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Cebula, Richard and Tullock, Gordon

Jacksonville University, George Mason University

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An extension of the rational voter model

by

Richard J. Cebula, Jacksonville University

and

Gordon Tullock, George Mason University

Abstract

This extension of the rational voter model differs from prior studies in three ways: its adoption of aggregate voting data; its use of data that are non-demographic in nature; and its use of data that are time series rather than cross section. The study finds that the aggregate voter participation rate is higher when the public strongly approves of the President's job performance. Aggregate voter turnout also is increased by the opportunity to participate in a Presidential election. It also appears that a highly unpopular or controversial war increases voter turnout. By contrast, it also is found that voter turnout decreases in the face of a scandal involving the President. Finally, the greater the per capita real disposable income of the American public, the lower the aggregate voter participation rate, presumably due to opportunity cost considerations.

Introduction

Many economists, political scientists, policymakers, journalists, and others have long been intrigued by and have long been attempting to resolve the problems that are encountered, within a democratic process and system, in inducing voters to reveal their true preferences for public and quasi-public goods and services. Explaining the so-called "paradox of voting" has occupied the minds and efforts of numerous scholars. Participating in the election of public officials (voting) and expressing preferences (voting) for a variety of referenda on a wide range of issues is a fundamental component of the determination of the magnitude and form of government

outlay (and tax) decisions and hence plays a significant role in efficient societal resource allocation. The perception that the voter participation rate in the U.S. is not only low relative to the other industrialized democratic nations but also has even been in a state of modest decline, albeit erratically so, during the last several decades therefore is an issue of increasing concern.

Since Downs (1957) first introduced the theory of the “rational voter,” there have followed numerous and varied theoretical extensions and empirical studies to enhance, test, and better understand the theory or variants thereof in a variety of both “real world” and “experimental” contexts [e.g., Tullock (1967), Buchanan (1968), Riker and Ordeshook (1968), Brazel and Silberberg (1973), Ashenfelter and Kelly (1975), Wolfinger and Rosenstone (1980), Kafoglis and Cebula (1981), Cebula and Kafoglis (1983), Ledyard (1984), Aldrich and Simon (1986), Morton (1987), Piven and Cloward (1988), Cox and Munger (1989), Morton (1991), Teixeira (1992), Aldrich (1993), Green and Shapiro (1994), Green and Shapiro (1994), Verba, Schlozman, and Brady (1995), Leighly (1996), Lapp (1999), Greene and Nikolaw (1999), Knack (1999), Matsusaka and Palda (1999), Putnam (2000), Cebula (2001), Copeland and LaBand (2002), Mueller (2003), Barreto, Segura and Woods (2004), Cebula (2004), Borgers (2004), and Feddersen (2004)].

The complexity of voting behavior is perhaps best exemplified in the work by Buchanan and Tullock (1962), which itself has been the subject of extensive attention and examination. Moreover, the possibility of voting in alternative ways, such as “voting with one’s feet,” is exemplified by the work of Tiebout (1956) and Tullock (1971), among others. The hypothesis of “voting by tax evasion” has been introduced by Cebula (2003), whereas Copeland and LaBand (2002), Cebula (2004), and in a limited sense, Barreto, Segura, and Woods (2004), have empirically investigated a theory of “expressive voting.” To some extent, Cebula (2003) and

Copeland and Laband (2002), respectively, reflect efforts to identify non-traditional ways in which to vote vicariously and/or to introduce non-traditional or non-demographic variables that may explain voting behavior. Interestingly, the study by Copeland and Laband (2002) may do more to identify the characteristics of people most likely to vote than it does to explain why eligible voters decide whether to vote or not vote per se.

As a rough generalization, voting is high, frequently 95 percent or more, when elections are first introduced. On the whole, it tends to fall off as people become more and more accustomed and perhaps bored by the election process. There are exceptions in this rule, Norway for example. Nonvoters pay a small fine in Australia, which may lead to a lower level of information for the average voter. Some uninterested voters vote only to avoid the fine. Some uninterested voters may be confused by the use of the Hare method of proportional representation,

Concern regarding low as well as declining voter participation rates in the U.S. is expressed frequently in the media and elsewhere. As observed by Putnam (2000, p. 31), ‘With the singular exception of voting, American rates of political participation compare favorably with those in other democracies...’ Putnam (2000, p. 31) observes that ‘We are reminded each election year that fewer voters show up at the polls in America than in most other democracies...’ Putnam (2000, p. 32) proceeds to observe that ‘Turnout has declined despite the fact that the most commonly cited barrier to voting [“burdensome registration requirements”] has been substantially lowered.’

Because election outcomes can have very profound implications for societal and government resource allocations, the underlying free-rider problem in voting may carry a huge price tag. The size of government outlays generally and the specific directions in which public

expenditures are directed influence the well being of the society as a whole, both in the short run and the long run. So, “What determines voter participation, or the lack of it, in the U.S.?” And. “Why are voter participation rates in the U.S. declining?” Once there is a better understanding of the answers to these questions, perhaps there will also be a better answer (or better answers) to the question “How can the U.S. voter participation rate be increased?” There are people, of course, who do not think that increasing the number of voters is a desirable objective. After all the nonvoters are less likely to be deeply interested and well-informed about the voting issues.

Accordingly, the purpose of the present study is to investigate empirically the determinants of the aggregate voter participation rate in the U.S. in a framework that is broader and hopefully more useful than previous empirical analyses of voter turnout and the rational voter framework. The focus in this study is on the perspective that the decision as to whether or not to vote may involve ‘Rational, self-interested individuals [who]...engage in behavior that is not motivated directly [or solely] by a [simple] benefit-cost calculation...’ [Copeland and Laband (2002, p. 351)] as to whether their individual votes will “count,” i.e., make a difference in the (an) election outcome. For example, it is argued here that a factor such as strong public approval of the incumbent President per se may increase voter turnout. Indeed, it is argued in this study that this factor, along with such other factors as enthusiasm over the Presidential nomination and election process, the Vietnam War (or perhaps in principle any protracted, unpopular or controversial war), and the public’s disillusionment with the election/voting process as a consequence of the Watergate scandal, along with the public’s own economic well being (prosperity) may combine to significantly affect voter turnout and hence the election of public officials whose decisions largely determine the allocation of public funds to the myriad forms of public outlay options that exist. Expressed somewhat differently, this study seeks to empirically

investigate the determinants of aggregate voter participation rates over time in a fashion that includes macro-level, time-series variables that can potentially be viewed as eliciting “expressive voting/non-voting” or “emotional voting/non-voting” by eligible voters as a whole.

The framework

Typically, studies of the rational voter model for the U.S. have employed cross-section data to determine the predictive capacity of various demographic and election-specific factors on voter participation. Unfortunately, most of these studies have failed to produce robust empirical support for the hypothesis. One of the arguably more comprehensive of these studies, that by Matsusaka and Palda (1999), adopts nearly 40 variables in a cross-section analysis of voting behavior in an effort to quantify the extent to which voter turnout can be explained. However, despite the large number of right-hand-side variables considered, this study collectively explains only about 15 percent of voter turnout. Matsusaka and Palda (1999, p. 442) conclude that ‘...most of the inability to predict who votes appears to come from non-stationary factors.’ Matsusaka and Palda (1999) proceed to suggest two possible paths for future research. The first is to search for non-demographic variables. This suggestion is echoed and pursued in the more recent study using LOGIT techniques on micro cross-section data for even numbered years from 1986-1996 by Copeland and Laband (2002). The second suggestion is to adopt aggregated voting data, which might allow the estimations of models with greater explanatory power, as in Cebula (2001). Finally, in a related study, Greene and Nickolaw (1999, p. 224) argue that ‘cross-section results...do not control for time,’ suggesting then that the use of time series may be a more fruitful avenue to pursue in order to explain voter turnout behavior. It should be observed that all three of these suggestions are adopted in the present study.

Paralleling the rational voter model, it is hypothesized in the present study that the probability that a given eligible voter will actually vote, $PROBV$, is an increasing function of the expected gross benefits (EGB) associated with voting, ceteris paribus, and a decreasing function of the expected gross costs (EGC) associated with voting, ceteris paribus. Thus, it follows that:¹

$$PROBV = f(EGB, EGC), f_{EGB} > 0, f_{EGC} < 0; f_{(EGB-EGC)} > 0 \quad (1)$$

In interpreting EGB and EGC, this study argues that these concepts require a very broad, encompassing interpretation. For instance, in most major elections, the marginal probability that one vote will make the (a) difference is approximately zero. Nevertheless, certain circumstances or factors can potentially increase the expected benefits from voting. For example, when there is an issue (be it economic or non-economic in nature) that an eligible voter feels particularly strongly about, voting may provide subjective benefits to the would-be voter because it has served as an emotional release or outlet. That release may consist of expressing either approval or disapproval regarding the particular issue in question. From a different perspective, in some cases citizens who vote may take great personal pride in doing so and thusly derive subjective benefits because they feel they have fulfilled an important “civic duty.” Alternatively, certain circumstances can potentially reduce the expected benefits from voting. For instance, if a circumstance makes one feel disenfranchised from the government (and/or the election process), e.g., if a would-be eligible voter feels that his/her elected officials may (are likely to) betray them, the would-be voter is discouraged and shies away from “wasting” his/her time and effort bothering to vote. Naturally, there also are factors that can influence the expected costs of voting, broadly interpreted as including opportunity costs. Accordingly, this study proceeds with the notion that the decision to vote or not to vote can be impacted profoundly by a host of varying, often subjective, but nonetheless powerful circumstances. This study claims to have in fact

identified a number of these factors and to have thusly extended the rational voter context so that it more satisfactorily and more extensively explains the actual aggregate voter participation rate.

The analysis commences with a question/hypothesis that has never been empirically tested in the literature prior to this study. In particular, “Does the voter participation rate increase when voters strongly approve of the perceived job performance of the incumbent President?” To begin, it is observed that the public’s approval rating of the U.S. President (PRESAPP) has for decades been measured scientifically, adopting sound intertemporally comparable polling methodologies. The present study considers the time period 1960-2000. Over this 41 year period, the mean public approval rating of the sitting President was 48.13 out of a possible 100.0, with a standard deviation of 8.78. It is hypothesized here that the public has a greater incentive to vote, particularly during Presidential election years, when eligible voters are especially pleased with (i.e., strongly approve of) the incumbent President’s job performance. In other words, voting allows the voters to express their positive feelings towards the President; therefore, voting provides voters the opportunity to derive subjective satisfaction (benefits) from expressing feelings. Accordingly, it is hypothesized here that the greater the public approval rating of the incumbent President/Administration, the greater the voter participation rate, ceteris paribus.

It is also hypothesized that Presidential elections offer an opportunity for individual eligible voters to vote for a potentially very powerful and important policymaker (the President of the U.S.) in conjunction with voting for numerous other candidates for public office, not to mention a variety of referenda. Thus, during Presidential election years (PRESUM), a given trip to the ballot box provides this additional potentially very important opportunity (voting for the Presidency) at approximately zero marginal cost and hence provides an added incentive to vote. Reasonably, the prospect of voting in such an important election also tends to invoke a high

degree of emotional enthusiasm typically missing in most other election years [Copeland and Laband (2002)]. Such enthusiasm can be generated /fueled by a variety of circumstances, including such considerations as the following: the large number of and diverse character of the Presidential primaries and the drama attendant thereto; the national party nominating conventions, complete with speculation over prospective Vice Presidential running mates; the issuance and distribution of bumper stickers, buttons, hats/caps, signs, shirts, sweatshirts and other clothing apparel exhibiting campaign slogans; controversial issues that arise during Presidential primaries, election campaigns and party platform formulation [e.g., “right-to-life” proponents versus those advocating “choice” and abortion rights, environmental issues (including candidates’ records and positions), term limitations for the U.S. House of Representatives and the U.S. Senate, campaign finance reform, terrorism, Middle East issues, civil rights, affirmative action, healthcare issues, public subsidies to religious organizations and religious providers of education, same-sex marriage, tax burdens, tax reform, tax equity, corporate accounting fraud, corporate accountability, negative campaigning and character assassination of opposing candidates]; and issues stressed by the media, including the application thereto of a variety of poll results, some of which are legitimate in their use of generally accepted polling techniques and many others that certainly do not adopt generally accepted polling techniques (such as those based on simple internet voting on issues being covered by the media),² released to the public through the various media en masse on a regular basis. Consequently, it is argued in this study that the voter participation rate is increased by the broad assortment of quantifiable and emotional issues generally associated with Presidential candidate posturing, campaigning, polling, nominating, and voting for one candidate or another during the

Presidential election years, ceteris paribus. Moreover, at such times, the psychological rewards/benefits from fulfilling one's "civic duty" may well be especially pronounced.

The U.S. military involvement in the Vietnam War, which escalated sharply in 1965, clearly can be regarded as having generated intense emotional responses among the U.S. electorate. The controversy over the Vietnam War was in part reflected in numerous anti-war demonstrations, riots in a wide variety of venues, disruptions of national political party conventions where Presidential and Vice Presidential candidates were being nominated, virulent and almost constant "hawk" versus "dove" debates, and daily media coverage (along with numerous magazine articles and a number of controversial books) dealing with POWs, MIAs, the number of casualties and wounded, and the general chaos and "carnage" that came to characterize if not symbolize the Vietnam War. Arguably, the Vietnam War created intense emotional responses, including an intensified effort to disengage from the Vietnam War by electing "new" candidates to key political offices. Indeed, the Nixon election victory over President Johnson in 1968 might even (although complicated by George Wallace's candidacy) be interpreted in part as an emotional expression for change. It is hypothesized here that the Vietnam War (VIETNAM) elicited increased public interest levels and emotional reactions that raised voter interest and participation since the said participation provided the benefit of expressing one's feelings on this major issue.

The Watergate scandal (WATERGATE), which surfaced in 1972, resulted ultimately in the impeachment of President Nixon in 1974 and in his subsequent resignation in August, 1974. Arguably, the idea that a President of the U.S. could have been culpable of effectively attempting to control the choice of Presidential nominee of the opposing party and to interfere with and indeed corrupt the process by which the U.S. President was to be elected, undoubtedly for many

Americans represented a form of betrayal. The election process came under question, i.e., for at least some of the electorate the value of voting came into doubt. Clearly, the effects of the events surrounding the Watergate scandal, for many Americans, meant that the expected benefits of voting were seriously diminished. Accordingly, it is hypothesized that the Watergate scandal led to a decline in the voter participation rate, ceteris paribus.

It is also hypothesized that the more prosperous the economy is, e.g., the higher is the public's real disposable income (PCRD), the greater the opportunity cost of voting. Indeed, if the public is becoming increasingly prosperous, they may not wish to take the time to vote, and instead prefer to use the time to continue "earning," i.e., enhancing their economic well being and pursuing ambitions. Alternatively, the public simply might prefer to use the time to enjoy the fruits of their increased prosperity. Accordingly, it is hypothesized that the expected cost of voting rises as the pool of eligible voters becomes increasingly prosperous, ceteris paribus.

Based on the framework outlined above, it follows that equation (1) can be rewritten as:

$$\text{PROBV} = f(\text{PRESAPP}, \text{PRESUM}, \text{VIETNAM}, \text{WATERGATE}, \text{PCRD}),$$

$$f_{\text{PRESAPP}} > 0, f_{\text{PRESUM}} > 0, f_{\text{VIETNAM}} > 0, f_{\text{WATERGATE}} < 0, f_{\text{PCRD}} < 0 \quad (1')$$

Predicated upon the model in equation (1'), the investigation of the determinants of the aggregate voter participation rate involves estimating the following regression equation:

$$\text{VPR}_t = a_0 + a_1 \text{PRESAPP}_{t-1} + a_2 \text{PRESUM}_t + a_3 \text{VIETNAM}_t$$

$$+ a_4 \text{WATERGATE}_t + a_5 \text{PCRD}_{t-1} + a_6 \text{TREND} + \varepsilon_t \quad (2)$$

where:

VPR_t = the aggregate voter participation rate in the U.S. in year t, expressed as a percent;

a_0 = constant term;

$PRESAPP_t$ = the average Presidential approval rating in year t-1, on a scale (index) of 1 to 100, such that a higher public approval is revealed by a higher index number;

$PRESDUM_t$ = a binary variable for Presidential election years: $PRESDUM_t = 1$ during Presidential election years and $PRESDUM_t = 0$ otherwise;

$VIETNAM_t$ = a binary variable for the years during which the U.S. was militarily involved in the Vietnam War, such that $VIETNAM_t = 1$ for those years and $VIETNAM_t = 0$ otherwise;

$WATERGATE_t$ = a binary variable for the years following the public disclosure of the Watergate break-in and ensuing scandal, such that $WATERGATE_t = 1$ during those years and $WATERGATE_t = 0$ otherwise;

$PCREDI_{t-1}$ = per capita real disposable income in year t-1, expressed in 1996 dollars;

TREND = a linear trend variable;

ε_t = stochastic error term.

The study period runs from 1960 through 2000. VPR_t is measured only for even-numbered years. This is because even-numbered years are when all members of the U.S. House of Representatives and one-third of the U.S. Senate are elected and, on alternate even-numbered years when the President is also elected. In most venues, the odd-numbered years typically do not correspond to the election of large numbers of “significant” officials. The VPR_t data were obtained from:

<http://www.infoplease.com>

The data for variable $PCREDI_{t-1}$ were obtained from the Council of Economic Advisors (2003, Table B-31). The data for the Presidential approval rating were obtained from:

<http://www.geocities.com/americanpresidencynet/approval.htm>

The Augmented Dickey-Fuller and Philips-Perron tests both confirm that the series for variable $PCRDI_{t-1}$ is stationary only in first differences. Hence, in the estimations provided below, the variable $PCRDI_{t-1}$ is expressed in first differences. The series for the variable $PRESAPP_{t-1}$ was found to be stationary in levels. Finally, the VPR_t series was found to be stationary in levels with a trend variable; consequently, a linear trend variable (TREND) is included in the model estimations.

Empirical findings

Estimating equation (2) by ordinary least squares (OLS), using the White (1980) heteroskedasticity correction, yields the following:

$$\begin{aligned}
 VPR_t = & +44.92 + 0.054 PRESAPP_{t-1} + 13.79 PRESUM_t + 1.67 VIETNAM_t \\
 & \quad (+2.37) \quad \quad \quad (+27.29) \quad \quad \quad (+4.29) \\
 & - 6.17 WATERGATE_t - 0.002 \Delta PCRDI_{t-1} - 0.158 TREND \\
 & \quad (-9.19) \quad \quad \quad (-3.13) \quad \quad \quad (-2.76) \\
 DW = & 1.93, Rho = -0.05, F = 140.93, R^2 = 0.985, adjR^2 = 0.978 \quad (3)
 \end{aligned}$$

where terms in parentheses are t-values and Δ is the first differences operator. In equation (3), all the six of the estimated coefficients exhibit the expected signs, with four statistically significant at the one percent level and a further two statistically significant at beyond the five percent level. The coefficient of determination (R^2 or adjusted R^2) indicates that the model explains effectively 98 percent of the variation in the dependent variable, which far exceeds the explanatory power of any other published study to date. Finally, the F-ratio is statistically significant at far beyond the one percent level.

The estimated coefficient in equation (3) on the $PRESAPP$ variable is positive and significant at the three percent level. This finding suggests, as hypothesized earlier in this study,

that when the public strongly approves of the job performance of the incumbent President, they turn out in greater numbers than otherwise would be the case in order to express that strong approval. Voting becomes a vehicle for expressing positive feelings toward the President and his job performance; conversely of course, when the President's approval rating is low, lower voter turnout is observed.

The estimated coefficient in equation (3) on the PRESUM variable is positive and statistically significant at the one percent level. This evidence confirms the hypothesis proffered above that voter participation rates increase during Presidential election years, when the outcome of the election is perceived as more important, so that the potential benefits from voting are greater while presumably reflecting emotions ranging from simple enthusiasm, perhaps almost reminiscent of "cheerleading" [Copeland and Laband (2002), Cebula (2004), Barreto, Segura, and Woods (2004)] to stronger emotional responses to the candidates themselves, the party platforms and/or the candidates' positions on sensitive issues such as abortion, the environment, affirmative action, terrorism, same-sex marriage and the Middle East.

The coefficient on the VIETNAM variable is positive, as expected, and significant at the one percent level. This finding may be interpreted as suggesting a strong emotional pull by the "war" issue of voters to the polling booths, perhaps in the hope of creating a change in U.S. policy regarding military involvement in Vietnam. The documented unpopularity of the Vietnam War, along with intense controversy over the War, appears to have led to increasing voter participation. The lesson from these findings may be that protracted "unpopular" wars are likely to induce increased voter participation and, arguably, voting patterns that are of a nature that is likely to be, on balance, at least somewhat anti-incumbent. Clearly, the absence of a protracted unpopular and/or controversial war may then reduce the voter participation rate.

The coefficient on the variable WATERGATE is negative, as expected, and significant at the one percent level, suggesting that the Watergate scandal acted to discourage voter participation. Presumably, the role of President Nixon in the Watergate scandal, especially given the alleged objective of affecting a Presidential election outcome, reduced the expected benefits from voting. Arguably, the Watergate scandal created a degree of cynicism among many U.S. voters and quashed their interest in the electoral process.

The coefficient on the PCARDI variable in equation (3) is negative and significant at the one percent level. This result suggests strongly that the higher the per capita disposable real income among the U.S. electorate, the greater the opportunity cost (expected gross costs) of voting. Consequently, the voter participation rate is reduced by this prosperity. Ironically, that very same prosperity is likely placed in greater long run jeopardy when eligible voters decide against exercising their right to vote in a democratic society.

To demonstrate the robustness of the framework presented in this study as well as the robustness of the empirical results provided in equation (3), a second estimate of the basic model, one that drops the least statistically significant variable in that estimate (PRESAPP) from the system, is provided in equation (4). The OLS estimation in equation (4), as was the case in the previous estimate, adopts the White (1980) correction for heteroskedasticity. The results are, as follows:

$$\begin{aligned}
 VPR_t = & +48.67 + 14.28 \text{ PRESUM}_t + 1.304 \text{ VIETNAM}_t - 6.83 \text{ WATERGATE}_t \\
 & \quad (+30.38) \quad \quad \quad (+2.47) \quad \quad \quad (-9.98) \\
 & - 0.002 \Delta \text{PCARDI}_{t-1} - 0.196 \text{ TREND} \\
 & \quad (-3.08) \quad \quad \quad (-2.91) \\
 & \text{DW} = 1.89, \text{ Rho} = 0.01, \text{ F} = 180.99, \text{ R}^2 = 0.984, \text{ adjR}^2 = 0.978, \text{ F} = 180.99 \quad (4)
 \end{aligned}$$

All of the estimated coefficients in equation (4) have the expected signs and are statistically significant at the 2.5 percent level or beyond. Thus, the results shown in equation (4) are entirely compatible with those in equation (3) above, adding further both to the credibility of the empirical results found in that equation and to the viability of the expanded rational voter model presented in this study.

Conclusion

This study has endeavored to broaden the rational voter model context so as to improve understanding of voter participation rate determinants in the U.S. and, implicitly, so as to improve forecasting of and promote higher levels of voter participation. Alternatively stated, perhaps the insights into voting decision determinants provided in this study will help to enhance the ability to increase the aggregate voter participation rate.

In any case, using aggregate time series covering the period 1960-2000, this study has obtained several significant results. First, the voter participation rate tends to be higher, by roughly 2.4 percentage points [according to estimation (3)], when the public strongly approves of the job performance of the incumbent President. This finding is unique in this literature. Second, the opportunity to vote for the office of President, i.e., in a Presidential election year, acts to elevate the voter participation rate, perhaps by as many as 13-14 points. In principle, this finding comes as no surprise [e.g., Copeland and Laband (2002)], although the magnitude of the effect is quite impressive. Third, the Watergate scandal discouraged the electorate sufficiently to reduce the voter participation rate, perhaps by as many as six to seven percentage points. This is a very significant finding, especially given the gradually declining voter participation rate since 1960. Fourth, the Vietnam War had a positive and statistically significant impact on voter participation, apparently between one and two percentage points. This issue may to some extent have

galvanized an otherwise somewhat free-riding, somewhat apathetic public into a voter coalition with a somewhat greater propensity to vote in order to promote a specific agenda. This finding may be capable of being generalized into a rule of thumb by which it is possible to conjecture that any unpopular war, particularly a protracted one, might well act to elicit a greater voter turnout and perhaps even result in the election of a new Administration. Finally, the greater the per capita real disposable income of the U.S. electorate, the lower the aggregate voter participation rate, ceteris paribus, arguably because the opportunity cost to voting (in the short run) is rising. Apparently, the very prosperity that has evolved in this democratic system may endanger its long run future as the free rider problem proceeds unabated.

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Note

¹ Some students point out that the likelihood of influencing the outcome of an election is less than the likelihood of being killed in an auto accident on the way to the voting booth [cf. Cebula 2001)].

² Such "polls" involve neither random sampling nor representative samples; rather, "voters" (who indeed may not even be eligible to vote in a "voting booth") express their views, perhaps voting multiple times when expressing strong views. The demographic composition of the voter pool is unknown, and the number of votes cast per voter is unknown. Furthermore, many voters are unable to participate due to lack of access to the internet or lack of such access at the time of live airing of the television program.