Teaching in Public Choice Courses How Direct Democracy Can Influence Voting Behavior

Richard J. Cebula and Luther D. Lawson

Abstract

This study seeks to expand the scope of that portion of Public Choice courses that involves voting behavior. The study broadens the interpretation of the “rational voter model” so as to include the potential effects of “direct democracy” on the voter participation rate. Direct democracy is assumed here to take three forms: statewide initiatives, statewide popular referenda, and statewide legislative referenda. This study presents the hypothesis that greater numbers of such initiatives and/or referenda may increase voter turnout because they may elevate the expected gross (and hence net) benefits of voting by empowering voters, despite any accompanying information costs that may tend to elevate the expected gross costs of voting. The empirical evidence to address the net overall effect of these forms of direct democracy on voter turnout is provided.

Introduction

As stressed in every course in Public Choice, the act of voting is, among other things, a fundamental component of the process of determining the magnitude and form of government outlays and taxation policies, approving or disapproving constitutional amendments and various forms of legislation, and influencing certain regulatory and other decisions, and hence plays a significant role in societal resource allocation and income distribution. As Putnam (2000, p. 35) states, “Voting is by a substantial margin the most common form of political activity, and it embodies the most fundamental democratic principle of equality…Moreover, like the canary in the mining pit, voting is an instructive proxy measure of broader social change.” Indeed, Putnam (2000, p. 35) informs us that “…recent evidence suggests that the act of voting itself encourages volunteering and other forms of good citizenship.”

Concern over low voter participation rates for the U.S. is expressed frequently in the media and elsewhere. In the words of 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) further observes that “We are reminded each election year that fewer voters show up at the polls in America than in most other democracies...”

In an effort to help provide further insight for students into the cost/benefit voting decision calculus, the objective of this study is to determine whether and how “direct democracy” might influence the voter participation rate (VPR). In this pedagogical study, direct democracy takes three forms: statewide legislative referenda, statewide popular referenda, and statewide initiatives. As stated in Waters (2003, p. xix), “For a century, the initiative and referendum process has been THE critical tool to check the power of unresponsive and unaccountable government...” in the U.S. Accordingly, given that referenda and initiatives arguably can energize the citizenry with a sense of political efficacy, the hypothesis being examined in this study is that the greater the number of statewide legislative referenda and/or the greater the number of statewide popular referenda and/or the greater the number of statewide initiatives in a state, the greater the voter participation rate (VPR), ceteris paribus. This is because such referenda and/or initiatives presumably enhance the power of voters to influence the governmental decision-making process. These forms of direct democracy can be interpreted as potentially energizing eligible voters with a sense of political power. This enhancement implies increased expected gross benefits from voting, which in turn increases the expected net benefits from voting, ceteris paribus.

1 Richard J. Cebula, Department of Economics, Armstrong Atlantic State University, Savannah, GA 31419. 912-921-3781. cebulari@mail.armstrong.edu. Luther D. Lawson, Department of Economics and Finance, University of North Carolina Wilmington, Wilmington, NC 28409. 910-962-3524. lawson@uncw.edu.
On the other hand, in order to be informed voters in terms of legislative referenda, popular referenda, and popular initiatives, it is necessary to obtain information about each of these direct democracy forms and to understand that information to some degree. This effort requires time and effort. Clearly, students must be made aware that being a well-informed voter with respect to initiatives, popular referenda, and legislative referenda theoretically may increase the gross costs of voting. As indicated below, however, there is compelling evidence from the studies by Matsusaka (2005), Lupia (1994), and Bowler and Donovan (1998) that such costs can be regarded as minimal.

The model, which is provided in next section of the study, is a cost-benefit framework that parallels the rational voter model. The subsequent section of the study provides the empirical analysis, which consists of a cross-section analysis of the 50 states in the 2004 Presidential election. The final section of the study provides a summary and overview.

The Framework

Paralleling in principle the rational voter model, it is hypothesized that the probability that a given eligible voter will actually vote, PROBV, is directly related to the expected gross benefits (EGB) associated with voting, \( ceteris paribus \), and inversely related to the expected gross costs (EGC) associated with voting, \( ceteris paribus \). Thus, it follows that:

\[
PROBV = f(EGB, EGC), f_{EGB} > 0, f_{EGC} < 0; f_{(EGB-EGC)} > 0 \quad \text{Equation 1}
\]

The central hypothesis being examined in this study addresses whether on balance, by increasing the power of voters, the number of statewide legislative referenda (LEGREF), and/or the number of statewide popular referenda (POPREF), and/or the number of statewide initiatives (INIT) increase EGB and (EGB-EGC) and hence, in the aggregate, increase the voter participation rate (VPR), \( ceteris paribus \). Some 24 states have the initiative process. The popular referendum is also available in 24 states. As Matsusaka (2005, p. 187) notes, these two sets of 24 states are very similar but are not identical. Finally, the legislative referendum is available in all 50 states.

As Matsusaka (2005, p. 187) observes, “A [popular] referendum…is a vote on a law already approved by the legislature…qualified for the ballot by collecting a predetermined number of signatures.” However, a legislative referendum can be “…placed on the ballot directly by the legislature…” Perhaps more generally stated, a legislative referendum “…is when the state legislature, an elected official, state appointed constitutional revision commission or other government agency or department submits propositions (constitutional amendments, statutes, bond issues, etc.) to the people for their approval or rejection” [Initiative & Referendum Institute (2004, p. 1)]. According to Matsusaka (2005, p. 187), the legislative referendum could be a non-binding resolution to secure a sense of public opinion and thus be advisory in nature “…or the [state] constitution may require popular [voter] approval before a law can go into effect…” It is argued in this study that statewide legislative referenda presumably increase the power of voters in a state by empowering them to make such decisions. Arguably, statewide popular referenda could also be expected to energize voters with a sense of political influence. Next, Matsusaka (2005, p. 187) generically defines an initiative “…as a new law proposed by ordinary citizens that is qualified for the ballot by collecting a predetermined number of signatures from eligible voters.” Matsusaka (2005, p. 187) observes that “Initiatives and referendums [popular] let ordinary citizens take control of the agenda, and they are the form of direct democracy that grabs the headlines.” Accordingly, it is argued in this study that statewide initiatives empower voters by enabling them to some degree to establish agendas for elected representative officials to follow, as suggested in Tolbert and Smith (2005, p. 286). Thus, in theory, the greater the LEGREF and/or the greater the POPREF and/or the greater the INIT, the greater the EGB (due to an increased sense of political empowerment) and the greater (EGB-EGC), which in turn increases the VPR, \( ceteris paribus \). Alternatively expressed, direct democracy increases the VPR.

On the other hand, it can in principle be argued that when voters face initiatives and/or referenda, they are confronted with possible transactions costs of learning enough about those initiatives and/or referenda so that they can cast intelligent, informed votes in the ballot booth. In theory, this consideration would imply an increased EGC and a decreased (EGB-EGC), \( ceteris paribus \). Related to this issue, however, consider the observations by Matsusaka (2005, p. 198), who argues that “…voters do not need a detailed understanding of a measure to register
their preferences accurately in the voting booth. They may be able to cast a vote that reflects their underlying interests and values by using information cues or shortcuts, such as recommendations from trusted individuals or organizations.” Citing studies supportive of these arguments by Lupia (1994) and Bowler and Donovan (1998), Matsusaka (2005, p. 198) proceeds to state that “In fact, the evidence suggests that information cues are fairly effective in allowing voters to make reasoned choices in the voting booth.” Based on these arguments and findings, the present study accepts the position that there are minimal costs associated with direct democracy so that the expected benefits of direct democracy on balance increase the net benefits of voting. Alternatively stated, legislative referenda, popular referenda, and initiatives do not significantly raise the value of EGC.

Aside from LEGREF, POPREF, and INIT, other factors influence the voters’ EGBs and EGCs, including fundamentally economic factors. For instance, as observed in Cebula and Toma (2006, p. 35), “The female labor force participation rate (FLFPR) may… influence the expected benefits from voting.” Over time, the FLFPR has risen dramatically. Observe, for instance, that the FLFPR rose at the national level from under 40 percent in 1965 to nearly 60 percent in 2004 (Council of Economic Advisors, 2006, Table B-39). Following the arguments in Cebula and Toma (2006, p. 35), as “…the FLFPR rises, the percentage of the female population in the workplace increases and arguably these females become more/better informed on and sensitive to a variety of labor market and economic issues…this increased awareness of and sensitivity to such issues would seem likely to breed an increased interest in the potential impact that their votes might carry.” In other words, as the FLFPR increases, women in the workplace arguably may perceive a greater need (benefit) from acting on behalf of their own best interests with respect to participating in the voting process. Hence, it is hypothesized, as in Cebula and Toma (2006, p. 35), that the higher the FLFPR in a state, the greater the overall VPR in that state, ceteris paribus.

It is also expected that the more poorly a state’s economy is performing, e.g., the higher the state’s unemployment rate (UR), the greater the interest the public (eligible voters) in the state may have in the outcome of a major election. As Cebula (2005, p. 162) argues, if “…the unemployment rate…is rising, the public may wish to express their various fears and concerns about…unemployment and/or their feelings for a need for economic policy changes.” Therefore, the greater the UR in a state, the greater may be the expected benefits from voting as the public uses voting to express their feelings (Copeland and Laband 2002). Hence, it is hypothesized here that the greater the UR in a state, the greater the VPR in that state, ceteris paribus.

Demographic traits, such as age, might be expected to influence the expected benefits from voting. For instance, consider the fact expressed in the U.S. Census Bureau (2005, Table 521) that the population age 65 and older (AGE) is largely retired. In addition, a very substantial percentage (in excess of 90 percent) of this age group depends at least to a modest (and in many cases, a substantial) degree on Medicare and Social Security. Thus, this age group might be quite sensitive to such considerations as Social Security benefits, Medicare and Medicaid policies, income tax rates, and the taxability of Social Security benefits, as well as economic conditions such as inflation. These types of policy and economic conditions can significantly influence the economic status and physical health of those in this age group. Moreover, this age group may have more time than other age groups to study issues and candidates, as well as to organize among themselves in support of or in opposition to certain policies, programs, or candidates. As a result, it is expected that the greater the value of AGE in a state, the greater the VPR in that state, ceteris paribus.

Regarding another demographic factor, consider the argument in Cebula (2005, p. 162) that “…if would-be voters feel discouraged by (or if they feel politically disenfranchised from) their government because of their perceptions that government…is unresponsive to their needs…voter apathy increases because of perceived lower benefits from voting.” This perspective could very easily be expected of any minority that perceives itself as being economically disadvantaged and/or not being politically advocated on behalf of by elected officials. There are myriad ways in which these perceptions can be reinforced. The most obvious might be that of very low incomes relative to the population as a whole, but alternatives do exist, e.g., failing to have sufficient access to health insurance coverage. Indeed, Swartz (2003, p. 283) observes that most of those persons without health insurance “…have annual incomes below $35,000 [expressed in year 2000 dollars]…” In point of fact, the annual median income of Hispanics in the U.S. in 2004 was only $34,272 [U.S. Census Bureau (2006, Table 679)], some $728 below the $35,000 threshold identified by Swartz (2003). Furthermore, this figure is expressed in current dollars, so that on the surface it overstates the economic status of Hispanics in the U.S. Moreover, in addition to these possible causes of disenfranchisement feelings for Hispanics is the finding that, according to Barreto, Segura, and Woods (2004), Hispanics are significantly underrepresented in elected positions across most of the political spectrum. These
considerations lead to the hypothesis that the greater the percentage of a state’s population that is Hispanic (HISP), the lower that state’s VPR, *ceteris paribus*.

Yet another factor that may influence the expected benefits of voting is per capita personal income (PCPERSINC). As Tolbert and Smith (2005, p. 295) have argued, persons with higher incomes per capita “…are considered more likely to vote.” This is certainly not a new idea. For example, Campbell, Converse, Miller and Stokes (1960) found that persons with higher incomes (and higher educational attainment) tended to be especially aware of the potential benefits of voting and the economic stakes that were potentially at issue as a result of the voting process. Accordingly, it is hypothesized here that the higher the PCPERSINC in a state, the higher the VPR in that state, *ceteris paribus*.

Furthermore, as in Campbell, Converse, Miller, and Stokes (1960), Tolbert and Smith (2005), and Cebula and Toma (2006), it is hypothesized in this study that the higher the average level of educational attainment in a state, the higher may be the expected benefits from voting, *ceteris paribus*. Arguably, the greater the level of one’s educational attainment, the greater may be one’s knowledge of and appreciation of the significance of participating in the voting dimension of the democratic process. Furthermore, higher levels of educational attainment could well (a) engender a higher level of understanding of those issues being decided by or at least influenced through the act of voting and/or (b) result in a better informed electorate in terms of candidates’ qualifications, character, and prior voting records, and political philosophies. Indeed, higher levels of educational achievement could also act to enhance the degree to which voters derive subjective benefits from fulfilling their “civic duty” in the voting booth. Accordingly, it is hypothesized in this study that the greater the percentage of the population in a state with at least a high school diploma (HSANDMORE), the higher the VPR in the state, *ceteris paribus*.

As for the costs or expected costs of voting, consider the potential voting impact of the overall average cost of living (COST) in a state. It is argued here that the higher the overall cost of living in a state, the more challenging it is for families to “make ends meet,” *ceteris paribus*. This is because higher living costs tend to impose greater demands/pressures on family time in terms of challenging the ability to pay the family bills. Thus, COST can be potentially regarded as a reflection of the opportunity cost of voting. Stated a bit differently, the higher the level of COST in a state, the greater the sacrifice it may become to participate in voting. Moreover, a higher level of COST would likely reflect an environment with higher pecuniary transit/transportation costs *per se* for the prospective voter, thereby effectively elevating the pecuniary costs *per se* of voting. It is therefore hypothesized that, *ceteris paribus*, the higher the COST in a state, the lower the VPR in that state.

Based upon the arguments above, Equation 1 can be restated in terms of Equations 2 and 3:

\[
EGB = g(\text{LEGREF, POPREF, INIT, FLFPR, UR, AGE, HISP, PCPERSINC, HSANDMORE}),
\]

such that \( g_{\text{LEGREF}} > 0, g_{\text{POPREF}} > 0, g_{\text{INIT}} > 0, g_{\text{FLFPR}} > 0, g_{\text{UR}} > 0, g_{\text{AGE}} > 0, g_{\text{HISP}} < 0, g_{\text{PCPERSINC}} > 0, g_{\text{HSANDMORE}} > 0 \) \hspace{1cm} (Equation 2)

\[
EGC = h(\text{COST}), \quad \text{such that } h_{\text{COST}} > 0
\]

(\text{Equation 3})

Based upon (1), (2), and (3), it follows that the voter participation rate (VPR) function is given by:

\[
VPR = j(\text{LEGREF, POPREF, INIT, FLFPR, UR, AGE, HISP, PCPERSINC, HSANDMORE, COST}),
\]

where \( j_{\text{LEGREF}} > 0, j_{\text{POPREF}} > 0, j_{\text{INIT}} > 0, j_{\text{FLFPR}} > 0, j_{\text{UR}} > 0, j_{\text{AGE}} > 0, j_{\text{HISP}} < 0, j_{\text{PCPERSINC}} > 0, j_{\text{HSANDMORE}} > 0, j_{\text{COST}} < 0 \) \hspace{1cm} (Equation 4)

**Ordinary Least Squares Analysis**

Following the model summarized in (4), the following reduced-form equation is to be estimated:

\[
\text{VPR}_k = a_0 + a_1 \text{LEGREF}_k + a_2 \text{POPREF}_k + a_3 \text{INIT}_k + a_4 \text{HISP}_k + a_5 \text{UR}_k + a_6 \text{FLFPR}_k + a_7 \text{AGE}_k + a_8 \text{PCPERSINC}_k + a_9 \text{HSANDMORE}_k + a_{10} \text{COST}_k + u
\]

(\text{Equation 5})
where:

\( VPR_k \) = the voter participation rate in state \( k \) in the 2004 Presidential election, expressed as a percent of eligible voters in the state [as in, e.g., Tolbert and Smith (2005), Cebula and Toma (2006), Cebula and Tullock (2006)];

\( a_0 \) = constant term;

\( \text{LEGREF}_k \) = the total number of statewide legislative referenda on the ballot in state \( k \) in year 2002;

\( \text{POPREF}_k \) = the total number of statewide popular referenda on the ballot in state \( k \) in year 2002;

\( \text{INIT}_k \) = the total number of statewide initiatives on the ballot in state \( k \) in year 2002;

\( \text{HISP}_k \) = the percentage of the population in state \( k \) that was classified as Hispanic in the year 2002;

\( \text{UR}_k \) = the average percentage unemployment rate of the civilian labor force in state \( k \) in the year 2003;

\( \text{FLFPR}_k \) = the female labor force participation rate in state \( k \) in the year 2002, expressed as a percent;

\( \text{AGE}_k \) = the percent of state \( k \)'s population in year 2003 that was age 65 or older;

\( \text{PCPERSINC}_k \) = per capita personal income in state \( k \) in current dollars in the year 2003;

\( \text{HSANDMORE}_k \) = the percentage of the adult population in state \( k \) age 25 years and older with at least a high school diploma, 2003;

\( \text{COST}_k \) = an index of the average cost of living for a four-person family residing in state \( k \), 2003;

\( u \) = stochastic error term.

The analysis deals with the 2004 Presidential election, the most recent Presidential (i.e., “major”) election experience to date. To measure “direct democracy,” three variables are adopted, \( \text{LEGREF}_k \), \( \text{POPREF}_k \), and \( \text{INIT}_k \). The data source for these direct democracy measures is the Initiative & Referendum Institute (2004, pp. 9-10). The statewide referendum and initiative data were obtained from the year 2002 general election since 2002 was the last major (albeit non-Presidential) election year prior to the 2004 Presidential election; as with most odd-year elections, very few statewide ballot measures appeared on the ballot in 2003. All of the right-hand-side variables are lagged so as to avoid simultaneity bias and in such a fashion as to minimize the incidence of multicollinearity. The data source for the voter participation rate (voter turnout rate) variable as defined is the U.S. Census Bureau, (2006): http://www.uselectionatlas.org/USPRESIDENT/vto.php?year=2004&datatype=national. The data for the other variables were obtained from the U.S. Census Bureau (2003, Tables 22, 592; 2005, Tables 574, 18, 20, 216; 2006, Tables 27, 662) and ACCRA (2003).

Estimating equation (5) by OLS, adopting the White (1980) heteroskedasticity correction, yields:

\[
\begin{align*}
VPR_k = & -75.4 + 0.467 \text{LEGREF}_k - 0.61 \text{POPREF}_k - 0.04 \text{INIT}_k - 0.28 \text{HISP}_k + 3.67 \text{UR}_k \\
& + 1.035 \text{FLFPR}_k + 1.299 \text{AGE}_k + 0.00046 \text{PCPERSINC}_k + 0.599 \text{HSANDMORE}_k \\
& - 0.305 \text{COST}_k, \quad R^2 = 0.79, \quad \text{adj } R^2 = 0.74, \quad F = 14.86 \\
\end{align*}
\]

Equation 6

where terms in parentheses are t-values.

In Equation 6, the estimated coefficients on eight of the ten explanatory variables exhibit the expected signs, with six being statistically significant at beyond the one percent level and two being statistically significant at beyond the five percent level. Among these results, the estimated coefficient on one of the measures of direct democracy, \( \text{LEGREF}_k \), is significant at the four percent level with the hypothesized positive sign; however, the coefficients on both \( \text{POPREF} \) and \( \text{INIT} \) fail to be statistically significant at the ten percent level. The coefficient of determination is 0.79, so that the model explains nearly four-fifths of the variation in the voter participation rate. Finally, the F-statistic is significant at beyond the one percent level, attesting to the overall strength of the model.

According to Equation 6, the estimated coefficient on the \( \text{FLFPR} \) variable is positive and significant at the one percent level. This result implies that the \( VPR \) is an increasing function of the female labor force participation rate, as hypothesized. As found in Cebula and Toma (2006), the coefficient on the \( \text{UR} \) variable is positive and significant at the one percent level, implying that voter turnout is an increasing function of the unemployment rate, presumably because of expressive voting [Copeland and Laband (2002); Cebula (2005)]. The coefficient on the \( \text{AGE} \) variable is positive and significant at the one percent level, implying (as expected) that the greater the percentage of the population age 65 and older, the greater the \( VPR \) will be. The estimated coefficient on the \( \text{HISP} \)
variable is negative and significant at the one percent level, implying that the VPR is a decreasing function of the percent of the population that is Hispanic [Barreto, Segura, and Woods (2004); Cebula and Toma (2006)]. As for the PCPERSINC variable, it exhibits the expected positive sign and is significant at the one percent level, implying that higher income persons tend to be more likely to vote [Tolbert and Smith (2005); Campbell, Converse, Miller, and Stokes (1960)]. The estimated coefficient on the HSANDMORE variable is positive (as hypothesized) and significant at the 2.5 percent level, implying that the greater the proportion of the population with a high school diploma or more, the higher the voter turnout. This is consistent with arguments in Campbell, Converse, Miller, and Stokes (1960), Tolbert and Smith (2005), and Cebula and Toma (2006), among others. The estimated coefficient on the COST variable is negative and statistically significant at the one percent level, implying that the VPR is a decreasing function of COST. This finding implies that a higher living-cost level is likely to discourage lower voter turnout because the higher the cost of living, ceteris paribus, the greater the expected (and actual) costs of voting may be.

Finally, there are the results for the “direct democracy” variables. The sign on the estimated coefficient for the LEGREF variable is positive, as hypothesized, and significant at the four percent level. Thus, the greater the number of statewide legislative referenda on the ballot, the greater the VPR. Clearly, this measure of direct democracy appears to induce an increase in the voter participation rate. On the other hand, the coefficient on the POPREF variable is actually negative, although it fails to be significant at the ten percent level. In addition, although the coefficient on the INIT is negative, it too fails be significant at even the ten percent level. Thus, although the number of statewide legislative referenda on the ballot appear to increase voter turnout, the voter turnout appears not to be significantly affected by either the number of statewide popular referenda or the number of statewide initiatives on the ballot. However, the combined effect of these three forms of direct democracy clearly is to raise the VPR since a statistically significant positive coefficient is not offset by two statistically insignificant coefficients.

**Conclusion: Direct Democracy Raises Voter Turnout**

With the objective of supplementing the materials in a Public Choice course, this study examines the hypothesis that direct democracy, as reflected by the number of statewide legislative referenda and/or the number of statewide popular referenda and/or the number of statewide initiatives, may raise the voter participation rate. This argument is based on the idea that such forms of direct democracy act to “empower” voters and thereby raise the expected gross benefits of voting (EGB). In so doing, these direct democracy forms also would raise the expected net benefits of voting (EGB-EGC) and hence the probability of voting. Alternatively stated, this study investigates empirically the argument by Progressive Era scholars that direct democracy should stimulate voter participation by energizing citizens with a sense of political efficacy. The contemporary relevance of this study is reflected in the large number (exceeding 200) of ballot measures appearing across the U.S. during the 2006 general election.

This study uses cross-section data from the 2004 Presidential election, the most recent Presidential election to date. The system includes a variety of economic and demographic factors, including per capita personal income, the unemployment rate, the female labor force participation rate, the percentage of the population that is Hispanic, the percentage of adults age 25 and over with at least a high school diploma, the cost of living, and the percent of the population that is age 65 and over. The most basic conclusion of the analysis is that direct democracy in the form of the number of statewide legislative referenda exercises a statistically significant positive impact on the voter participation rate. By contrast, the numbers of statewide popular referenda and initiatives apparently do not; the latter yield insignificant coefficients. The latter fact notwithstanding, overall, direct democracy does act to elevate the voter participation rate. Direct democracy works!

**References**

ACCRA: The Council for Community and Economic Research. 2003:  
www.missourieconomy.org/indicators/cost_of_living/index.stm


