(0.06)
Some college ore more (ref: none)		-0.21*
		(0.06)
Ideology		0.49*
		(0.02)
Age		0.01*
		(0.00)
Pseudo R^2	0.08	0.19
Observations	5,873	5,873

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table D3: Logistic regression of voting for party in government (DNES)

	(1)	(2)
Worse off - own economy	-0.26*	-0.19*
	(0.06)	(0.06)
Better off - own economy	-0.04	0.07
	(0.04)	(0.05)
Worse off - national economy	-0.61*	-0.65*
	(0.07)	(0.07)
Better off - own economy	0.81*	0.78*
	(0.05)	(0.05)
Female (ref:male)		0.08*
		(0.04)
Age		0.01*
		(0.00)
Some college ore more (ref: none)		-0.18*
		(0.04)
Ideology		0.15*
		(0.01)
Pseudo R^2	0.04	0.08
Observations	12,391	12,391

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table D4: Logistic regression of voting for party in government (AusES)

	(1)	(2)
Worse off - own economy	-0.41*	-0.41*
	(0.04)	(0.04)
Better off - own economy	0.09+	0.13*
	(0.05)	(0.05)
Worse off - national economy	-0.76*	-0.73*
	(0.04)	(0.05)
Better off - own economy	0.81*	0.72*
	(0.05)	(0.05)
Female (ref:male)		-0.07+
		(0.04)
Some college ore more (ref: none)		-0.25*
		(0.04)
Ideology		0.42*
		(0.01)
Age		0.01*
		(0.00)
Pseudo R^2	0.09	0.18
Observations	15,904	15,904

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table D5: Logistic regression of voting for party in government (Latinobar.)

	(1)	(2)
Worse off - own economy	-0.28*	-0.29*
	(0.02)	(0.02)
Better off - own economy	0.20*	0.22*
	(0.02)	(0.02)
Worse off - national economy	-0.61*	-0.63*
	(0.02)	(0.02)
Better off - own economy	0.71*	0.71*
	(0.02)	(0.02)
Female (ref:male)		0.01
		(0.01)
Some college ore more (ref: none)		-0.20*
		(0.03)
Age		0.01*
		(0.00)
Ideology		0.03*
		(0.00)
Pseudo R^2	0.19	0.19
Observations	112,096	112,096

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

E Interaction Models

Tables E1, E2, E3, E4 and E5 present models interacting voters perception of their personal finances and their country's economy for each of the five election studies. I code the 3-point national and personal economic perceptions variables so that -1 means that the respondent believes the economic situation is doing worse, 0 means that respondent believes the economic situation is unchanged, and 1 means that they believe it is doing better. I estimate the interaction effect of personal and national economic perceptions using a set of LPM models with and without controls for each of the different election studies.

The interaction effect is only statistically significant in the DNES. There is no significant interaction effect in the remaining four election studies. This suggests that it is probably reasonable to estimate the effects of national and personal economic conditions as independent of each other.

Table E1: Interaction model of voting for party in government (ANES)

	(1)	(2)
Own Econmy	0.08*	0.06*
	(0.01)	(0.00)
National economy	0.26*	0.18*
	(0.01)	(0.01)
Interaction	-0.01	-0.01
	(0.01)	(0.01)
Female (ref:male)		0.02*
		(0.01)
Some college ore more (ref: none)		-0.02*
		(0.01)
Age		0.00
		(0.00)
Ideology		0.15*
		(0.00)
σ	0.44	0.40
R^2	0.23	0.37
Observations	12,252	12,252

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table E2: Interaction model of voting for party in government (BES)

	(1)	(2)
Own Econmy	0.06*	0.05*
	(0.01)	(0.01)
National economy	0.17*	0.12*
	(0.01)	(0.01)
Interaction	0.00	0.01
	(0.01)	(0.01)
Female (ref:male)		0.02+
		(0.01)
Some college ore more (ref: none)		-0.04*
		(0.01)
Ideology		0.09*
		(0.00)
σ	0.46	0.43
R^2	0.10	0.23
Observations	5,873	5,873

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table E3: Interaction model of voting for party in government (DNES)

	(1)	(2)
Own Econmy	0.01*	0.02*
	(0.01)	(0.01)
National economy	0.15*	0.14*
	(0.01)	(0.01)
Interaction	0.02*	0.01*
	(0.01)	(0.01)
Female (ref:male)		0.02*
		(0.01)
Age		0.00*
		(0.00)
Some college ore more (ref: none)		-0.04*
		(0.01)
Ideology		0.03*
		(0.00)
σ	0.46	0.45
R^2	0.05	0.09
Observations	12,391	12,391

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table E4: Interaction model of voting for party in government (AusES)

	(1)	(2)
Own Econmy	0.06*	0.06*
	(0.01)	(0.01)
National economy	0.18*	0.15*
	(0.01)	(0.01)
Interaction	-0.00	-0.01
	(0.01)	(0.01)
Female (ref:male)		-0.01+
		(0.01)
Some college ore more (ref: none)		-0.05*
		(0.01)
Ideology		0.08*
		(0.00)
Age		0.00*
		(0.00)
σ	0.47	0.44
R^2	0.12	0.22
Observations	15,904	15,904

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+$ $p < 0.10$, * $p < 0.05$

Table E5: Interaction model of voting for party in government (Latinobar.)

	(1)	(2)
Own Econmy	0.05*	0.05*
	(0.00)	(0.00)
National economy	0.13*	0.13*
	(0.00)	(0.00)
Interaction	0.00	0.00
	(0.00)	(0.00)
Female (ref:male)		0.00
		(0.00)
Age		0.00*
		(0.00)
Some college ore more (ref: none)		-0.04*
		(0.01)
Ideology		0.01*
		(0.00)
σ	0.44	0.44
R^2	0.24	0.24
Observations	112,096	112,096

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+$ $p < 0.10$, * $p < 0.05$

F Estimating the Valence Asymmetry

The model used to analyze the election studies can be written as

$$Pr(y_{it} = 1) = \beta_0 + \beta_1 natwor_{it} + \beta_2 natbet_{it} + \beta_3 perwor_{it} + \beta_4 perbet_{it} + \epsilon_{it}. \quad (1)$$

Here, y is the dependent variable, support for the incumbent, $natwor$ and $natbet$ are dummies indicating whether the respondent believes the national economy is doing better or worse, $perwor$ and $perbet$ are dummies indicating whether the respondent believes their personal finances are doing better or worse, and ϵ_{it} is the error term.

When estimating the valence asymmetry I am interested in how much larger the negative "worse" effect is than the positive "better" effect. In terms of Model 1 the relevant valence asymmetries can be defined as $\beta_1 + \beta_2 = \theta_n$ and $\beta_3 + \beta_4 = \theta_p$, where a negative θ implies that the negative "worse" effect is larger than the positive "better" effect. (Note that I divide θ_p and θ_n by -1 when reporting them in Study 1, meaning that positive values come to represent that the negative effect is larger than the positive effect.)

θ_n, the valence asymmetry for the national economy, and θ_p, the valence asymmetry for the personal economy, are not estimated directly in Model 1. Instead, I estimate a slightly modified version of Model 1. In particular, I incorporate θ_p and θ_n into the models by decomposing the "worse" effect into the valence asymmetry (θ) and the "better" effect (β_2 for national and β_4 for personal economic conditions),

$$Pr(y_{it} = 1) = \beta_0 + (\theta_n - \beta_2) natwor_{it} + \beta_2 natbet_{it} + (\theta_p - \beta_4) perwor_{it} + \beta_4 perbet_{it} + \epsilon_{it}, \quad (2)$$

which can be rearranged as

$$Pr(y_{it} = 1) = \beta_0 + \theta_n natwor_{it} + \beta_2 (natbet_{it} - natwor_{it}) + \theta_p perwor_{it} + \beta_4 (perbet_{it} - perwor_{it}) + \epsilon_{it}. \quad (3)$$

This linear probability model includes θ_p and θ_n directly, and it can be estimated by creating new variables for national and personal economic perceptions that subtract the "worse" dummies from the "better" dummies. A linear probability model like this one is used to estimate valence asymmetries in Study 1.

G Tables Underlying Figures 1-5

Tables G1, G2, G3, G4 and G5 present the OLS regression models used to produce Figure 1 and 2. Tables G6, G7, G8, and G9 present the OLS regression models used to produce figures 3, 4 and 5.

Table G1: OLS regression of voting for party in government (ANES)

	(1)	(2)
Worse off - own economy	-0.10*	-0.07*
	(0.01)	(0.01)
Better off - own economy	0.05*	0.05*
	(0.01)	(0.01)
Worse off - national economy	-0.26*	-0.18*
	(0.01)	(0.01)
Better off - own economy	0.27*	0.18*
	(0.01)	(0.01)
Female (ref:male)		0.02*
		(0.01)
Age		0.00
		(0.00)
Some college ore more (ref: none)		-0.02*
		(0.01)
Ideology		0.15*
		(0.00)
σ	0.44	0.40
R^2	0.23	0.37
Observations	12,252	12,252

Standard errors in parentheses
Dummies for election surveys included in all models.
$^{+}$ $p < 0.10$, * $p < 0.05$

Table G2: OLS regression of voting for party in government (BES)

	(1)	(2)
Worse off - own economy	-0.10*	-0.07*
	(0.01)	(0.01)
Better off - own economy	0.02	0.03*
	(0.02)	(0.02)
Worse off - national economy	-0.18*	-0.13*
	(0.02)	(0.01)
Better off - own economy	0.15*	0.12*
	(0.02)	(0.02)
Female (ref:male)		0.02
		(0.01)
Some college ore more (ref: none)		-0.04*
		(0.01)
Age		0.00*
		(0.00)
Ideology		0.09*
		(0.00)
σ	0.46	0.43
R^2	0.11	0.23
Observations	5,873	5,873

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+ p < 0.10$, $^* p < 0.05$

Table G3: OLS regression of voting for party in government (DNES)

	(1)	(2)
Worse off - own economy	-0.05*	-0.03*
	(0.01)	(0.01)
Better off - own economy	-0.01	0.01
	(0.01)	(0.01)
Worse off - national economy	-0.11*	-0.11*
	(0.01)	(0.01)
Better off - own economy	0.18*	0.16*
	(0.01)	(0.01)
Female (ref:male)		0.02*
		(0.01)
Age		0.00*
		(0.00)
Some college ore more (ref: none)		-0.04*
		(0.01)
Ideology		0.03*
		(0.00)
σ	0.46	0.45
R^2	0.06	0.09
Observations	12,391	12,391

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+ p < 0.10$, $^* p < 0.05$

Table G4: OLS regression of voting for party in government (AusES)

	(1)	(2)
Worse off - own economy	-0.09*	-0.08*
	(0.01)	(0.01)
Better off - own economy	0.02+	0.03*
	(0.01)	(0.01)
Worse off - national economy	-0.17*	-0.14*
	(0.01)	(0.01)
Better off - own economy	0.19*	0.15*
	(0.01)	(0.01)
Female (ref:male)		-0.01+
		(0.01)
Some college ore more (ref: none)		-0.05*
		(0.01)
Ideology		0.08*
		(0.00)
Age		0.00*
		(0.00)
σ	0.46	0.44
R^2	0.12	0.22
Observations	15,904	15,904

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+ p < 0.10$, $^* p < 0.05$

Table G5: OLS regression of voting for party in government (Latinobar.)

	(1)	(2)
Worse off - own economy	-0.06*	-0.06*
	(0.00)	(0.00)
Better off - own economy	0.04*	0.04*
	(0.00)	(0.00)
Worse off - national economy	-0.13*	-0.13*
	(0.00)	(0.00)
Better off - own economy	0.13*	0.13*
	(0.00)	(0.00)
Female (ref:male)		0.00
		(0.00)
Age		0.00*
		(0.00)
Some college ore more (ref: none)		-0.04*
		(0.01)
Ideology		0.01*
		(0.00)
σ	0.44	0.44
R^2	0.24	0.24
Observations	112,096	112,096

Standard errors in parentheses
Dummies for election surveys included in all models.
$^+ p < 0.10$, $^* p < 0.05$

Table G6: OLS regression of beliefs about government's capacity to affect national and personal economic condtions

	(1) Personal	(2) National	(3) Personal	(4) National
State of personal economy	-0.03*	-0.01		
	(0.01)	(0.01)		
State of country's economy	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Woman (ref: man)	-0.03+	-0.05*	-0.03+	-0.05*
	(0.02)	(0.02)	(0.02)	(0.02)
Age	-0.00*	-0.00	-0.00*	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Some college	0.02	0.02	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Worse (ref: A Lot Worse)			-0.02	0.01
			(0.05)	(0.05)
The Same			-0.07	-0.04
			(0.05)	(0.04)
Better			-0.09+	-0.04
			(0.05)	(0.05)
A Lot Better			-0.13*	-0.01
			(0.06)	(0.05)
Constant	0.87*	0.83*	0.87*	0.84*
	(0.05)	(0.04)	(0.06)	(0.06)
σ	0.29	0.24	0.29	0.24
R^2	0.02	0.01	0.02	0.02
Observations	943	943	943	943

Standard errors in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$

Table G7: Experiments 1 and 2; how responsible is the government for housing?

	Exp. 1	Exp. 2	Pooled
Worse - Own	-0.03	-0.04*	-0.04*
	(0.03)	(0.01)	(0.01)
Better - Own	-0.09*	-0.09*	-0.09*
	(0.03)	(0.01)	(0.01)
Same - National	-0.01	0.03*	0.02
	(0.03)	(0.02)	(0.01)
Worse - National	-0.05+	-0.04*	-0.04*
	(0.03)	(0.02)	(0.01)
Better - National	-0.04	0.03	0.01
	(0.03)	(0.02)	(0.01)
Exp. 2			-0.00
			(0.01)
Constant	0.52*	0.50*	0.51*
	(0.02)	(0.01)	(0.01)
σ	0.24	0.25	0.25
R^2	0.01	0.03	0.02
Observations	1,002	3,014	4,016

Standard errors in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$

Table G8: Experiments 1 and 2; how responsible is the government for employment?

	Exp. 1	Exp. 2	Pooled
Worse - Own	0.04	0.06*	0.06*
	(0.03)	(0.01)	(0.01)
Better - Own	-0.16*	-0.13*	-0.14*
	(0.03)	(0.01)	(0.01)
Same - National	0.16*	0.29*	0.25*
	(0.02)	(0.02)	(0.01)
Worse - National	0.11*	0.19*	0.17*
	(0.02)	(0.02)	(0.01)
Better - National	0.17*	0.29*	0.26*
	(0.02)	(0.02)	(0.01)
Exp. 2			-0.05*
			(0.01)
Constant	0.47*	0.35*	0.42*
	(0.02)	(0.01)	(0.01)
σ	0.23	0.25	0.25
R^2	0.19	0.27	0.26
Observations	1,002	3,014	4,016

Standard errors in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$

Table G9: Experiment 3 - how responsible is...?

	Voters themselves	Government
Negative change (ref: positive)	-0.11*	-0.05*
	(0.02)	(0.02)
Constant	0.48*	0.46*
	(0.01)	(0.01)
σ	0.26	0.25
R^2	0.04	0.01
Observations	1,009	1,007

Standard errors in parentheses
$^{+}$ $p < 0.10$, * $p < 0.05$

H The Neutral Category

The first two survey experiments included a neutral category asking respondent how responsible the government would be for either the positive or the negative outcome (e.g., "imagine that the price of housing in the country as a whole increases or decreases"). The results for the neutral category do not have any clear implications for the self-serving bias, which is why they were not presented in the main article, but they are presented in Figure H1 for transparency.

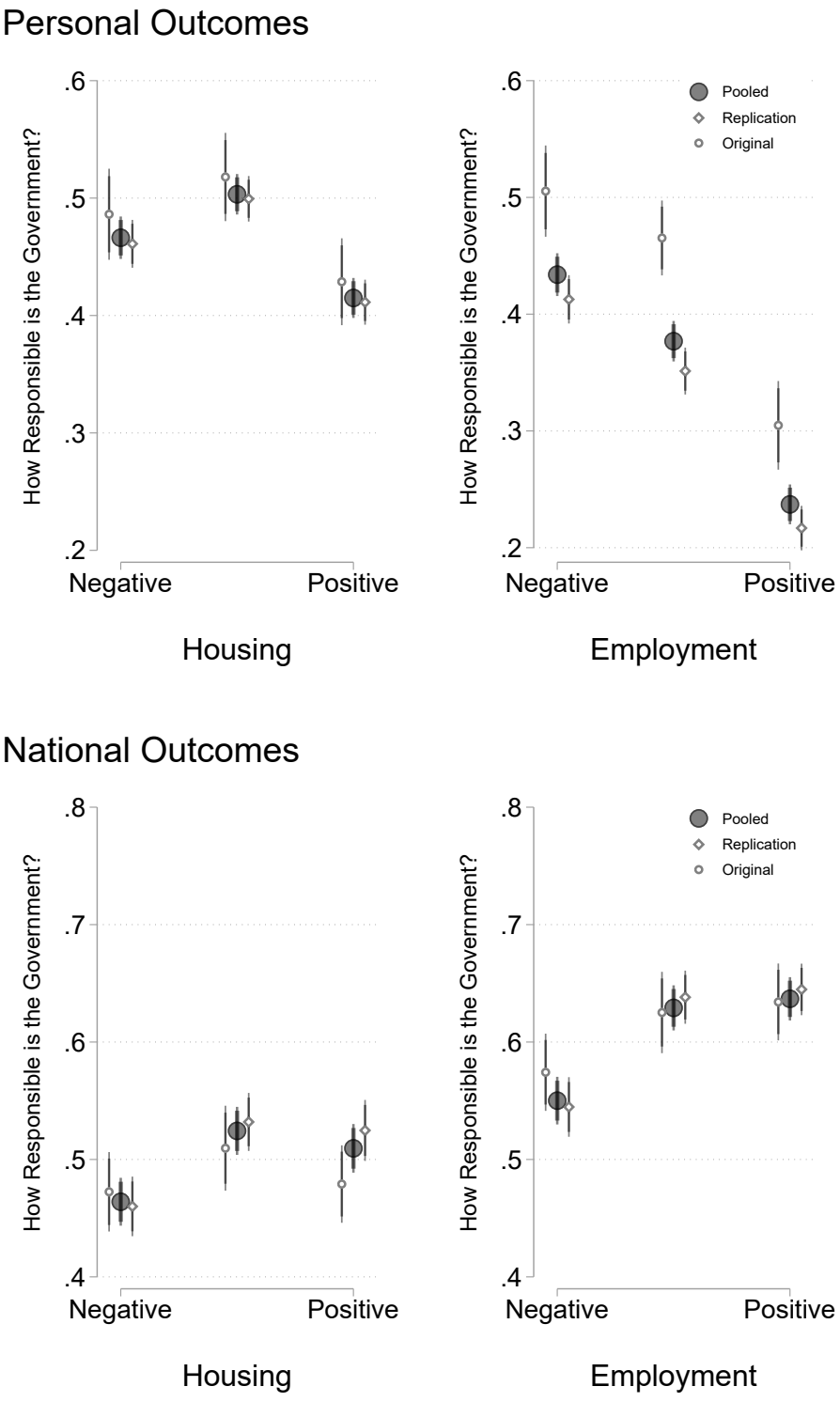

Figure H1: Results from the first two survey experiments including the neutral category. Dots represent average responses for each outcome. The smaller dots represent results from the original (circles) and the replication (diamonds) separately. The larger dots represent pooled results. Vertical lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. There is at least 830 observation in each treatment condition for personal outcomes and at least 505 observations in each treatment condition for the national outcomes.

References

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