

Uninformed Voters and Corrupt Politicians

Abstract

Repeated studies have shown that voters in mature democracies do not reliably punish corrupt politicians. Most existing explanations focus on institutions and their effect on voters' ability to monitor politicians. I turn the focus to the electorate and examine the effect of variation in voters' political awareness. The previous literature on political awareness provides contradicting expectations in the context of corruption. While low-awareness voters are more sensitive to campaign-specific events such as corruption scandals and exhibit less partisan bias, high-awareness voters are less susceptible to incumbent appeals and better able to link retrospective judgments to vote choice. I find that low-awareness voters are significantly more likely than highly politically aware voters to vote for corrupt incumbents in the U.S. Congress. An across-the-board increase in political awareness would systematically reduce the support for corrupt incumbents. Results are robust to a wide range of potential threats to causal inference.

1 Introduction

Representative Charles C. Diggs Jr. was convicted to three years in prison on Oct. 7, 1978 for illegally diverting more than \$60,000 – around \$220,000 in present value – of his congressional employees’ salaries to his personal use.¹ Exactly 30 days later, he won reelection to the U.S. House of Representatives with 79% of the vote. Less than a year later, he was censured by Congress, and agreed to repay more than \$45,000, eventually resigning on June 3, 1980. This is not an isolated incident. Repeated studies have shown that voters in mature democracies do not reliably punish corrupt politicians. For example, more than sixty percent of incumbent legislators in the U.S. House of Representatives alleged of or charged with corruption between 1968 and 1990 were reelected (Peters and Welch, 1980; Welch and Hibbing, 1997); similar reelection rates are found among corrupt legislators in Italy (Chang, Golden, and Hill, 2010) and Japan (Reed, 1999). From the perspective of democratic accountability, this is troubling. If voters do not commonly punish corrupt acts, politicians lack incentives to avoid corrupt behavior. Corrupt politicians undermine the basic principles of representative democracy (Warren, 2004), reduce citizens’ trust in political institutions (Anderson and Tverdova, 2003), contribute to inefficiencies and waste of resources (Mauro, 1997) and exhibit inferior policy output (Lauderdale, 2010).

Why then do voters routinely reelect corrupt politicians? Most existing explanations focus on how institutions may promote or constrain voters’ ability to monitor and punish politicians (e.g. Chang and Golden, 2006; Kunicova and Rose-Ackerman, 2005; Persson, Tabellini, and Trebbi, 2003). Studies like these typically implicitly or explicitly treat the electorate as *homogenous*. With this assumption, our understanding of the puzzle is incomplete. We know little about what kinds of voters support corrupt politicians and why they do so.

¹“Ethics and Crimes.” CQ Press Electronic Library, CQ Almanac Online Edition, <http://library.cqpress.com/cqalmanac/document.php?id=cqal78-1237462> (accessed February 28, 2014).

In this article, I turn the focus away from institutions to the electorate itself. I ask to what extent the meagre punishment of corruption in the U.S. Congress can be explained by the variance in voters' political awareness. Scholars have focused considerable attention on the various causes and consequences of the uneven and generally low levels of political awareness (e.g. Zaller, 1992). However, this literature has not been systematically extended to the context of corruption in mature democracies. Intriguingly, the current body of theory and evidence provides conflicting expectations as to which – if any – segment of the electorate may withdraw support in the face of corruption charges. Some studies suggests that low-awareness voters may be more likely to respond to corruption scandals, as they are more sensitive to campaign-specific conditions, less partisan and thus less biased than high-awareness voters in evaluations of incumbent performance (Dimock and Jacobson, 1995; Zaller, 2004). Other studies imply that high-awareness voters may be more likely to punish corrupt politicians than low-awareness voters, as they are more knowledgeable of the candidates, are better able to link retrospective judgements to vote choice, and are less susceptible to incumbent campaign appeals (Delli Carpini and Keeter, 1996). Finally, some studies suggest that political awareness may have no effect, as modestly informed voters may compensate for the lack of information by using various heuristics and cues, as well as learning during campaigns (Lupia, 1994; Popkin, 1994).

Since it is difficult to credibly experimentally manipulate corruption scandals and habitual political awareness, this paper relies on observational data. This means that the inference about the effect of political awareness may be biased by such factors as politicians' strategic engagement in corruption in relation to their electorates' political awareness, or voters' strategic attentiveness to politics in relation to incumbent corruption. I therefore first discuss in detail the consequences of the violation of these important identifying assumptions. I argue that the selection bias due to politicians' strategic engagement in corruption is plausibly downward. If more highly-aware voters punish corruption more severely, then corrupt

politicians are more likely to strategically retire precisely when facing a more well-informed electorate, making it more difficult to find a statistically significant effect of an increase in political awareness on support for corrupt incumbents. Also, I show evidence that voters' political awareness is not confounded with their underlying responsiveness to corruption, and that my results are robust to a number of other common threats to causal interpretation.

With these findings in hand, I turn to a dataset constructed by merging corruption charges brought against members of the U.S. Congress with individual-level survey data from the American National Elections Studies over several decades. Despite probable attenuation bias, I find that low-awareness voters are significantly more likely to vote for incumbents accused of corruption than high-awareness voters in both the House and Senate elections. An across-the-board increase in political awareness would systematically reduce the support for corrupt incumbents. For example, in the House, a one-standard deviation increase in average political awareness of a district would inflict 40 percent more electoral damage to a corrupt incumbent than at observed awareness levels. While the average corrupt representative running for reelection won by more than ten percent of the vote, the typical corrupt incumbent would lose the election were he or she to face as informed an electorate as the most informed respondents in the sample.

These results suggest that improving the incentives of voters for monitoring politicians are important. Democratic elections cannot fulfill their promise of accountability if the electorate is insufficiently aware of politicians' performance. Electorates suffer a real cost from insufficient oversight of corrupt incumbents who misuse public resources for personal or partisan gain. My results suggest that steps to improve voters' political awareness, such as civic education and information campaigns, should facilitate electoral accountability.

2 Previous Research and the Argument

Corrupt incumbents in the U.S. Congress running for reelection on average lose votes compared to “clean” legislators, but have nonetheless been reelected more than sixty percent of the time in the past several decades (Abramowitz and Segal, 1992; Peters and Welch, 1980; Welch and Hibbing, 1997). Even incumbents implicated in the 1992 House Bank scandal, which brought about the greatest turnover in the House in forty years, were reelected at a rate of more than eighty percent (Alford et al., 1994; Dimock and Jacobson, 1995).² Scholars have found similar results in other developed democracies, such as among legislators in Italy (Chang, Golden, and Hill, 2010) and Japan (Reed, 1999), as well as mayors in Spain (Barbera, Fernandez-Vazquez, and Rivero, Forthcoming; Jimenez and Cainzos, 2006) and France (Lafay and Servais, 2000). Overall, these studies indicate that on average a corrupt politician is successfully reelected, losing only a relatively small fraction of the vote (Golden, 2010).

The majority of existing explanations of why corrupt politicians can maintain public support focus on institutions and their effect on voters’ ability to monitor and punish politicians. Scholars have examined the effects on corruption of electoral rules (Kunicova and Rose-Ackerman, 2005; Persson, Tabellini, and Trebbi, 2003), institutions that affect the “clarity of responsibility” of incumbent governments, such as party cohesion (Tavits, 2007), or freedom of the press (Besley and Burgess, 2002; Brunetti and Weder, 2003), the effects of the level of decentralization (Fisman and Gatti, 2002; Treisman, 2000), as well as the seniority rules in legislatures and other institutional sources of the incumbency advantage that may help insulate corrupt incumbents (Herrick, 2000; Nyblade and Reed, 2008; Peters and Welch, 1980; Reed, 1999).

These studies typically assume that the electorate is homogeneous in its level of informa-

²While the scandal was associated with a higher rate of retirement, it is not considered the main cause (Groseclose and Krehbiel, 1994; Hall and van Houweling, 1995).

tion about corruption, and that each voter is equally motivated and capable of assessing the significance and consequences of corruption. However, such assumptions obscure potentially consequential heterogeneities in the electorate. Dimock and Jacobson (1995) showed that while more than ninety percent of respondents in the 1992 National Election Study claimed to be aware of the House Bank scandal, only 43 percent got it right as to whether their representative wrote any bad checks, and that even “some of them were clearly guessing” (p. 1152). In this vein, I focus on the relationship between the voters’ political awareness and support for corrupt incumbents relative to incumbents not facing corruption charges. In particular, I hypothesize that the a voter’s likelihood of voting against a corrupt incumbent is conditional on their political awareness.

It is important to note that my focus on voters’ political awareness is related to but different from two recent strands of the literature that examine the effects of information about corruption on voter behavior. First, several recent studies have focused on the consequences of revealing information about corruption in low-transparency environments in developing democracies (Chong et al., 2011; Ferraz and Finan, 2008). Unlike these studies, I deliberately focus on instances of *publicized* corruption investigations that are more easily observable by the voters – to the extent that the voters are aware of them.³ Moreover, as explained in more detail in the next section, voters’ political awareness may affect their support for corrupt incumbents not just through availability of information, but *how* this information is used in the wider context of understanding politics.

Second, several studies have focused on the effects of randomly exposing citizens to hypothetical corruption scenarios in the context of survey experiments (Anduiza, Gallego, and Muñoz 2013; Banerjee et al. 2014; Doherty, Dowling, and Miller 2011; self-citation omitted). Unlike these studies, this paper draws on several decades of data on real-world

³Representative Diggs’ indictment, mentioned above, which took place almost eight months before the election, was widely reported in the contemporary press. See for example “U.S. Indicts Rep. Diggs for Fraud,” *Chicago Tribune*, p. 2, March 24, 1978.

rather than hypothetical corruption cases. While relying on an observational rather than an experimental approach means a certain amount of sacrifice of the internal validity of the study, in Sections 5.1 and 7, I discuss extensively the reasons why I believe my results can plausibly be interpreted as causal.

3 Theoretical Expectations

Scholars have shown repeatedly that Americans' level of knowledge of politics is generally low and highly heterogeneous (e.g. Campbell et al., 1960; Converse, 1964; Delli Carpini and Keeter, 1996). However, we do not know whether low levels of political awareness and high variance thereof may contribute to the electoral impunity of corrupt politicians discussed in the previous section. Intriguingly, the existing literature provides conflicting expectations about the importance of political awareness for electoral accountability of corrupt incumbents. Some scholars argue that voters with low attentiveness to politics may compensate for the lack of information by using various heuristics, such as cues from reference groups (e.g. Lupia, 1994; Lupia and McCubbins, 1998; Sniderman, Brody, and Tetlock, 1991), "gut-level" reasoning (Popkin, 1994), or simple retrospective judgements of incumbent performance (e.g. Fiorina, 1981; Sniderman, Glaser, and Griffin, 1990). Publicized corruption charges are likely to be strong signals during an election campaign and may represent a ready heuristic device on incumbent performance available to low-awareness voters. Also, campaigns in modern democracies can help close the gap between the uninformed and the informed by the time of the election (Sekhon, n.d.). These arguments imply that low-awareness voters may compensate for their lack of information and punish corrupt politicians as much as more politically attentive voters. In other words, the null hypothesis, H_0 , is:

Hypothesis H_0 : The variance in political awareness should not affect the support for corrupt

incumbents relative to clean incumbents.

Some studies point to potentially negative consequences of low political awareness. Less attentive voters tend to be less knowledgeable of incumbents and challengers (Zaller, 1992). Low-awareness voters may be less able than high-awareness voters to assess the relevance and quality of cues from reference groups (Kuklinski and Quirk, 2000; Luskin, 2002), or to link their retrospective judgements to vote choice (Delli Carpini and Keeter, 1996). A low-information voter may for example be less able to differentiate between law-breaking corruption and negative campaigning. Further, low-awareness voters are more susceptible to dominant incumbent campaigns (Kuklinski and Quirk, 2000; Zaller, 1992), and incumbents are likely to campaign particularly hard when facing corruption charges against them. Finally, high-informed voters may be better able to understand the negative consequences of corruption. These mechanisms imply the following alternative to the null hypothesis:

Hypothesis H_{A1} : Support for corrupt incumbents relative to clean incumbents *decreases* as political awareness increases.

Other studies suggest that low-awareness voters may be more responsive to corruption charges than high-awareness voters. Zaller (2004) finds that low-awareness voters are more sensitive to campaign-specific events (in presidential elections), such as economic conditions, foreign policy crises, or candidates' ideological shifts. High-awareness voters, for their part, tend to be more ideological, and strong partisans have in turn been shown to form biased evaluations of incumbents' performance (e.g. Duch, Palmer, and Anderson, 2000; Krause, 1997), and to more heavily discount allegations of corruption of their preferred candidate (Dimock and Jacobson, 1995). Low-awareness voters may have less knowledge and understanding of the consequences of corruption, but they may be more responsive and more ideologically

“innocent.” Moreover, highly sophisticated voters tend to be more knowledgeable of and more concerned about policy issues. They may be more willing to accept a trade-off between policy and corruption than low-awareness voters, particularly if corrupt politicians are better able to provide such benefits as pork-barrel spending (Rundquist, Strom, and Peters, 1977). These arguments suggest a rival alternative to the null hypothesis:

Hypothesis H_{A2} : Support for corrupt incumbents relative to clean incumbents *increases* as political awareness increases.

4 Measures of Corruption and Awareness

I now proceed to the empirical tests of these hypotheses. First, I describe how I measure incumbent corruption and voters’ political awareness. Next, I discuss in detail the empirical strategy, identification and quantities of interest, followed by the presentation of the results and their robustness.

4.1 Incumbent Corruption

I define incumbent corruption as those *publicly observable* charges of corruption involving House and Senate members that are *followed by a subsequent action from the relevant authorities*, such as federal prosecutors, congressional ethics committees, the Federal Election Commission, the Internal Revenue Service, etc.⁴ Previous studies that have included corruption scandals not followed by investigations commonly relied on media accounts of scandals (Kiewiet and Zeng, 1993; Nyblade and Reed, 2008; Peters and Welch, 1980; Welch and Hibbing, 1997). However, media reports of corruption can be partisan and lack balance (Puglisi

⁴Scandals not followed by investigative action represent a noisy measure of corruption, including for example instances of negative campaigning not necessarily related to actual corruption.

and Snyder, 2011). Scandals that are not investigated by definition represent relatively minor offenses. Other scholars have shown that voters are considerably less sensitive to scandals not involving actual abuses of power (Doherty, Dowling, and Miller, 2011; Zaller, 1998).

The dataset of corruption cases covers the period 1968–2002, to correspond with the biannual National American Election Studies survey data I use to construct the measure of political awareness and other relevant variables, which I describe below.⁵ Drawing on a number of sources (Brown, 2006; CQ, Various 1992; Hirano and Snyder, 2012; Noyer, 1995; Roberds, 1997), I identify a total of 470 corruption cases involving politicians from the House of Representatives (406 cases, including 275 representatives involved in the 1992 House Bank scandal) and the Senate (64 cases). However, I exclude the cases where the formal charges were made but then dropped during the same term in office of the politician involved, because the voters could observe that the investigation was closed.⁶ I also drop cases where investigations were initiated only after a politician’s departure from Congress, because the voters were unlikely to learn details of a corruption case while a politician was in office.⁷ The final dataset includes 441 corruption cases with some form of investigation (377 in the House and 46 in the Senate).⁸ Of these, 124 corruption cases (107 in the House and 17 in the Senate) are represented with at least one survey respondent in the ANES data. In the U.S. House elections, this gives 1,481 respondents from districts with an incumbent facing corruption charges, and 27,693 respondents from districts with an incumbent without any corruption

⁵I do not use more recent corruption cases because the recent ANES data do not cover any of the constituencies involved.

⁶For example, in 1977 Rep. William Clay was under grand jury investigation for alleged tax evasion and fraud. The IRS terminated the investigation in July 1977, four months before the election.

⁷For example, in the Koreagate scandal that broke out in 1976, Rep. Otto Passman was indicted on March 31, 1978 on charges of receiving illegal payments from a Korean lobbyist, as well as tax evasion. However, he lost the party seat primary in 1976. Including such cases does not affect the results.

⁸There are also several cases where members were acquitted or charges dropped after the election. For example, in 1968 *Life* magazine twice charged Sen. Edward Long with using his position to aid imprisoned Teamster Union President James Hoffa, but the charges were dropped after the investigations by the ethics committee and the grand jury. While I keep these cases in the sample, the results are entirely insensitive to their exclusion.

charges. In the Senate, there are 1,276 respondents in elections with an incumbent facing corruption charges, and 15,436 respondents in elections with clean incumbents. The number of corruption cases represented in the analysis relative to the full dataset of corruption charges is lower because of the limited coverage of congressional districts and states in the ANES data, as well as the fact that some politicians implicated in corruption resign or retire. Summary statistics for all corruption cases and short descriptions for those cases retained in the analysis are given in Tables A1, A2, and A3 in the Online Appendix.

4.2 Political Awareness

I construct an individual-level measure of political awareness, following the established practice of using knowledge and policy issue questions from surveys (Althaus, 2003; Delli Carpini and Keeter, 1996; Zaller, 1992).⁹ Specifically, I rely on a number of items from the biennial American National Election Study (ANES) time-series surveys conducted between 1968 and 2002. The items probe respondents' factual knowledge of politics and institutions, such as the party holding the majority in the House, their ability to recognize political figures (such as the name of the vice president), proper placement of parties and candidates on a left-right scale on policy issues, and the interviewer's judgement about the respondents' overall political information. These items have been proven superior in measuring differences in political awareness to other proxies such as education, self-reported media use or political participation (Luskin, 1987; Zaller, 1992). Moreover, such general knowledge of politics is less likely to be affected by the occurrence of a scandal than some of these other proxies, thus alleviating the potential problem of endogeneity of the measure of political awareness

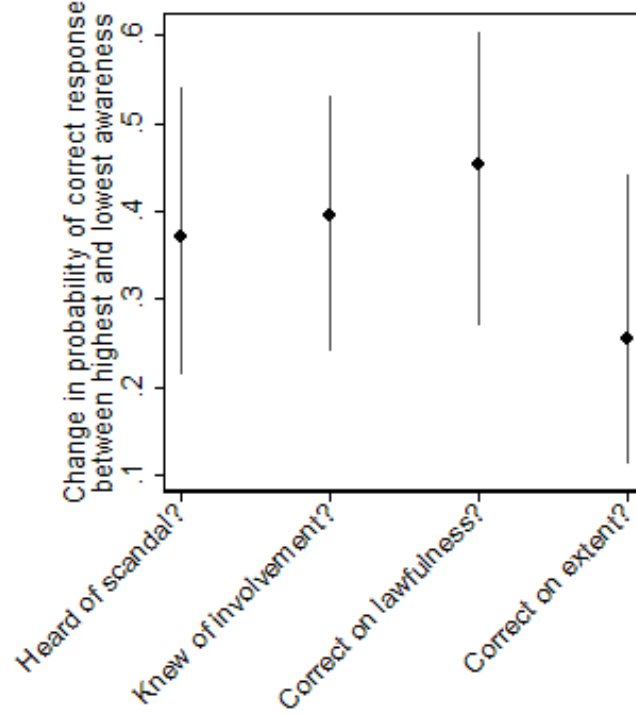
⁹I will therefore perform all the analysis at the individual level. Another approach is to focus on districts or states as the unit of analysis. However, this is difficult due to the lack of political awareness data at the aggregate level over a longer period of time. One potential solution is to estimate the aggregate-level political awareness from individual-level survey data through multi-level modeling and post-stratification (Lax and Phillips, 2009; Warshaw and Rodden, 2012). However, the American National Election Studies – the only long-running surveys containing political knowledge items – are not suitable for such an approach because of clustered sampling and small samples of respondents per district and state (Stollwerk, 2013).

to corruption (I discuss this important point in more detail below). The political awareness score for each respondent from each survey is calculated using factor analysis on all the relevant survey items; the primary factor is large, and the construct validity of the scores is strongly confirmed with standard statistics such as the Cronbach's α . I rank the score of each respondent in a particular survey with respect to that survey's maximum; this procedure removes any time trends, and makes the scores comparable across the surveys. Sections A4 and A5 in the Online Appendix provide more details on the coding of the knowledge items, the construction of the political awareness score, and its validity.

This measure of political awareness is assumed to incorporate not just the general knowledge of politics, but also the familiarity with and understanding of the consequences of incumbent corruption. The 1992 National Election Study allows me to test whether this is a valid assumption. This survey included a battery of questions directly related to the respondents' awareness and understanding of the 1992 House Bank scandal as well as a rich battery of questions I use for the construction of the measure of political awareness. Cross-checking with the data on the actual involvement of the respondents' own representatives, Figure 1 shows strong evidence that general political attentiveness is strongly correlated with the knowledge and understanding of the House Bank scandal. Controlling for a number of important respondent characteristics such as partisanship, education and income, high-awareness respondents were about forty percentage points more likely than low-awareness respondents to be familiar with the House Bank scandal; they were also better able to correctly identify the involvement of their incumbent representative; to judge the extent to which their incumbent was implicated; and they were almost fifty percentage points more likely to correctly judge whether their incumbent's involvement included breaking of any laws.¹⁰

¹⁰More details about regression specifications underlying Figure 1 are given in Section A5 in the Online Appendix.

Figure 1: Familiarity with the 1992 House Bank scandal and political awareness



Note: Dots are changes in the probability of a correct response to the ANES items about the familiarity with the 1992 House Bank scandal when political awareness changes from the lowest to the highest percentile. All other covariates are kept at their means or medians. Caps represent the 95 percent confidence interval.

5 Empirical Model

To test the hypothesis that political awareness affects the support for corrupt incumbents relative to clean incumbents, I specify the following empirical model:

$$\begin{aligned}
 Pr(Y_{i,j,t} = 1) = \text{probit}^{-1} & \left[\alpha + \beta_1 I_{i,j,t} + \beta_2 C_{j,t} + \beta_3 I_{i,j,t} \times C_{j,t} + \sum_k \gamma_k \mathbf{R}_{i,j,t} + \right. \\
 & + \sum_k \delta_k (\mathbf{R}_{i,j,t} \times I_{i,j,t}) + \sum_m \theta_m \mathbf{S}_{j,t} + \sum_m \xi_m (\mathbf{S}_{j,t} \times I_{i,j,t}) + \\
 & \left. + \sum_T \psi_t (\mathbf{A}_t * D_{j,t}) + \epsilon_{i,j,t} \right], \quad (1)
 \end{aligned}$$

where i is an individual, located in a district or state j , surveyed in an election year t ; Y is the binary incumbent vote choice, coded as one if the respondent reported voting for the incumbent; I is the respondent’s political awareness score, C is the corruption indicator variable equal to one if the member of the U.S. Congress was facing a corruption investigation, $I \times C$ is the interaction between political awareness and the corruption variable; \mathbf{R} is the vector of respondent-level control variables;¹¹ \mathbf{S} is the vector of incumbent and district or state-level control variables;¹² \mathbf{A} are the year dummies.¹³ These variables are commonly included in the studies of voter behavior when the dependent variable is the incumbent vote choice, as opposed to the party vote choice (e.g. Fridkin and Kenney, 2004; Kahn and Kenney, 1999). Section A7 in the Online Appendix contains more details about the coding of each variable included in the regression model in equation 1. In addition to the interaction between the measure of political awareness and the corruption variable – which is of primary interest – the regression also includes a full set of interactions between individual-level controls and political awareness ($I \times \mathbf{R}$) and district or state-level control variables and political awareness ($I \times \mathbf{S}$). The full set of interactions is included in order to minimize the possibility of these characteristics confounding the effect of awareness on support for corrupt relative to clean incumbents. In Section 7 and in Section A9 in the Online Appendix, I show that the results based on this baseline model are insensitive to the inclusion of a number of additional control variables.

Since ANES suffers from considerable item non-response, I use multiple imputation to

¹¹ \mathbf{R} includes: the direction and strength of the respondent’s partisanship, retrospective economic evaluation, approval of the president, and the ideological distance from the incumbent

¹² \mathbf{S} includes: incumbent’s party affiliation D (a Democrat is coded as one), logged two-party vote margin of the incumbent from the previous electoral cycle, length of the incumbent’s tenure in years, and a measure of media intensity of the campaign

¹³Since the study focuses on incumbent support, the year effects do not enter alone but are instead interacted with the incumbent Democratic party affiliation variable, D . A positive coefficient on such an interacted year effect means that the year was advantageous for Democratic incumbents. The incumbent party affiliation variable is included as well, but the year dummies are not. This amounts to assuming that any given year is not expected to be advantageous or disadvantageous for incumbents per se, but that the effect depends on factors captured by incumbents’ party affiliation.

handle the missing data, since discarding the missing data induces inefficiency and possibly bias (Rubin, 1987). All estimates presented below are combined across the imputed datasets using standard rules developed in Rubin (1987). A detailed discussion of the imputation process is given in Section A6 in the Online Appendix. All estimations are weighted by sampling weights, and standard errors are clustered by district-year or state-year. All election surveys are pooled together. Estimates are separately obtained for the House and the Senate.¹⁴

5.1 Identification

There are two important identification assumptions underlying the empirical model in equation 1 which deserve discussion. First, conditional on the covariates included in the model, the incumbents' decisions to engage in corruption, or to run for reelection following a corruption investigation, are not systematically related to the level of political awareness of their electorates.¹⁵ Second, conditional on the covariates, the respondents' political awareness is not systematically related to their underlying responsiveness to corruption.

These assumptions would most likely hold if: (a) respondents were randomly assigned to districts or states with and without a corrupt incumbent; and (b) respondents' level of political awareness was randomly manipulated. This could potentially be achieved through an experimental design. However, there are several disadvantages to such an approach. Since random manipulation of voters' exposure to actual corruption scandals is infeasible, most experimental studies of corruption rely on exposure to hypothetical corruption scenarios (e.g, Anduiza, Gallego, and Muñoz 2013; self-citation omitted). Such studies are valuable, but ultimately limited in explaining the real-world track record of corrupt incumbents over

¹⁴In the House regressions, I also include an indicator variable as to whether the incumbent was redistricted in year t .

¹⁵Similarly, conditional on the variables in the model, the level of political awareness is not systematically related to the likelihood that incumbent corruption is detected by the authorities.

a long period of time. Second, some survey and field experiments have manipulated the information about corruption available to the respondents (e.g. Banerjee et al., 2014; Chong et al., 2011; Winters and Weitz-Shapiro, 2013). While such approaches are related to my focus on political awareness, they are not identical. As discussed above, as a more longer-term, habitual attentiveness to and understanding of politics, political awareness is important for responsiveness to corruption in ways more varied than simple availability of information. Longer-term political awareness is considerably more difficult to manipulate experimentally than simple supply of information. For these reasons, I opt for a study using actually observed corruption scandals and respondents' actual levels of political awareness.

In the absence of experimental manipulation, I now discuss the consequences of potential violations of these two assumptions. First, politicians' strategic engagement in corruption in response to their electorates' political awareness may induce selection bias. But simple formal reasoning demonstrates that if such bias exists, it is likely to be consistently signed in the direction that makes it *more difficult* to reject the null hypothesis. In Section A1 in the Online Appendix, I consider a stylized complete-information game-theoretic model in which a strategic incumbent considers voters' awareness as he decides whether to engage in corruption and whether to subsequently launch a reelection bid. I assume that corruption brings a net benefit to the politician provided he can maintain political office, and that he would rather retire than run for reelection and lose. Assume for the moment that H_{A1} is true, i.e. that voters with higher political awareness are less likely than low-awareness voters to support corrupt incumbents. Then, H_{A1} can be most simply reflected by the assumptions that a high-awareness electorate prefers to reelect the incumbent only if not involved in corruption, whereas a low-awareness electorate always reelects the incumbent. In the model's subgame-perfect equilibrium, the likelihood of seeing a corrupt incumbents running for reelection in districts with higher-awareness electorates is lower than in districts with lower-awareness electorates. This creates attenuation bias, because we should observe

fewer incidents of corruption among incumbents from high-awareness districts than among low-awareness districts, making it harder to find a negative effect of higher political awareness on support for corrupt incumbents. The same result about attenuation bias obtains if H_{A2} is assumed to be true (see Section A1 in the Online Appendix).

Second, estimates of the effect of political awareness on the support for corrupt incumbents may be biased if high or low-awareness voters do not pay attention to politics (and scandals) precisely because they know that such attention would not affect their response to corruption. In particular, evidence in support of H_{A1} may be spuriously due to low-awareness voters being unresponsive even if they had been more attentive (and vice versa for H_{A2}). I believe this is not a concern for my results below, for several reasons. Using the data from the 1992 ANES, Figure A3 in Section A2 in the Online Appendix shows that after controlling for a rich set of respondent characteristics, low-awareness and high-awareness voters do not statistically significantly differ in the extent to which they consider the House members' behavior in the House Bank scandal punishable.¹⁶ Moreover, if high-awareness voters are more responsive, an occurrence of a corruption scandal may induce them to become more political aware relative to low-awareness voters, again causing bias (in the direction of support for H_{A1}). While my measure of political awareness is less susceptible to such endogeneity concerns by reflecting a stable level of voters' familiarity with politics (e.g. Converse, 2000), I nonetheless find that my results reported below hold when I use only the ANES panel data (the 1972-1976 panel, 1990-1992 panel, and the 1992-1997 panel) and substitute the contemporaneous values of political awareness and all other individual-level variables with those in the previous sample wave for all panel respondents, *before* the corruption scandal occurred. Finally, in their experimental study, Doherty, Dowling, and Miller (2011) do not find a significant interaction between respondents' responsiveness to their corruption treatments and

¹⁶If anything, the more highly aware voters are *less* responsive, indicating that it would be harder to find support for H_{A1} , which is what I show in the next section.

political interest, the variable most closely related to the political awareness studied here.¹⁷ I present several other results in Section 7 that further suggest that my results can reasonably be considered causal.

5.2 Defining the Quantities of Interest

I now describe the two types of estimates I focus on: (1) individual-level effects of political awareness, and (2) district or state-level effects derived from the individual-level estimates. At the individual level, the unconditional effect of corruption on incumbent support is the difference between the predicted probability of voting for a corrupt incumbent and a clean incumbent, based on the estimates from the model in equation 1. Since I am interested in how political awareness moderates the effect of corruption on incumbent support, I calculate this difference in the predicted incumbent vote probability for different values of the political awareness score. To examine the full range of values of political awareness, I focus on the difference in the predicted vote probabilities from the 1st percentile to the 100th percentile in five-percentile steps – from the lowest to the highest observed levels of political awareness.¹⁸ Therefore, the individual-level effect of interest is how the difference in the probability of voting for a corrupt incumbent relative to a clean incumbent changes as political awareness of an otherwise typical voter changes.

If this individual-level effect does not change noticeably across different values of political awareness, then naturally the null hypothesis (H_0) of no moderating effect of political awareness cannot be rejected. If the predicted probability of voting for a corrupt incumbent decreases relative to the predicted probability of voting for a clean incumbent as political awareness increases, then H_0 is rejected in favor of H_{A1} ; that is, high-awareness voters are less likely to support corrupt incumbents (relative to clean incumbents) than low-awareness

¹⁷See Table column 1 of A3 in Doherty, Dowling, and Miller (2011).

¹⁸In line with standard practice, I fix the remaining variables at their means for continuous variables, medians for categorical variables, and modes for binary variables.

voters. On the other hand, if the difference in predicted vote probabilities increases as political awareness increases, H_0 is rejected in favor of H_{A2} .

Even if political awareness is found to moderate the effect of corruption on incumbent support at the individual level, it may translate into little aggregate effect (e.g. Page and Shapiro, 1992). For example, if the individual-level effect is pronounced but concentrated among a small group of voters, aggregate-level results are also likely to be small. Therefore, I also examine an aggregate-level effect derived from individual-level estimates from the baseline model. First, I calculate the difference in the predicted *vote share* for a corrupt incumbent and a clean incumbent at observed levels of political awareness and all other variables in the baseline model. To do so, I use the estimates from the baseline model to compute the predicted probability of voting for the incumbent for each respondent in each district or state, given their characteristics, including political awareness, and the characteristics of their district or state, including whether their incumbent was involved in a corruption investigation. I then average these predicted probabilities for each district or state, and take an average difference between those constituencies that had a corrupt incumbent and those that did not. This aggregate effect is essentially the effect of corruption on incumbent vote share, albeit based on aggregating individual-level estimates and directly accounting for voters' political awareness.

Second, since the study focuses on the moderating effect of political awareness on the support for corrupt incumbent, I recalculate the aggregate effect just described by replacing the observed levels of each respondent's political awareness with different hypothetical values, while keeping all the other individual and constituency-level characteristics unchanged at their actual values. I then examine how the difference between the predicted vote share for corrupt and clean incumbents changes in response to this simulated change in the average district-level or state-level political awareness. In other words, using the estimates from the baseline model, I focus on how the effect of corruption on incumbent vote share changes as

the political awareness of the *electorate as a whole* changes.

I compare the baseline aggregate corruption effect at the observed levels of political awareness to the aggregate corruption effect when all voters are assigned four other hypothetical values: (a) average awareness of a district/state which is one standard deviation above the mean for the whole sample (for the House, it is the 8th Congressional district in Ohio in 1968, at the 62nd percentile of the political awareness scale; for the Senate, it is the state of Iowa in 1984, at the 59th percentile); (b) two standard deviations above the mean (AZ-1 in 1992, 74th percentile; New Hampshire, 1984, 70th percentile); (c) highest observed average awareness (VA-8, 1994, 83 percentile; Oregon, 1990, 72nd percentile); and (d) maximum observed individual-level awareness (100th percentile).

As with the individual-level effect, if the difference between the predicted vote share for a corrupt and a clean incumbent does not change noticeably as political awareness changes, then in the aggregate, political awareness cannot be said to condition the effect of corruption on an incumbent’s reelection probability. Clearly, if the difference in the predicted vote share declines as hypothetical political awareness of the electorate increases, then H_0 is rejected in favor of H_{A1} (in the aggregate), and vice versa for H_{A2} .

6 Results

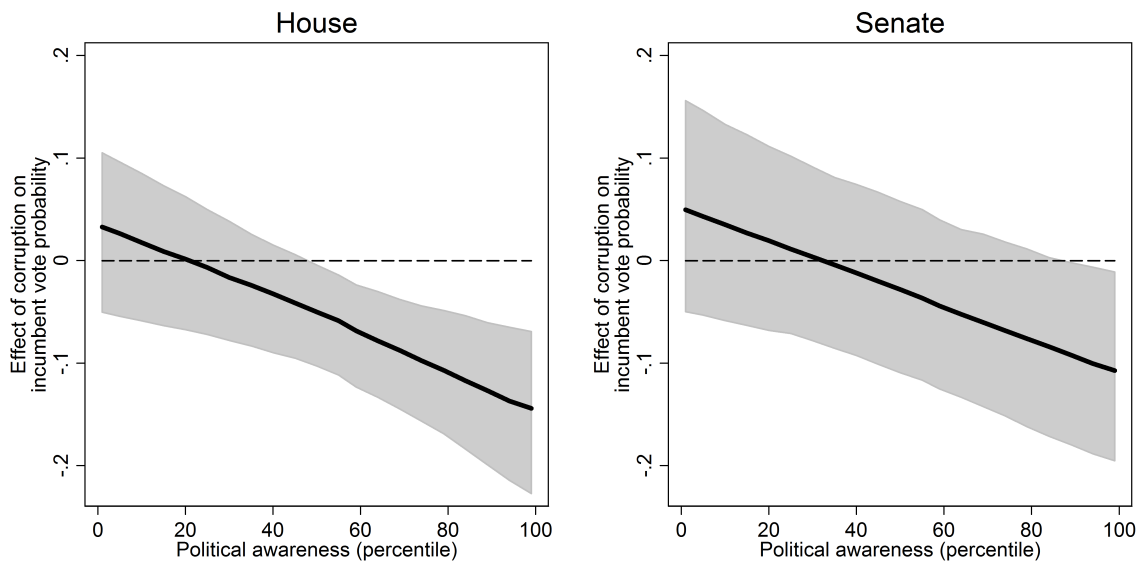
In this section, I present the results for the quantities of interest described in the previous section. I focus mostly on the graphical representation of results. Coefficient estimates can be found in Table A6 in the Online Appendix.

6.1 Individual-Level Effects

The lines in Figure 2 represent the estimates of the individual-level effect – the difference in the predicted probability of voting for a corrupt incumbent relative to a clean incumbent

across different levels of political awareness – for the House (left panel) and the Senate (right panel). If the line is below zero, the predicted incumbent vote probability for a given level of political awareness is lower when an incumbent is corrupt. The shaded area represents the 95 percent confidence interval.

Figure 2: Individual-level effect of corruption on vote choice conditional on political awareness



Note: The lines represent the difference in the estimated probability of voting for a corrupt incumbent relative to a clean incumbent for different levels of political awareness. Results are based on the model in equation 1. All control variables in the model are kept at the means or medians. Negative values indicate a negative effect of corruption on incumbent support for a given level of political awareness. Estimates are calculated for values of political awareness from the 1st percentile to the 100th percentile in five-percentile steps. The shaded area represents the 95 percent confidence interval. All quantities are averaged over fifteen imputations.

The figure shows that the null hypothesis of no moderating effect of political awareness on the support for corrupt incumbents is clearly rejected in favor of H_{A1} for both the House and the Senate elections. That is, the predicted support for a corrupt incumbent relative to a clean incumbent drops considerably as political awareness increases. In the House, a voter with the highest level of political awareness is about 13 percentage points less likely

to vote for a corrupt incumbent compared to a clean incumbent. The result is statistically significant (the 95 percent confidence interval is between 6 and 23 percent). This is a non-trivial effect: the average unconditional propensity of voting for the House incumbent in the sample is 71 percent, and the estimated drop in the predicted probability at the highest political awareness represents almost one fifth of that unconditional propensity. On the other hand, individuals with the lowest level of political awareness, *ceteris paribus*, are about three percentage points more likely to vote for corrupt incumbents compared to clean incumbents, but this effect is statistically indistinguishable from zero. In between the two extremes, support for a corrupt incumbent compared to a clean incumbent steadily declines with the increase in political awareness, and becomes statistically different from zero at about the average level of political awareness.

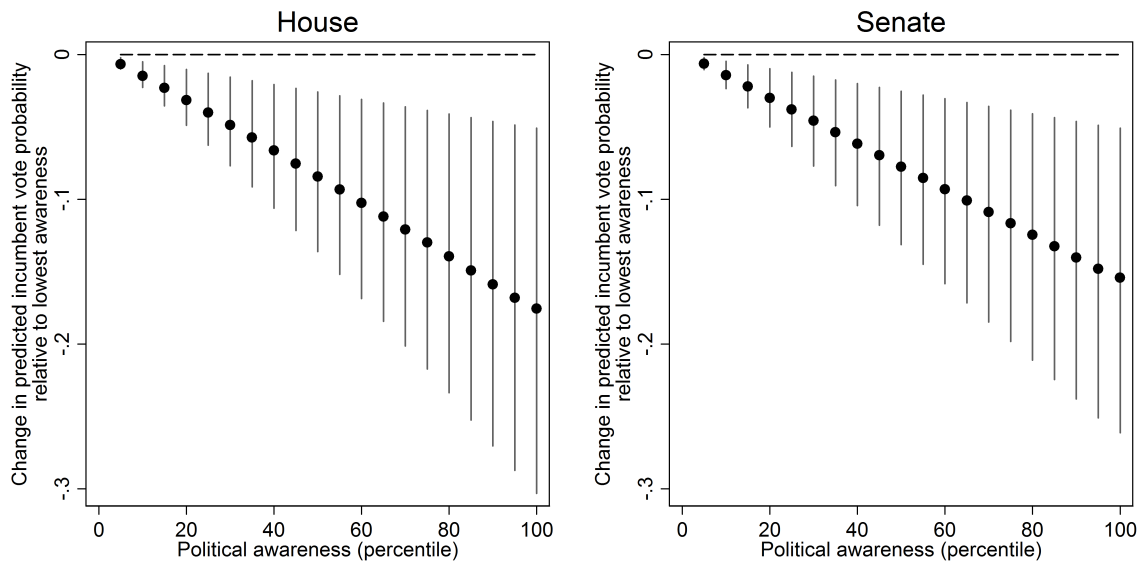
Estimates for the Senate are quite similar, but somewhat less precise. The most sophisticated voters are about 12 percentage points less likely to support corrupt incumbents than clean incumbents, which represents about 17 percent of the average sample unconditional probability of voting for the incumbent in a Senate race (60 percent).¹⁹

While the individual-level effect of corruption on incumbent support increases with political awareness, high-awareness voters may still be insufficiently different from low-awareness voters. In other words, the slope of the line in Figure 2 may be statistically indistinguishable from zero. Figure 3 shows the difference in the individual-level effect relative to the lowest-awareness voters as political awareness increases. For example, voters in the House elections with the average level of political awareness are 10 percentage points less likely to vote for a corrupt incumbent compared to a clean incumbent than the least attentive respondents, and 7 percentage points more likely to do so than the most attentive voters. All the differences

¹⁹There is some indication in the existing literature that political awareness may exert non-monotonic effects on political behavior (Zaller, 1992). Adding higher-order terms for political awareness and to the baseline regression specification does not change the substance of the results. Details are available upon request.

relative to the least informed voter are statistically significant at the 95 percent level. In the Senate, the effect of the increase in political awareness is slightly less steep, but nevertheless substantively similar.

Figure 3: Change in the effect of corruption on vote choice across political awareness



Note: The dots represent the difference between the predicted probability of voting for a corrupt incumbent and a clean incumbent for a respondent whose political awareness is at the given percentile relative to a respondent whose political awareness is at the lowest observed level (1st percentile). Results are based on the model in equation 1. All control variables in the model are kept at the means or medians. Estimates are calculated for values of political awareness from the 1st percentile to the 100th percentile in five-percentile steps. The shaded area represents the 95 percent confidence interval. All quantities are averaged over fifteen imputations.

6.2 Aggregate-Level Effects

Individual-level estimates strongly suggest that the effect of incumbent corruption on vote choice is conditional on political awareness, and that corrupt incumbents may be able to avoid electoral punishment when facing a relatively low-informed electorate. Therefore, I turn to the aggregate-level effects as described in Section 5.2, which are shown in Table

1 for the House (column 1) and the Senate (column 2). The first row of column 1 in Table 1 shows the estimated aggregate-level effect of corruption on predicted incumbent vote share at observed levels of political awareness in the House. Based on the individual-level ANES data – including observed political awareness – and individual-level estimates from the model in equation 1, a corrupt incumbent in the House on average loses about 4.8 percentage points of the vote compared to a clean incumbent. This effect is quite precisely estimated.²⁰ Note, however, that the average two-party vote share of corrupt incumbents in the House of Representatives who faced opponents and were in the ANES sample is 61.4 percent. Therefore, like in the previous studies, the aggregate-level result suggests that an average corrupt incumbent was far from losing an election.

Moving down column 1, Table 1 shows the estimates of the aggregate effect of corruption for different simulated levels of political awareness of the electorate. Much like the individual-level effect, the effect of a hypothetical across-the-board increase in political awareness in the electorate in the House elections is non-trivial. Simulating an increase in the average political awareness of a congressional district by one standard deviation would *ceteris paribus* reduce the vote share of a corrupt incumbent in the House compared to a clean incumbent by 6.6 percentage points (row 2 of column 1), or by additional 1.8 percentage points compared to the effect at the existing levels of political awareness. This is close to a 40 percent greater corruption effect than at the existing awareness levels. Looking at the fourth row of column 1, we can see that if the average district had the average political awareness of Virginia’s 8th district in 1994 (the district with the highest observed average awareness, at the 82nd percentile), a corrupt incumbent would lose about 5 percentage points of the vote on top of the average damage from corruption – more than 100 percent of the effect with observed

²⁰This is at the low end of the range from previous aggregate-level estimates of the effect of corruption on vote share, which estimate that the corrupt incumbents in developed democracies lose about 5 to 10 percentage points. Of course, the main differences between this study and the previous ones is that the estimated effect of corruption is obtained on the basis of individual-level rather than district or state-level data, and that it directly incorporates the electorate’s political awareness.

awareness. The electoral punishment of corruption would be higher still if the electorate were “fully informed:” the average corrupt incumbent in the sample would lose the election with certainty. Considering the potential attenuation bias introduced by incumbent selection discussed in Section 5.1, the electoral effect of an increase in political awareness on the electoral outcomes in the House may be even greater.

Table 1: Aggregate-level effect of corruption at different levels of political awareness

	Aggregate-level effect, House	Aggregate-level effect, Senate
Observed political awareness	−0.048 (0.027)	−0.019 (0.031)
One standard deviation above mean	−0.066 (0.027)	−0.025 (0.030)
Two standard deviation above mean	−0.083 (0.030)	−0.030 (0.030)
Highest average observed	−0.098 (0.034)	−0.034 (0.030)
Maximum political awareness	−0.124 (0.043)	−0.050 (0.034)

Note: The first row shows the difference between the predicted vote share for a corrupt incumbent and a clean incumbent based on the observed values of all variables – including political awareness – and the coefficient estimates from the baseline model in equation 1. The standard errors are in parentheses. The remaining estimates are the aggregate-level effects recalculated when the observed political awareness of each voter is replaced with hypothetical values indicated in each row of the table. All quantities are averaged over fifteen imputations.

In the Senate, the aggregate effects (column 2) are smaller and less precise than in the House. This contradicts the previous studies, which indicate marginally greater damage of corruption charges in the Senate than in the House (Abramowitz and Segal, 1992). Nevertheless, a hypothetical increase in political awareness again leads to a greater corruption penalty. The median two-party vote margin for corrupt incumbents in the analysis sample is 17 percent. The last row of column 2 shows that a fully informed electorate in the Senate elections would withdraw additional five percentage points of support for the corrupt incum-

bents, or about one-third of the average corrupt incumbent’s observed vote margin. This hypothetical across-the-board increase in awareness leads to a two-and-half times stronger corruption effect than at observed levels of awareness. While not an insignificant penalty, this would nonetheless be insufficient to guarantee electoral defeat for the average corrupt senator in the sample, unlike the result obtained for the House. There are several likely reasons for this difference. First, corruption is more likely to induce strategic retirements in the Senate than in the House (see the summary statistics in Table A1 in the Online Appendix), thus potentially creating greater attenuation bias due to sample selection, as argued in Section 5.1 above. Moreover, variance in the average political awareness is greater for congressional districts than for the states – thus, a hypothetical increase in the average political awareness has a greater estimated impact in the former than in the latter. Also, the incumbency advantage is smaller in the Senate, which also compresses the effect of political awareness (and other factors) on the vote share.

7 Robustness Checks

Here, I discuss that the results presented in the previous section are robust to: (1) the inclusion of a number of additional potentially confounding variables; (2) alternative measures of incumbent support; (3) variation in the nature of incumbent corruption; and (4) different modeling approaches. Due to space constraints, more details are given in Section A9 in the Online Appendix or are available upon request, and only a brief discussion is given here.

First, the results are substantively unchanged if: (a) all individual-level characteristics are interacted with respondents’ partisanship, in addition to political awareness; (b) all variables are interacted with the corruption indicator; and (c) respondents’ income and various demographic characteristics, as well as their interactions with awareness and partisanship, are added to the baseline model. These more flexible specifications reduce the likelihood

that the results are driven by the unobservable differences among voters of different levels of political awareness correlated with ideology or income.

In addition to the potential selection bias due to strategic retirement I discussed in Section 5.1, another important concern stems from potentially unobserved differences between incumbents that might be correlated with corruption and may be differently valued by high and low-awareness constituencies. In other words, differences between low-awareness and high-awareness voters presented above may be explained not by differences in political awareness but because constituencies with different levels of political awareness face incumbents engaged in different types of corruption due to incumbent characteristics omitted from the empirical model. This concern can be addressed with the inclusion of candidate fixed effects. While this naturally changes the estimation sample to districts or states with repeated observations under the same candidate, the results are substantively unchanged.²¹

Another way to address this concern is to conduct a placebo test by comparing the behavior of high-awareness and low-awareness voters in an election before the charge of corruption. If political awareness rather than some other unobserved characteristic conditions the effect of corruption, we should not observe systematic differences between voters with different levels of political awareness in the absence of corruption. This is indeed what I find.

Even after including various fixed effects, there is still a danger of omitted variable bias. However, applying the approach of Altonji, Elder, and Taber (2005) for quantifying the sensitivity of estimates to this type of bias, I find that the omitted variable bias would have to be 2.6 and 2.9 times as large as the effect of included observable confounders for the House and the Senate, respectively, to explain away the entire composite effect of corruption and political awareness on incumbent support. Since the common predictors of incumbent support are already included, this magnitude of omitted variable bias seems unlikely.

²¹Moreover, results are unchanged when the district or state-level predictors are replaced with district or state fixed effects, which should help absorb unmeasured time-invariant constituency characteristics.

Second, the dependent variable in the study – individual self-reported vote for the incumbent – is potentially problematic because voting for the election winner is over-reported (Wright, 1993), and incumbents are overwhelmingly the winners. The results are qualitatively very similar if two alternative dependent variables are used: the incumbent feeling thermometer score, and a measure of incumbent approval.

Third, the seriousness of the corrupt act varies considerably from one corruption case to the next. However, the results are not driven by any one scandal, as the findings are substantively unchanged when the model is re-estimated by dropping one scandal at a time. Also, I get even slightly stronger results when I re-estimate the model using the sample of scandals used by Hirano and Snyder (2012) in a recent related paper.

Finally, the estimates can still be biased if the model in equation 1 fits the data poorly. One potential problem is if the districts/states with a corrupt incumbent and those without have very different observable characteristics. To alleviate such concerns, I perform propensity score matching as a form of preprocessing the data (Ho et al., 2007). To avoid matching on post-treatment variables in cross-sectional data, I again use the panel surveys and respondents’ characteristics in the first wave as the baseline (Sekhon, n.d.). The results are qualitatively unchanged. Another potential issue is that the data are essentially composed of multiple levels: individuals are nested within districts, which are further nested within states. The results are qualitatively similar when a random-intercept multi-level probit model is fit instead of the simple probit model from equation 1.

8 Conclusion

The results presented in this paper offer evidence of the importance of voters’ political awareness for electoral accountability. Corrupt incumbents in the U.S. Congress are able to maintain public support partly because voters are ignorant of their misdeeds. Previous

studies have shown that corrupt incumbents can maintain support when institutions force trade-offs between corruption and some other important dimension of vote choice, or when they make it harder for voters to clearly ascribe responsibility to the incumbent. But while institutions affect the ability of voters to monitor politicians, the results presented here suggest that improving the incentives of voters and their motivation to engage in monitoring are also important. Democratic elections cannot fulfill their promise of accountability if the electorate is insufficiently aware of politician's performance. Since corruption typically represents a waste of public resources, less attentive electorates suffer a real cost from improper oversight. My results suggest that steps to improve voters' political awareness, such as civic education, public broadcasting, or get-out-the-vote campaigns may also facilitate electoral accountability in the context of corruption.

It is important to note that this study captures only the direct – and partial – effect of political awareness on voter behavior, in isolation from its effect on the behavior of incumbents themselves, the challengers, the media, interest groups, etc. Analyzing potential selection bias in Section 5.1, I have discussed one indirect effect of political awareness, through its impact on incumbents' strategic retirement and decisions to engage in corruption in the first place. I have shown that high political awareness in the electorate likely causes higher rates of retirement among corrupt incumbents, or potentially leads incumbents prone to corruption to avoid engaging in it if facing a more highly informed electorate. While these selection effects likely induce attenuation of the empirical results presented here, they represents another accountability effect of political awareness. Other scholars have shown yet other effects of political awareness on political accountability. Gordon, Huber, and Landa (2007), for example, demonstrate that the failure of voters to acquire information about candidates may deter high-quality challengers from contesting elections, whereas information acquisition may help deter low-quality challengers from entering. In this sense, low awareness at least doubly advantages incumbents.

The results presented here raise several questions potentially worth exploring in the future. Most directly, it may be useful to examine how important political awareness has been for the meagre punishment of corrupt politicians shown in studies conducted in other countries cited above, such as Japan, Spain and France. Moreover, while I have presented evidence suggesting that political awareness is correlated with knowledge and understanding of corruption, future work could examine further whether low-awareness voters are more likely to support corrupt incumbents because they are unaware of corruption, or they vote differently than high-awareness voters even conditional on knowing about and understanding the consequences of corruption.

Further, the aggregate-level effects shown in the paper simulate the effect on support for corrupt incumbents of a general increase in political awareness. These simulations assume that conditional on the variables included in the model, there is no systematic relationship between how a voter would respond to information and whether or not that voter decides to become informed. While I have shown in Section A1 that this may be plausible in this study, future work could focus on designs or experimental manipulations that raise the awareness of a larger set of voters in a way that allows to measure aggregate effects more precisely. Answering these questions would allow us to better understand which policies aimed at raising political awareness may be most beneficial for increasing the potential for greater democratic accountability.

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