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

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Democratic accountability is an elusive goal. Some scholars argue that it could proceed from voters punishing and rewarding the government for changes in their personal welfare. Yet the extent to which changes in personal welfare are the result of government policies or voters' own behavior is often unclear. At the same time, voters have a desire to protect and enhance their own self-image. These factors might lead to a self-serving bias in the attribution of political responsibility for personal welfare. In particular, voters might seize on the ambiguity about who is responsible to take personal responsibility for desirable changes in their personal welfare and to hold the government responsible for undesirable changes. This article uses a variety of data sources, including election surveys and survey experiments, to explore this contention. The results suggest that there is a strong, self-serving bias in political attributions that potentially undermines democratic accountability.

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Early scholars of political behavior argued that democratic accountability could proceed from voters punishing and rewarding the government for changes in their personal welfare (Downs, 1957; Key, 1966). Most notably, Fiorina (1981) 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 Popkin, 1991). The early enthusiasm for this type of "egotropic" voting 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, voters focus on how society is doing as a whole (Lewis-Beck and Stegmaier, 2013). However, more recent research suggests that personal welfare might indeed affect incumbent support. Both Tilley, Neundorf and Hobolt (2018) and Healy, Persson and Snowberg (2017) find that changes in voters' own economic situations powerfully shape the support for incumbent governments when more detailed measures and more appropriate research designs are used (see also Healy and Lenz, 2017; Simonovits, Kates and Szeitl, 2018). 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. This article shows that this ambiguity is more detrimental to democratic accountability than previously thought, because voters seize on this ambiguity about who is responsible for changes in personal welfare to attribute responsibility in a self-serving manner.

From social psychological research, we know that the protection and enhancement of one's self-image is an important motivation underlying human behavior (Sedikides and Strube, 1995; Beauregard and Dunning, 1998; Baumeister, 1999). This is reflected in a ubiquitous, self-serving bias in attribution, which motivates people to draw causal inferences that make themselves look good (Kunda, 1999; Heider, 2013; Stephan, Rosenfield and Stephan, 1976). In

particular, 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)—a valence asymmetry in attribution of political responsibility.

This article presents evidence of a self-serving bias in attribution of political responsibility for personal welfare in three separate studies: (1) using 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) using survey data, it shows that voters who say their personal finances are getting better are less likely to say that the government can affect their personal finances; (3) using three population based vignette survey experiments ($n = 6,000$), which 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. As mentioned above, this is potentially problematic from the perspective of democratic accountability. In particular, the results suggest that voters will sometimes blame the government for negative changes in personal welfare that they are responsible for themselves, and that voters are not disposed to credit governments for improving their personal welfare. This naturally hurts the re-election prospects of politicians who are able and willing to increase voters' personal welfare (Achen and Bartels, 2016), attenuates electoral incentives to improve voters' personal welfare among politicians and weakens voters' ability to sort good politicians from bad ones (Fearon, 1999).

The Political Relevance of the Self-Serving Bias

Social psychological research has long identified 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). 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. In particular, the self-serving bias has been shown to be driven by a number of different cognitive heuristics and psychological needs (Shepperd, Malone and Sweeny, 2008; Snyder, Stephan and Rosenfield, 1976), the most prominent of these is the need to sustain a positive self-image (i.e., self-enhancement or self-protection) (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 is a good reason for this omission.

All types of motivated reasoning feed on ambiguity (Kunda, 1990); it is ambiguity about which conclusions to draw that gives room for rationalizations steered by motives like self-enhancement. 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 which citizens have some individual control over, 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 get 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 that this article examines.

> **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 one advanced in the literature on partisan bias, where 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 instead by whether outcomes reflect poorly or well on the voters themselves.

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).

Substantively, the self-serving bias has important implications for the aggregate-level relationship between economics and elections. For one, the self-serving bias might help explain why there appears to be a negativity bias in the effect of GDP growth on incumbent support,

where 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 simply 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 reversal of economic fortune associated with negative growth. Relatedly, the self-serving bias may also help explain why much of the previous 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 the personal economic conditions of more voters are stable or improving).

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), holding 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 increase their personal welfare, thus enhancing problems related to adverse selection (Fearon, 1999). It will also reduce the electoral incentive

politicians have 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 using the Danish, American, British, and Australian national election studies as well as the Latinobarómetro, a comparative election survey of Latin American countries. For each of these election studies, I estimate a valence asymmetry in how electorally responsible the government is held for personal economic conditions by comparing the propensity to vote for governing parties across respondents who say their personal finances are doing 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 using a population-based survey of Danish voters. Study 3 consists of three population-based vignette survey experiments with Danish voters. In the experiments, respondents evaluate the extent to which the government is responsible for different potential outcomes. Using 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 different studies.

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 a lot of alternative explanations for the behavioral patterns one might identify in Study 1, it examines real voting behavior based on actual experienced economic hardship, giving the study a high level of ecological validity. All in all, the three studies aim to provide a methodologically triangulated test of the self-serving bias hypothesis.[2]

[2]Another compelling test of the hypothesis would be to use panel data on attributional beliefs, examining 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 any panel data which included survey items regarding the extent to which the government can affect voters' personal welfare.

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)	13,306
		British Election Study (2001-2017)	5,873
		Australian Election Study (1987-2016)	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 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

As presented in Table 1, much of the data is on Danish voters. Denmark is fairly typical in terms of economic voting. As such, 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 roughly the same size as in other OECD countries (Vinæs Larsen, 2016). While some previous 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 challenged this conclusion, showing that Denmark is similar to other countries in that the national economy appear 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 governments 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 politicians more electorally responsible when their personal finances are getting worse than when their personal finances getting better.

Study 1 also examines whether there is a similar valence asymmetry when it comes to the national economy. Since an improving national economic situation reflects neither well nor poorly on the individual voter, the self-serving bias predicts a relatively weaker valence asymmetry for the national economy. 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 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 differs from the other studies in that it is not a typical election study. Rather, it is an annual comparative survey of Latin American countries that primarily asks about political matters. It is nevertheless included because long-running election studies are rare outside of economically developed contexts, meaning that if one wants data from less economically developed countries, one needs to rely on datasets like the Latinobarómetro.

In terms of representativeness, the countries studied here span the major fault lines identified by the comparative economic voting literature. In particular, they include high and low clarity of responsibility countries (Powell and Whitten, 1993; Duch and Stevenson, 2008; An-

derson, 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 of the surveys from the ANES (1984-2012), the BES (2001-2017), the AusES (1987-2017) the DNES (1988-2015), and the Latinobarómetro (1995-2010), which ask respondents about how their personal finances as well as the national economic situation have developed. For a complete overview of which surveys are included, 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 a parliamentary election.[3] 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.[4]

The independent variables are voters' evaluations of their own and the national economy. Specifically, I use two questions which were included in all of the election surveys, which ask respondents how (1) your own and your family's economy and (2) the national economy has developed over a period of time. The time period differs across the different election surveys, covering anything from the last 12 months to the last three years. The responses to these questions were sorted in three categories: responses indicating the economy had stayed the same, responses indicating the economy had gotten worse, and responses indicating the economy had gotten better. I also use a small set of control variables in some parts of the

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

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

analysis (gender, age, education, and ideology). See Appendix C for a detailed description of how all of the variables were measured along and 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 country's economy had stayed the same as the 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 E, 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.[5]

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.[6] 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 both national economic conditions and for personal economic conditions. The regression models underlying this and subsequent figures can be found in Appendix D.

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

[5]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 F, however, there are only signs of such an interaction in the DNES, suggesting that it is reasonable to estimate the effects of national and personal economic conditions as independent of each other.

[6]See Appendix B for details on how the valence asymmetry is estimated.

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. This is the opposite of what is the case for personal economic conditions. The remaining election studies have no significant valence asymmetry for national economic conditions.

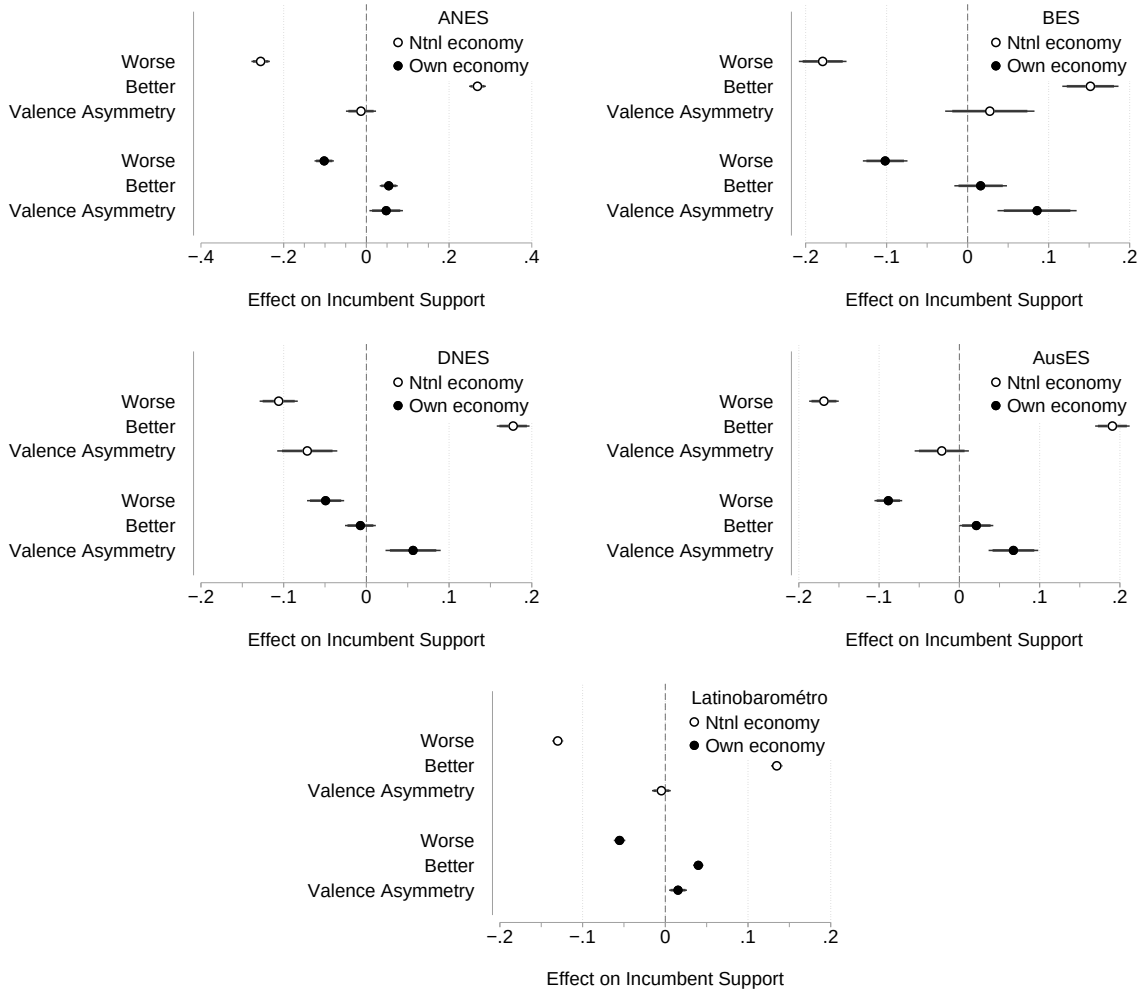

Figure 1: Perceptions of the Economy and Incumbent Support Across Election Studies. Estimated effects of believing your own or the national economy has gotten "worse" or "better" rather than "stayed the same" on voting for/supporting the incumbent government. The valence asymmetry is calculated as the 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 D for the underlying regression models.

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

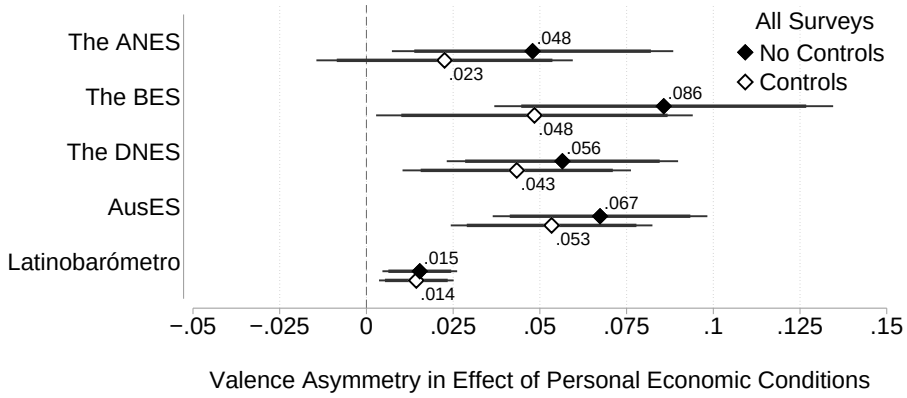

Figure 2: Estimated Valence Asymmetries With Controls Across Election Studies. The valence asymmetry is calculated as the sum of the "worse" and "better" effects divided by -1. Horizontal lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals.

of the respondent's personal finances (as suggested by Kinder and Kiewiet, 1981). There are also some differences across the election surveys. As such, 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 five sets of election surveys, the estimated negative effect of things getting worse is greater than the positive effect of things getting better.

How does this pattern hold up to statistical control? To test this, 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 for the ANES, the valence asymmetry for the respondent's own economy remains significantly different from zero ($p < 0.05$). The estimated valence asymmetries are remarkably similar across election studies—only the Latinobarometer stands out with a comparatively small valence asymmetry. This might be because the dependent variable in this election study is different (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 changes for the better than when it changes for the worse; an asymmetry which is not present for the state of the national economy. These findings are especially noteworthy due to the diverse set of contexts analyzed. As such, 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, which these analyses cannot deal with. First, I assume that differences in the effect of economic conditions on incumbent support correspond to differences in the attribution of responsibility. As mentioned above, this is a standard assumption in much of the research on retrospective voting, but it does not necessarily make it a valid assumption. 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, which try to address exactly these shortcomings.

Study 2: A Survey of Voters' Attributional Beliefs

Study 2 tests the self-serving bias hypothesis by once again examining the relationship between voters' perception of their personal finances and the extent to which they attribute responsibility for their 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 than the Danish voting age population (see Appendix C).

The survey included some items about the national government's effect on the state of the economy. In particular, the survey included the following item which we use as the dependent variable in this study: "To what extent can the Danish government affect your personal economic situation?" 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."

As a placebo test, I also examine an alternative dependent variable, where respondents were asked "To what extent can the Danish government affect the national economic situation?" Answers were recorded on a 5-point scale from "Not at all" to "A lot."

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 voter's 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 2 also shows that there is no (or a very weak) relationship for the placebo outcome: beliefs about the government's role in producing national economic outcomes ($p > 0.35$). This is reassuring, because it tells us that the type of people who are doing well are not less likely to hold the government responsible for all types of economic outcomes. It is only their own good fortune, not the good fortune of the nation, they hold the government less responsible for.

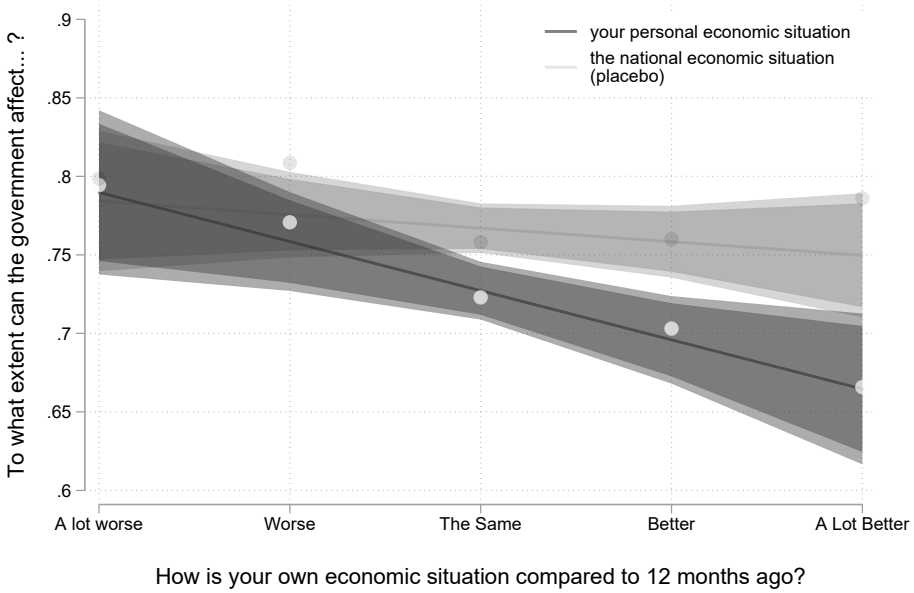

Figure 3: Perceptions of personal economic conditions and attributional beliefs. Linear fit with 90 and 95 pct. confidence intervals. Linear fit for beliefs about the extent to which the government can affect your personal economy shown in dark shaded areas and for the national economy in light shaded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

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 asks 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.

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 getting better with voters who believe the same outcome is getting worse. This is potentially problematic, as voters with specific propensities to attribute responsibility to the government may, inadvertently or intentionally, select 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 who they held responsible for these changes. However, this is neither practically feasible nor ethically defensible. Instead, the experiments in this article present hypothetical vignettes. Using vignettes of this type is a fairly common technique (see, e.g., Tomz and Van Houweling, 2009 or Aarøe and Petersen, 2014), and studies have shown that respondents' behavior when confronted with hypothetical situations in vignettes mirrors their behavior in similar real-world situations (Hainmueller, Hangartner and Yamamoto, 2015).

It is important to note that using 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 faced with 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.[7] 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 another related to employment. For each of the two outcomes, respondents were presented with one of four versions (positive ctr. negative $\times$ personal ctr. national).[8] 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].[9]

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].

[7]The pre-registrations for the second and third survey experiment is appended to the submission.

[8]The first two experiment also included a "neutral" version that presented both the negative and positive outcomes (i.e., imagine the price of housing increases or decreases) and then asked respondents how responsible the government would be for this. 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. Instead, results including the neutral category is reported and discussed in Appendix H.

[9]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).

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 hard for voters to figure out the implications of rising or falling housing prices 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.

While the second experiment is an exact replication of the first, the randomization schedule is adjusted to better reflect the special interest in outcomes related to personal welfare, meaning that two-thirds of the respondents 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 are able to 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 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 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 respon-

sible 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 the respondents' self-serving motives, yet the outcome is still personal in scope. All in all, the third experiment thus has four treatment conditions related to housing: the personal housing outcomes with a different dependent variable and adjusted personal housing outcomes with the same dependent variable as in the two first survey 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 those 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 ($p < 0.01$), which was the exact opposite of what was found for personal economic outcomes in the top panel. This is important, as 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.

The third experiment provides additional evidence that voters do not hold the government more responsible for negative outcomes in the absence of a self-serving motive. The left panel of Figure 5 shows the extent to which voters regard the government as being responsible for the

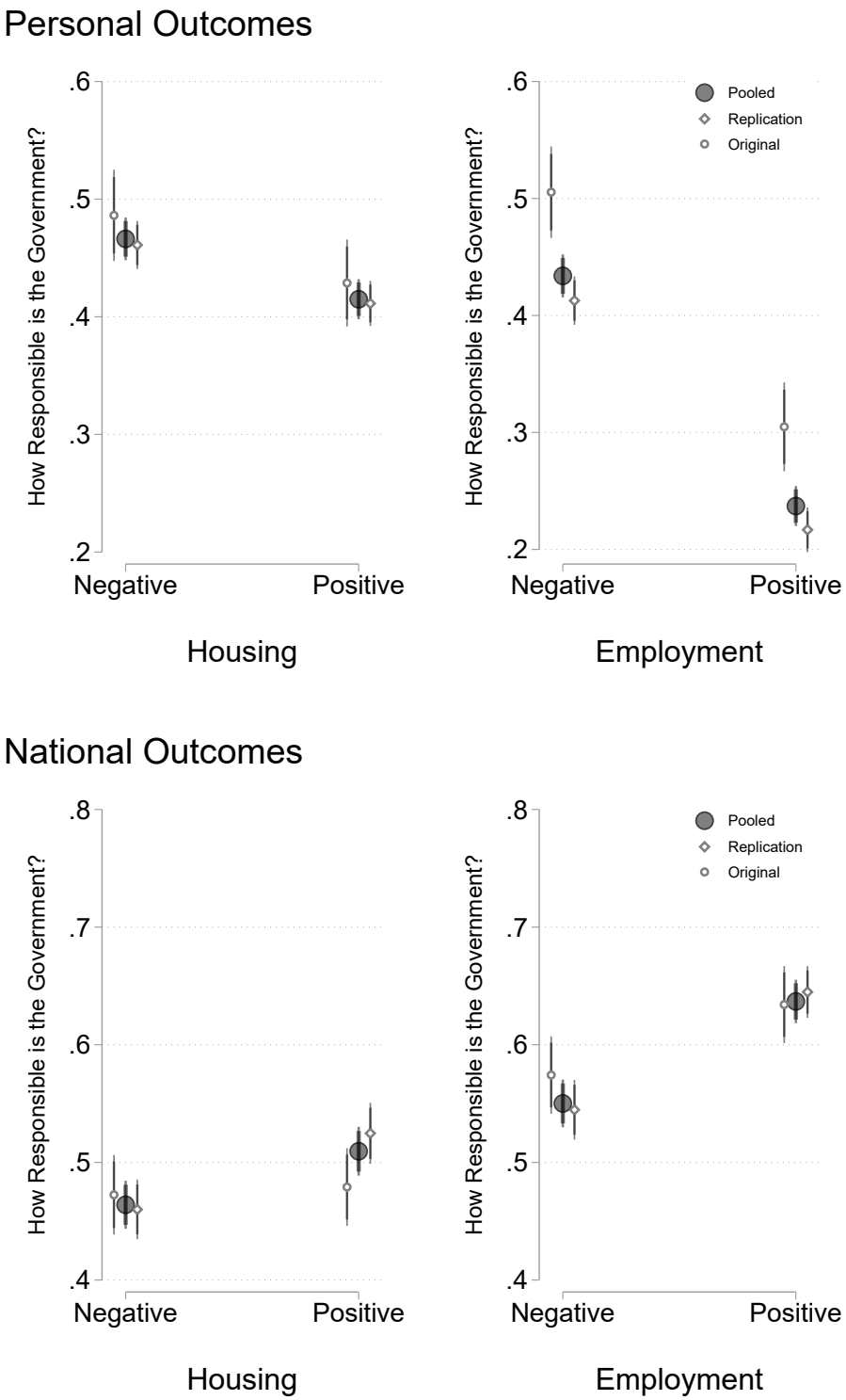

Figure 4: Government responsibility for negative and positive hypothetical changes in personal and national welfare. Dots represent average responses for each outcome. The smaller dots represent results from the original (circles) and the replication (diamonds) seperately. The larger dots represent pooled 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.

price of *a* house either increasing or decreasing in value. For comparison, I also plot responses from the first two experiments, where respondents were asked to evaluate the extent of the government's responsibility if their/their family's house decreased or if it increased in value. The figure shows that when asked to evaluate who is responsible for changes in the price of some unspecified house, voters hold the government more responsible for positive changes ($p < 0.01$), but once 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). 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 such a 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.

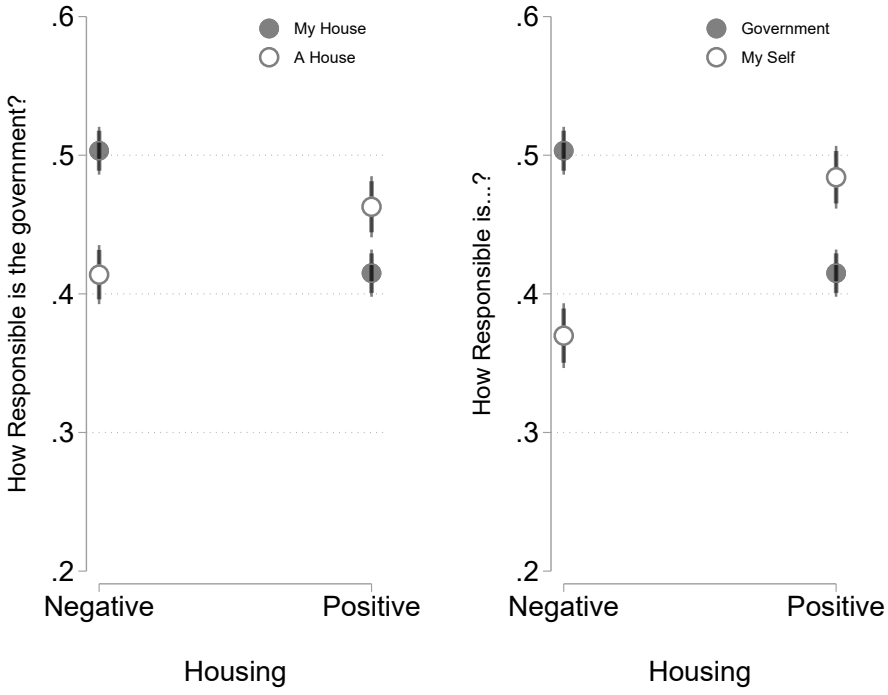

Figure 5: Testing Additional Implications of the Self-Serving Bias. Dots represent average responses for each outcome. Vertical lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. Light dots are from the third experiment with at least 500 observations in each treatment condition. Dark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

Since this article has been 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 present some evidence for this implication, showing that voters hold themselves less responsible for the price of their house decreasing than for the price of their house increasing ($p < 0.001$).

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 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 which suggest that voters hold themselves more responsible for positive changes than for negative changes in their personal welfare.

Conclusion

Research in social psychology has shown that 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 number of Latin American countries punish their governments more for negative changes in personal finances than they reward their governments for positive changes in personal finances. I have also shown that when voters think their economic situation is getting better, they are less likely to think the government can influence their economic situation. Finally, I have shown that if

we ask voters to evaluate the extent of the government's responsibility for hypothetical changes in their personal welfare in vignette 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 vignette 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 vignette 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 asked to evaluate who is responsible for the personal welfare of someone else, 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 up 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 hurt voters' personal welfare.

These article's findings have important implications for the existing literature on how voters attribute political responsibility for social and economic outcomes. As such, the focus in previous work has gravitated toward attribution for events which 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). Yet 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 would seem as though 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 way.

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 they attribute political responsibility for these changes. As this article has demonstrated, voters will tend not to credit the government for positive changes in their personal welfare yet blame them for negative changes. As a result, 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 (Ashworth, 2012; Besley, 2006). In this way, the self-serving bias in political attribution undermines democratic accountability for personal welfare.

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Appendix: For Online Publication

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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: The countries included in the Latinobarómetro, and the number of years that these countries have been part of the study can be seen in Table A1. 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 Estimating the Valence Asymmetry

The basic model used to look at how voters respond to economic conditions in Study 1 is

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

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 figure 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 unfortunately 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 model like this one is used to estimate the valence asymmetries in Study 1.

C Variable Descriptions & 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 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?"

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 in now compares 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 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?"

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. The ideology variable was rescaled to go between zero and one. *Gender* is coded 1 for female and 0 for male. *Age* is measured in years.

The tables below show descriptive statistics from the election studies, the survey on attributions and the survey experiments.

Table C1: 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)	1.54	0.50	1.00	2.00	2.00	12252

Table C2: 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
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 C3: 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
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 C4: 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
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 C5: 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 C6: 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 C7: 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 C8: 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

D Tables Underlying the Different Figures

Tables D1, D2, D3, D4 and D5 present the OLS regression models used to produce Figure 1 and 2. Tables D6, D7, D8, and D9 present the OLS regression models used to produce figures 3, 4 and 5.

Table D1: 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
R2	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 D2: 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
R2	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 D3: 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	0.02
	(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
R2	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 D4: 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
R2	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 D5: 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
R2	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 D6: 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
R2	0.02	0.01	0.02	0.02
Observations	943	943	943	943

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

Table D7: 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
R2	0.01	0.03	0.02
Observations	1,002	3,014	4,016

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

Table D8: 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
R2	0.19	0.27	0.26
Observations	1,002	3,014	4,016

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

Table D9: Experiment 3–how responsible is...?

	Voters Themselves	Government
Negative changes (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
$^{+}$ $p < 0.10$, * $p < 0.05$

E Logistic Regressions

Tables E1, F2, E3, F4 and E5 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 that 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 E1: 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 R2	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 E2: 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 R2	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 E3: 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 R2	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 E4: 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 R2	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 E5: 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 R2	0.19	0.19
Observations	112,096	112,096

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

F Interaction Models

Tables F1, F2, F3, F4 and F5 present models interacting voters perception of their personal finances and their country's economy. I recode the 3-point national and personal economic perceptions variables, so -1 means that the respondent's believes the economic situation is doing worse, 0 means that it is the same and 1 that it is doing better. I then estimate LPM's of incumbent support using our recoded economic variables and an interaction between the two variables. I estimate the 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 interaction 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 F1: 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
R2	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 F2: 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
R2	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 F3: 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
R2	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 F4: 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
R2	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 F5: 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
R2	0.24	0.24
Observations	112,096	112,096

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

G Analyses Using Prime Minister Parties

The analysis of the AuSES, the BES, and the DNES used support for all governing parties as the dependent variable. Some argue that it is primarily the Prime Minister party which is punished and rewarded for the state of the economy in parliamentary democracies(Duch and Stevenson, 2008). Figure G1 compares estimates of the valence asymmetry from analyses using governing parties and just 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.

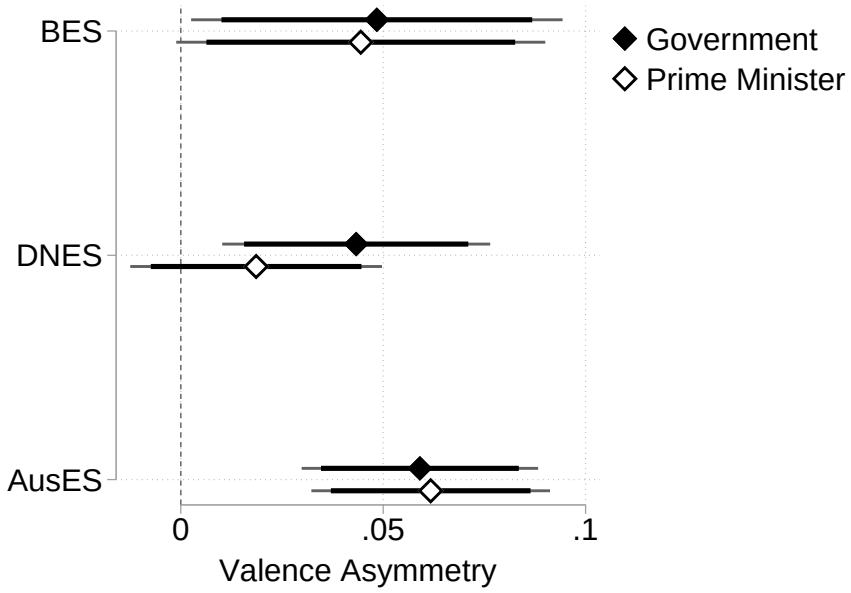

Figure G1: Estimated valence asymmetries for different dependent variables. Based on models which include controls (i.e., gender, age, education and ideology). Horizontal lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals.

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 main analysis excluded the results from this category. The results including this category are presented in Figure H1.

There is only a small difference in the extent to which voters hold the government responsible for neutral and negative personal economic conditions. One explanation for this might be that the "neutral" condition, which asks voters to assign responsibility for either a positive outcome or a negative outcome, is actually more negative than neutral. The literature on the negativity bias thus suggests that the mere presence of negative information crowds out positive information (Rozin and Royzman, 2001; Olsen, 2015). If this is true, then it might make sense that the respondents assigned to the "neutral" condition respond in the same way as those assigned to the "negative" condition.

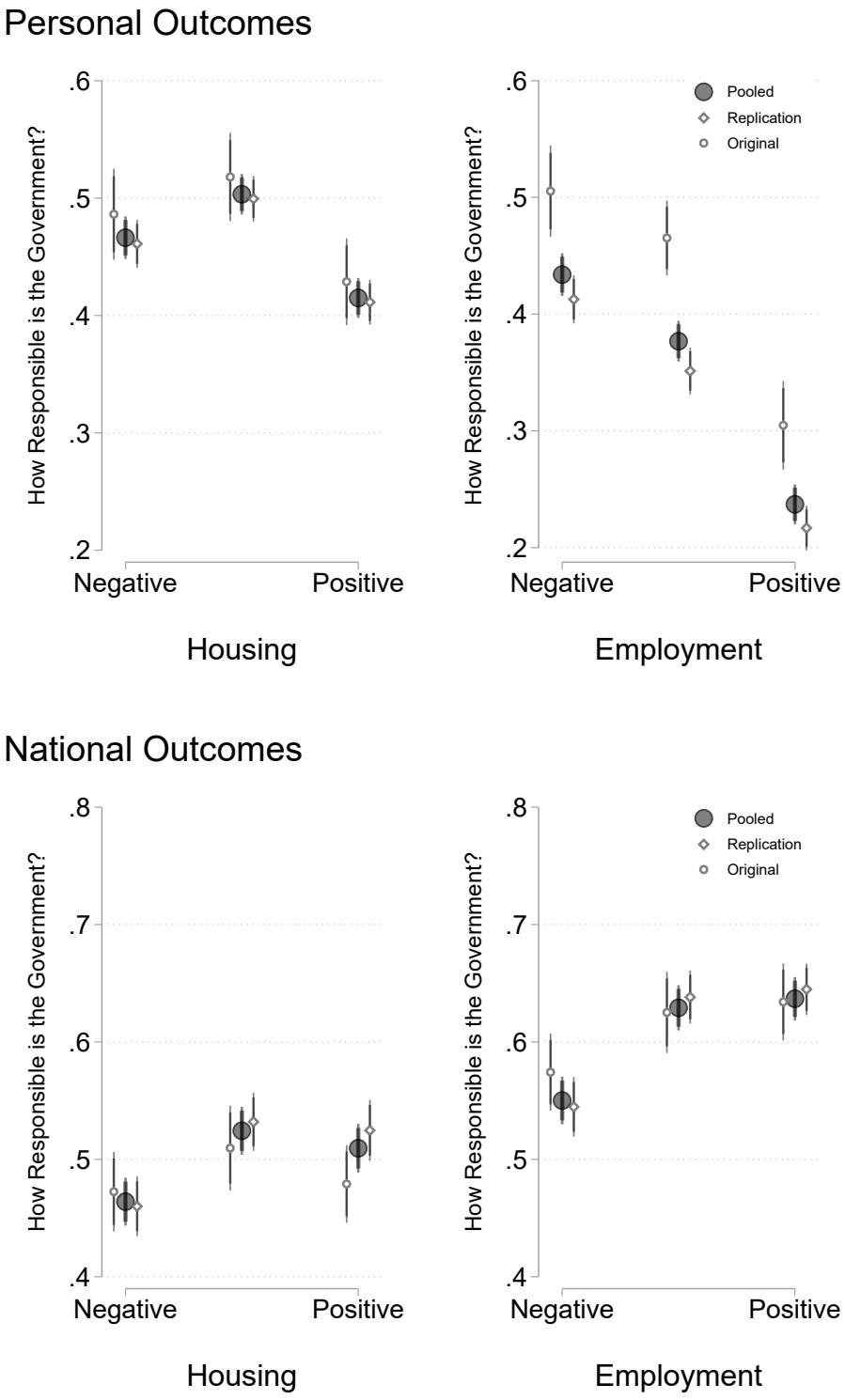

Figure H1: Results from the first two survey experiments including the neutral category. Dots represent average responses for each outcome. The smaller dots represent results from the original (circles) and the replication (diamonds) separately. The larger dots represent pooled results. Vertical lines 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.

Pre-registration

Replication of Survey Experiment about a Self-serving Bias in Political Attribution

February 20, 2019

We know from social psychology that protection and enhancement of one's self-image is an important motivation underlying human behavior. This is reflected in a ubiquitous self-serving bias in attribution which leads people to draw causal inferences that make themselves look good. In particular, because of this bias, people tend to take personal responsibility for desirable outcomes yet externalize responsibility for undesirable outcomes. In the context of attributing political responsibility for changes in personal welfare, the self serving bias potentially implies that voters hold the government more responsible for negative changes (in order to exculpate themselves) and less responsible for positive changes (in order to implicate themselves).

In a research paper that was part of my dissertation[1] I present evidence of a self-serving bias in political attribution for personal welfare in three separate studies. The first two studies are observational. In the third study, I conduct a survey experiment on a population-based sample of Danish voters. In the experiment, I ask respondents to evaluate the extent to which the government would be responsible for a set of hypothetical outcomes, randomly assigning outcomes to respondents. Consistent with the self-serving bias, I find that voters hold the government more responsible for negative hypothetical changes to their personal welfare than for positive changes. In this pre-registration I lay out an exact replication of this survey experiment.

I first describe the overall design and results of the original experiment. I then describe the replication. I use the results from the original experiment as a guide for choosing an appropriate sample size. Finally, I lay out how I plan to analyze the results of the new experiment.

Orginal Experiment

The survey-experiment randomly assigned voters to descriptions of different hypothetical economic outcomes. 1,002 respondents were recruited by the polling company Norstat using a population-based internet panel. The sample was diverse, though not completely representative of the Danish voting age population. The survey ran from June 2 till June 4 2015 and was conducted on Norstat's online platform.

The survey presented voters with two experimentally manipulated outcomes. The first outcome was related to housing and the second outcome was related to employment. For each of the two outcomes, respondents' were given one of three valence conditions (negative, neutral, positive) and one of two relevance conditions (personal, national). Respondents were then asked: "To what extent would the government be responsible for this outcome?" Answers were given on a eleven point point scale from "Not at all" to "A great deal". The variable was rescaled to go from zero to one.

The first outcome voters were presented with concerned house prices. Specifically, respondents were presented with one of the following six hypothetical outcomes:

1,2,3 Imagine that the price of your or your family's house [increased/decreased/increased or decreased].

4,5,6 Imagine that the price of houses in the country as a whole [increased/decreased/increased or decreased].

The positive economic outcome in this case is increasing house prices, which will enable voters to sell their house, or draw up a larger mortgage, at a possible gain to themselves. Conversely, decreasing house prices is the negative outcome. Note that the neutral condition simply asked voters to evaluate how responsible the government would be for house prices either increasing or decreasing.

The second outcome concerned employment. Respondents were presented with one of the following six versions of the outcome:

1,2,3 Imagine that you or someone in your family [lost their job/got a better job/lost their job or got a better job].

4,5,6 Imagine that unemployment in the country as a whole [increased/decreased/increased or decreased].

For the first three versions, the positive outcome is getting a better job and the negative outcome is losing a job. For the last three versions, the negative outcome is increasing unemployment and

the positive outcome is decreasing unemployment. The neutral outcomes were, once again, either the negative or the positive outcome.

In the Appendix I present the Danish wording that was used in the experiment and which will be used in the replication.

Results

The survey experiment was analyzed by setting up two linear models that use voters' attributions of responsibility for the housing and unemployment outcomes as the dependent variables. The independent variables were the different experimental treatments. The models were estimated using an OLS regression with robust standard errors. Table 1 present the estimates from this analysis.

Table 1: OLS regression of attribution to government

	(1)	(2)
	Government responsible for employment status	Government responsible for house prices
Worse - Own	0.04	-0.03
	(0.03)	(0.03)
Better - Own	-0.16*	-0.09*
	(0.03)	(0.03)
Same - National	0.16*	-0.01
	(0.02)	(0.03)
Worse - National	0.11*	-0.05+
	(0.02)	(0.03)
Better - National	0.17*	-0.04
	(0.02)	(0.03)
Constant	0.47*	0.52*
	(0.02)	(0.02)
σ	0.23	0.24
R2	0.19	0.01
Observations	1,002	1,002

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

Figure 1 shows predicted values across experimental treatments from the OLS regressions. The top panel examines 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 were *less* likely to think that the government was responsible for securing this outcome than those assigned to a neutral or negative outcome ($p < 0.05$). This is the key result I hope to replicate below.

The bottom panel of Figure 1 examines the effects of the national housing and employment outcomes. For the national housing outcomes there was practically no difference in the extent to which voters assigned responsibility to the government across positive, negative and neutral

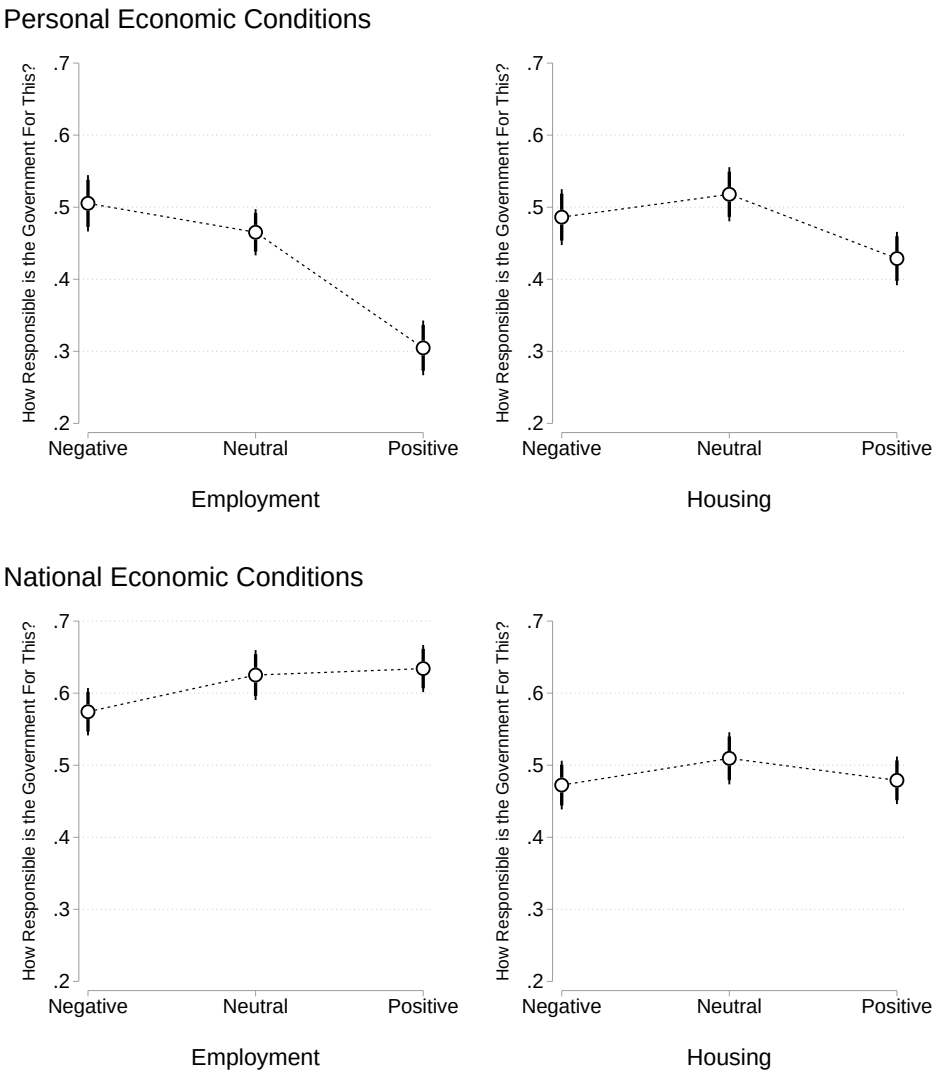

Figure 1: Mean level of beliefs about government responsibility for economic outcomes across valence (”Negative”, ”Neutral” and ”Positive”) and relevance (“Personal” and “National”). Mean levels reported separately for housing and employment outcomes. Vertical lines are 95 pct. (thin) and 90 pct. (thick) confidence intervals. Confidence intervals calculated based on predicted values from an OLS regression with robust standard errors ($n = 1,002$ for housing, $n = 1,002$ for employment).

outcomes. For the national employment outcomes there was no difference in how voters assigned responsibility for positive and neutral outcomes. Voters who were assigned a negative national employment outcome, however, were less likely to assign responsibility to the government than those who were assigned to a positive or a neutral outcome. I have no explanation for this pattern, but the key point is that voters do not necessarily hold the government more responsible for all types of negative outcomes.

The Replication

The new survey experiment is conducted by the survey company YouGov. The respondents will be quota-sampled from YouGov's internet panel of Danish voters to match the Danish population on gender, age, region and educational level. The survey will be conducted on YouGov's online platform. The plan is for YouGov to recruit 3,000 respondents as this should give the study adequate statistical power (see below).

The treatments and the question wording will match the original experiment. The only difference will be that instead of being presented with the two outcomes in the same sequence (housing and then employment), the sequence of outcomes will be randomized.

Power Analysis

The smallest statistically significant effect identified in the original study is the difference between the negative and positive personal housing outcome. This effect is 0.6. Ideally, our replication should be statistically well-powered enough to detect an effect of this size, and perhaps even a bit smaller. since the original study might have overestimated the effect.

To calculate the statistical power across effect sizes for a given sample size I do a simple Monte Carlo simulation using some of the data from the original experiment.

1. I sample with replacement from respondent's answer on the housing outcome among those who got the individual treatment. This is the subset we are particularly interested in (i.e., where the smallest statistically significant effect is).

2. I split the sample into three groups (at random) mirroring the split into positive, negative and control groups.

3. I subtract 1.0 from respondents' answer on the housing outcome from between zero and 100 percent of the observations in one of the treatment group. I draw this percentage from a uniform distribution. The percentage drawn mirrors the effect size in the particular simulation (e.g., 60 percent is equal to an effect size of 0.6)

4. I then compare the average response between the treatment group and one of the control groups using a linear regression.

5. I then note the sample size, the effect size and whether the p-value from the between group comparison is below 0.05.

I run this simulation 10,000 times for sample sizes of 500, 1000, 1500, 2,000 and 3,000 respondents. Based on the resulting 50,000 simulations, I fit lowess curves of whether the simulation returns a statistically significant difference across effect sizes for each of the different sample sizes. The lowess smoother has a bandwidth of 0.2. Figure 2 plots the different curves.

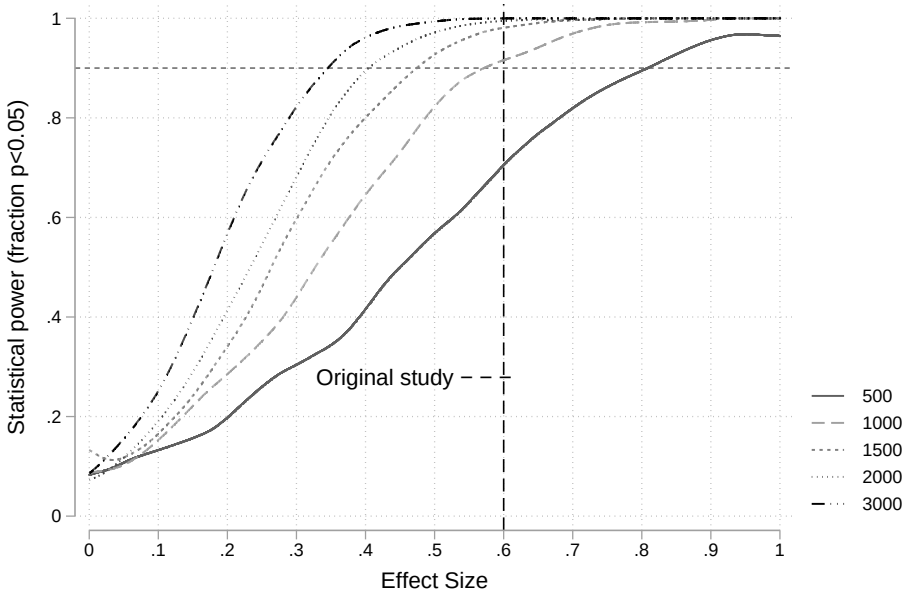

Figure 2: Statistical power of comparison between negative and positive personal economic outcomes at different effect sizes and sample sizes.

In the original study the sample size was approximately 1,000, however, since we are only focusing on the individual level treatments, the effective sample size for the comparison was 500. As can be seen from Figure 2 the statistical power of the original study was about 0.7 if the true effect size is 0.6. This is less than the 0.8 which is conventionally recommended.

In the new study, we would like a statistical power of about 0.9. If the true effect size is 0.6, then around 1,000 respondents is enough. However, it is entirely plausible that the effect size is somewhat smaller. In order to make a more conservative assumption, I choose a sample size based on a true effect size of 0.4—two thirds of the point estimate from the original study. As can be seen from the figure, this means that we will need 2,000 respondents in our new study.

These 2,000 respondents, however, only cover three of the six treatment conditions (i.e., the positive, negative and neutral individual-level treatments). Since we are less interested in the other three national-level treatments, which serve as more of a placebo test, we will only assign 1,000 additional respondents to these treatments. This leaves us with a sample size of 3,000.

Analysis

The new survey experiment will be analyzed in the same way that the results from the original experiment was analyzed. In particular, I will set up two linear models that use voters' attributions of responsibility for the housing and unemployment outcomes as the dependent variables. The independent variables will be the different experimental treatments. The models will be estimated using an OLS regression with robust standard errors.

Appendix: Treatments and Dependent Variable in Danish

Danish wording of the housing and employment treatments:

1,2,3 Forestil dig nu at dit eget hus eller et hus nogle i din familie ejer [stiger/falder/stiger eller falder] i værdi.

4,5,6 Forestil dig at huspriserne i Danmark [stiger/falder/stiger eller falder].

1,2,3 Forestil dig nu at du eller en i din familie [bliver arbejdsløs/får et bedre job/får et bedre job eller bliver arbejdsløs].

4,5,6 Forestil dig nu at arbejdsløsheden i Danmark [stiger/falder/stiger eller falder].

The dependent variable: I hvor høj grad ville regeringen være ansvarlig for dette? Svar givet på skala fra 1 til 10 hvor 1 er "Slet ikke" og 10 er "I meget høj grad".

Extra tests of the self-serving mechanism

Study Information

Title

Provide the working title of your study. It may be the same title that you submit for publication of your final manuscript, but it is not a requirement.

Extra tests of the self-serving mechanism

Authors

REDACTED

Description

Please give a brief description of your study, including some background, the purpose of the study, or broad research questions. (optional)

In a research paper that was part of my dissertation I present evidence of a self-serving bias in political attribution for personal welfare in three separate studies. The rst two studies are observational. In the third study I conduct a survey experiment on a population-based sample of Danish voters. In the experiment, I ask respondents to evaluate the extent to which the government would be responsible for a set of hypothetical outcomes, randomly assigning outcomes to respondents. Consistent with the self-serving bias, I nd that voters hold the government more responsible for negative hypothetical changes to their personal welfare than for positive changes. I have since conducted a pre-registered replication of this experiment (REDACTED).

Here I lay out an auxiliary experiment which serve as a mechanism-check of the original experiments.

Hypotheses

List specific, concise, and testable hypotheses. Please state if the hypotheses are directional or non-directional. If directional, state the direction. A predicted effect is also appropriate here. If a specific interaction or moderation is important to your research, you can list that as a separate hypothesis.

In this experiment I want to test two hypotheses.

Hypothesis 1. I expect that voters hold themselves more responsible for positive as opposed to negative changes to their personal welfare.

Hypothesis 2. I expect that voters hold the government equally responsible for negative and positive changes to the personal welfare of others.

Design Plan

Study type

Please check one of the following statements

✓ Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

Blinding

Blinding describes who is aware of the experimental manipulations within a study. Mark all that apply.

✓ For studies that involve human subjects, they will not know the treatment group to which they have been assigned.

Is there any additional blinding in this study?

Blinding (Other) (optional)

Study design

The experiment present respondents' with one of four treatment conditions in the context of a question. In particular, respondents will receive one of the following four prompts:

1. Imagine that the price of your or your family's house increased.
2. Imagine that the price of your or your family's house decreased.
3. Imagine that the price of a house increased.
4. Imagine that the price of a house decreased.

If they are in the first two condtions respondents will then be asked: "To what extent would you and your family be responsible for this outcome?" If they are in the third or fourth condition they will be asked: "To what extent would the government be responsible for this outcome?''. For both questions answers are given on a eleven point point scale from "Not at all" to "A great deal".

Hypothesis 1 is tested by comparing treatment conditions 1 and 2, examining whether people say they are more responsible for a positive as opposed to negative change in housing wealth. Hypothesis 2 is tested by comparing treatment conditions 3 and 4, examining whether people say the government is equally responsible for a negative and a positive change in housing wealth.

(optional)

- No files selected

Randomization

If you are doing a randomized study, how will you randomize, and at what level? (optional)

Randomization will be at the individual level.

Sampling Plan

Existing Data

Preregistration is designed to make clear the distinction between confirmatory tests, specified prior to seeing the data, and exploratory analyses conducted after observing the data. Therefore, creating a research plan in which existing data will be used presents unique challenges. Please select the description that best describes your situation. Please see https://cos.io/prereg for more information.

✓ Registration prior to accessing the data

Explanation of existing data

If you indicate that you will be using some data that already exist in this study, please describe the steps you have taken to assure that you are unaware of any patterns or summary statistics in the data. This may include an explanation of how access to the data has been limited, who has observed the data, or how you have avoided observing any analysis of the specific data you will use in your study. (optional)

Data collection procedures

The survey experiment is conducted by the survey company YouGov. The respondents will be quota-sampled from YouGov's internet panel of Danish voters to match the Danish population on gender, age, region and educational level. The survey will be conducted on YouGov's online platform. The plan is for YouGov to recruit 2,000 respondents.

(optional)

- No files selected

Sample size

Describe the sample size of your study. How many units will be analyzed in the study? This could be the number of people, birds, classrooms, plots, interactions, or countries included. If the units are not individuals, then describe the size requirements for each unit. If you are using a clustered or multilevel design, how many units are you collecting at each level of the analysis?

2,000 individuals.

Sample size rationale

This could include a power analysis or an arbitrary constraint such as time, money, or personnel. (optional)

Stopping rule

If your data collection procedures do not give you full control over your exact sample size, specify how you will decide when to terminate your data collection. (optional)

Variables

Manipulated variables

(optional)

(optional)

- No files selected

Measured variables

See "Study Design" section.

(optional)

- No files selected

Indices

(optional)

(optional)

- No files selected

Analysis Plan

Statistical models

I will set up two linear models that use voters' attributions of responsibility for the housing outcomes. The models will be estimated using an OLS regression with robust standard errors.

The first model will include respondents who received treatment 1 and 2 and got the question about personal responsibility. The independent variable will be whether you received the negative or positive outcome (a dummy.)

The second model will include respondents who received treatment 3 and 4 and got the question about government responsibility. The independent variable will be whether you received the negative or positive outcome (a dummy.)

The key tests will be whether the effect of outcome valence is different from zero in the two models. Hypothesis 1 suggests that there should be a significant effect in the first model. Hypothesis 2 suggests that there should be no significant effect in the second model.

(optional)

- No files selected

Transformations

If you plan on transforming, centering, recoding the data, or will require a coding scheme for categorical variables, please describe that process. (optional)

Inference criteria

What criteria will you use to make inferences? Please describe the information you'll use (e.g. specify

the p-values, Bayes factors, specific model fit indices), as well as cut-off criterion, where appropriate. Will you be using one or two tailed tests for each of your analyses? If you are comparing multiple conditions or testing multiple hypotheses, will you account for this? (optional)

Data exclusion

How will you determine which data points or samples if any to exclude from your analyses? How will outliers be handled? Will you use any awareness check? (optional)

Missing data

How will you deal with incomplete or missing data? (optional)

Exploratory analysis

If you plan to explore your data set to look for unexpected differences or relationships, you may describe those tests here. An exploratory test is any test where a prediction is not made up front, or there are multiple possible tests that you are going to use. A statistically significant finding in an exploratory test is a great way to form a new confirmatory hypothesis, which could be registered at a later time. (optional)

Other

Other

If there is any additional information that you feel needs to be included in your preregistration, please enter it here. Literature cited, disclosures of any related work such as replications or work that uses the same data, or other context that will be helpful for future readers would be appropriate here. (optional)