

Assessing the Illinois Referendum as a Tool for Democracy

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ABSTRACT

This paper examines data on Illinois referenda in the context of findings from prior research on tools of direct democracy. We review existing literature on referenda and initiatives to conclude that their use drives more democratically-aligned policy outcomes and a more engaged populace, and that factors including policy topic, wording, voter turnout, and campaign spending can all significantly affect referendum outcomes, possibly undermining the referendum’s efficacy as a policy tool. We analyze data on Illinois referenda since 1980 to assess the impact of policy topic, election type, and election turnout. We find that Presidential elections and higher voter turnout both significantly negatively impact pro-referendum vote share, and that passage rate varies significantly with policy topic area.

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MISSION STATEMENT

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I. Executive Summary

A referendum can be any question posed directly to voters on the ballot. It is a form of direct democracy, allowing citizen opinion to influence laws without intermediaries. In recent years, referenda have been associated with highly controversial outcomes both in the U.S. and abroad, including Brexit, Turkish constitutional reform, marijuana legalization, and gay marriage bans, among many others. One component of assessing whether referenda are a robust tool for healthy democratic decision-making is determining what factors other than legitimate democratic consensus may affect a referendum's outcome. In particular, in this report we examine three main questions:

- (1) What democratic policy and social outcomes are fueled by referenda?
- (2) What factors drive the success or failure of a referendum?
- (3) Are referendum outcomes influenced by campaign spending?

This report begins with a review of the existing research on the referendum across the U.S. In addressing question (1), we make the evidence-based case that the usage of referenda can drive several important democratic outcomes, including the alignment of policy with majority preferences and increased voter turnout in elections. In investigating question (2), we find evidence of a significant status quo bias, a negative relationship between turnout and referendum passage, and a high potential for question wording to manipulate results; our work on question (3) identifies a large effect of campaign spending on public awareness and opinion, and referendum outcomes. The findings related to the last two questions indicate that in practice, referenda and initiatives are not fully directly democratic, as they have vulnerabilities to the influences of the elite or the apathy of the electorate.

To assess the presence of such vulnerabilities in Illinois, we investigate its statewide referenda since 1970, when its current constitution was first adopted. Due to strong restrictions on citizen-initiated referenda in this constitution, Illinois has had relatively few referenda in this period ($n=35$) and most have been referred to the ballot voluntarily by the state legislature ($n=28$) (refer to Appendix A for a complete list of referenda during this period). We examine these referenda in relation to three variables: voter turnout, policy topic, and election type (midterm vs. Presidential).

Ultimately, we find a negative correlation between turnout and “yes” vote share on Illinois referenda, and a negative effect of Presidential elections (as opposed to midterms) — each significant at >90% confidence — lending some support for the literature's conclusion that referenda are less likely to pass when many voters turn out in an election.

We also find significant differences between referendum passage rates by policy topic area (taxes, criminal justice, government structure, economic regulation, and government services). Qualitatively, this differentiation by topic could suggest that genuine policy preferences, and not apathy or status quo bias, are shaping Illinoisans' referendum votes.

We urge cautious optimism about Illinois referenda as a tool for democracy, and suggest that the state ease its unusual restrictions on citizen-initiated referenda. Although nondemocratic factors, both in Illinois and other states, are likely to play a role in shaping their outcomes, referenda still empower citizens to express their preferences, and lead to democracy-driven policies.

II. Existing Research

To find the impact of referenda on measures of democracy, we first reviewed existing literature on referendum effects in the United States since 1970. Previous literature tends to focus on referenda as citizen-based initiatives: that is, ballot measures which are created by constituents, circulated as a petition, and placed on the ballot once some number of signatories have been reached. The other type of referendum, more common in Illinois, is those that the state legislature writes and places on the ballot as an advisory question. A binding form of this “legislatively referred” referendum is often required to approve state constitutional amendments. To find more points of comparison in existing literature to this kind of legislatively referred referenda, we decided to expand our literature review to include other types of non-citizen initiated, bureaucratically-driven direct democracy referenda such as bond votes and consolidation approvals.

Our review focuses on research that addresses any of three key questions:

- (1) What democratic policy and social outcomes are fueled by referenda?
- (2) What factors drive the success or failure of a referendum?
- (3) Are referendum outcomes influenced by campaign spending?

What democratic policy and social outcomes are fueled by referenda?

The presence of referenda and initiatives has been shown to secure democracy in several ways — most directly by aligning policy outcomes with the majority’s preferences, but also by increasing citizen participation in other democratic behaviors, such as voting and organizing. Specifically, we gather existing research showing that initiatives have been found to:

(1) Promote the majority’s preferences

Matsusaka (2003) debunks the conception that the influence of special interests causes initiatives to be less democratic than legislated policy, and instead shows that initiative-driven policies tend to align more with majority preferences. Gerber (1996) compares abortion laws specifically to find that initiative states pass parental consent laws that better reflect the majority’s preference than non-initiative states.

(2) Increase voter turnout in non-presidential elections

Smith and Tolbert (2004, 40) finds that states with more frequent use of ballot initiatives have on average higher turnout in midterm elections than non-initiative states. Childers and Binder (2012) analyzes data on U.S. initiatives from 1870 to 2008 to offer the clarifying conclusion that having an initiative on the ballot during a given election significantly increases turnout for that election, but having used initiatives in the past or having the capability to use initiatives has no effect, possibly suggesting that the presence of initiatives do not structurally increase democratic tendencies, but the chance to vote on an initiative does drive voters to the polls.

(3) Increase participation in and giving to interest groups

Smith and Tolbert (2004) finds that states with a large number of initiatives on the ballot have 47.2 percent more special interest membership organizations than states without initiatives.

(4) Improve the allocation of economic resources

Blomberg, Hess, and Weerapana (2001) finds that states with initiative systems waste 20 to 30 percent fewer resources than states without.

What factors drive the success or failure of a referendum?

The factors influencing any referendum's success or failure are numerous. Many such influences have been explored by social scientists, and here we summarize some of that evidence base. We find in particular that factors such as the wording with which a referendum is proposed and described, certain properties of the state (or locality) where the referendum is taking place, and the policy topic of the referendum all have well-documented links to the referendum's tendency to pass.

Wording of the ballot title and descriptions

The wording of the ballot title is commonly held to affect a referendum's chance of passage, but the empirical research supporting that notion is sparse.¹ Legal experts have pointed to ballot language as an important consideration. Justice Unis of the Oregon Supreme Court spoke out on this issue. He maintained that "wording of the ballot is important because voters see only the caption, the resulting statements, and the summary on the ballot. [Because] they do not see the full text of the law... the wording of the ballot title greatly influences the success or failure of a particular measure."²

Anecdotal evidence appears to support this argument. For example:

- (1) In 1998, the ACLU filed suit in Washington state's Superior Court against a ballot initiative banning affirmative action, arguing that language was unfair and misleading. The lawyers maintained that the ballot should have stated it would prohibit "affirmative action", not "preferential treatment".³
- (2) In 2010, the Florida Supreme Court Justices struck down a ballot initiative to amend the state's constitution, allowing Floridians to refuse health care insurance. The amendment language conveyed a strong opinion, suggesting it would "ensure access to health care services without waiting lists, protect the doctor-patient relationship, [and] guard against mandates that don't work".⁴ In court, the justices asserted that "the ballot language put forth [...] contains misleading and ambiguous language" and suggested that the amendment was a "classic example of a ballot summary 'flying under false colors'".⁵
- (3) In 2018, the DuPage County Election Authority conducted an experiment to assess the influence of ballot titles. The test subjects were asked to vote on a proposal to eliminate gay marriage. The Election Authority compared two existing ballot titles, "Eliminates the Right of Same-Sex Couples to Marry" and "The Protect Marriage Act." The results found that voters shifted about 12 percentage points in favor of the initiative when the latter title was used. This difference was substantial, reversing the outcome of the vote.⁶

Evidence from local-level referenda, including school bonds

Studying instances of legislatively-guided direct democracy at other levels of government can help our understanding of what drives state-level referenda to succeed or fail. For example, Filer and Kenny (1980) finds that city/county consolidation referenda tend to pass if voters think that the mean economic benefit to their community justifies the costs of voting and that the benefits will reach them, supporting theories that citizens are more heavily incentivized to participate in democracy when its individual benefits to them are clear. Specific ways a bond is designed and

¹ See Hastings and Cann (2014)

² *Ibid.*

³ See Paul (1998)

⁴ See Richey (2010)

⁵ *Ibid.*

⁶ See Hastings and Cann (2014)

presented can make it more or less passable, as well; Bowers and Chen (2015) studies building bonds to find that they are more likely to pass if they are high up on the ballot, and if they combine multiple buildings and are not for sports facilities.

School bonds, a very popular form of local referendum, have been studied extensively. The literature on them reveals that a higher passage rate is associated with districts that have lower voter turnout, larger populations, smaller ethnic minority populations, or fewer poor students; and with bonds that are smaller in size and further up on the ballot.⁷

Are referendum outcomes influenced by campaign spending?

Existing literature does not offer a definitive answer to this question in general. However, in the context of citizen-initiated referenda (initiatives) specifically, the available evidence shows that campaign spending is highly likely to influence outcomes. Zisk (1987) finds that the higher spending side wins 78% of the time; 58% of the time the public option will have shifted in its favor over the course of the campaign.

Researchers are split on whether financial support is more effective for the pro- or anti- side. Stratmann (2006) finds that while both pro- and anti- advertisement spending has a significant effect on an initiative's final vote share, supporting advertisements are almost twice as effective as opposing advertisements. Magleby (1986) disagrees, finding that opponents spending the same or more than proponents win 80% of the time, but proponents spending twice as much as opponents only succeeded 48% percent of the time. Note, however, that Magleby (1986) only examines passage rate given relative spending, where Stratmann (2006)'s model includes a variety of controls in its attempt to isolate a causal effect, so it is possible for the results to be compatible.

Other research has explored the specific causal effects of spending, beyond just looking at the relationship between money and passage rate. Collins and Oesterle (1995) argues that the biggest influence of money is in determining what gets on the ballot. Smith and Tolbert (2004) makes the case that campaigning changes turnout rather than persuading voters.

⁷ See Bowers, Metzger, and Militello (2010) and Silverman (2011)

III. Illinois’s Restrictions

While the Illinois Constitution allows for several forms of direct democracy, restrictions placed on the scope and subject matter of ballot measures are a substantial constraint on the use of initiatives and referenda. Binding Illinois ballot measures include legislatively referred constitutional amendments and citizen-initiated constitutional amendments.⁸ Illinois also has non-binding advisory ballot questions, which have been criticized as being both undemocratic and a tool to increase partisan turnout.⁹ Citizen-initiated constitutional amendments are only able to amend Article IV of the Illinois Constitution, which deals primarily with the legislative branch.¹⁰

Additionally, as written in the constitution and ruled on in the Illinois Supreme Court case *Coalition for Political Honesty v. State Board of Elections*, the subject of a citizen-initiated constitutional amendment must be both “structural and procedural.”¹¹ This subject restriction has been used as the legal justification in court to not certify ballots with many citizen-initiated constitutional amendments, with the *Independent Map Amendment* (2016) being the most recent to be struck down.¹² These heavy restrictions on the subject, structure and type of referendum severely limit the number of referenda in Illinois, with only 35 state-wide binding ballot questions since 1970.¹³

IV. Methodology and Limitations

In this investigation, we gathered data on every statewide referendum that’s gone to ballot in Illinois since January 1970 (n=35). We were interested in assessing the impact of three variables on referendum support: referendum topic, election year, and turnout.

To assign topic, we sorted the referenda into five categories: economic regulation (n=4), criminal justice (n=7), state government structure (n=12), state taxes (n=10), and government services (n=2.) We constructed these categories with the intent to create the largest possible groupings while avoiding over-generalizing the contents of any particular referenda. A full list of the referenda in our dataset, tagged by category, is found in Appendix A.

In Illinois, statewide referenda were always held on even years during the November general election, with the exception of five constitutional questions in 1970 accompanying the 1970 constitutional convention in Illinois. Accordingly, we categorized referenda as occurring during a presidential election year, a midterm election year, or “none” in the case of these five constitutional amendments from 1970, which happened in December. Because of the exceptional nature of a constitutional convention, we excluded these five referenda from our analysis, although we still present their nominal passage rate in Figure 2.

⁸ Illinois Constitution, Article XIV

⁹ See Mackey (2015)

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² Chicago Tribune Editorial Board (2016)

¹³ Cleaned data – idk how to cite but needs to be

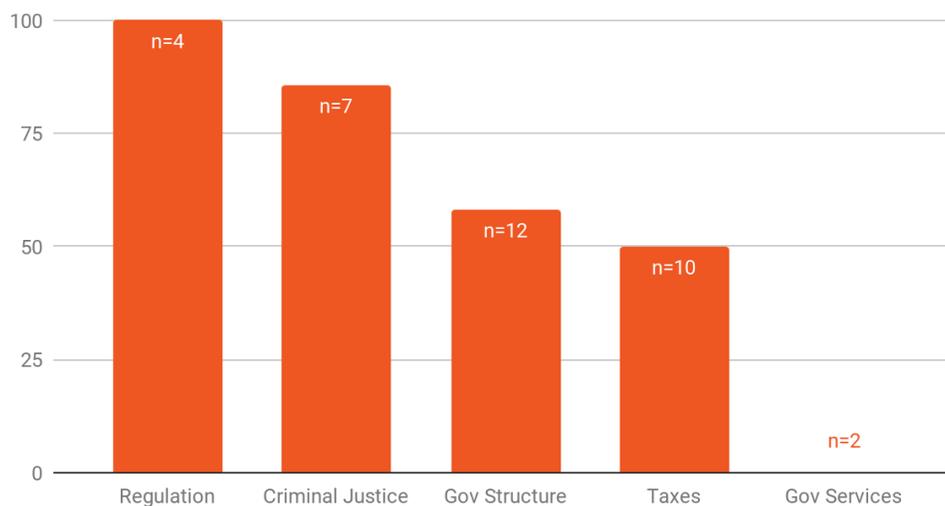
Finally, we examine turnout by taking the number of votes on a particular referendum divided by the total Voting Eligible Population (VEP.) Examining turnout on a question-by-question basis rather than election-by-election is particularly important because many voters in a given election leave a particular referendum question blank - often in excess of 10% of voters who cast a ballot in that election (Appendix B.) The Voting Eligible Population is the total adult population of the state of Illinois with noncitizens, felons, and the incarcerated subtracted. Information on the official VEP of Illinois was available for the period 1980 - 2016, so we did not include the 11 referenda that occurred between 1970 and 1980 in this analysis.¹⁴

V. Findings and Analysis

Topic has a significant effect on referendum outcome, with referenda ranging from a 0% to 100% average pass rate by topic bucket.¹⁵ Despite the small (n=35) overall sample size and a particularly small sample size of some buckets (n=2 for government services and n=4 for economic regulations), a Chi-squared analysis accounting for sample size shows that the deviation between buckets is statistically significant at the 90% confidence level (p-value=0.086, see Appendix C). The small sample size should give us pause in using these results as bedrock estimates for the level of controversy over a particular topic area. Results by topic are shown in Figure 1.

Many factors could be driving the differences in passage rates by topic. The substantial variance might suggest that voters are expressing sincere policy preferences reluctances unique to each category; if referendum passage rate did not vary with referendum contents, we might conclude that voting behavior was somewhat random, and the population was not exerting serious preferences. On the other hand, variability by topic area could be the result of varying levels of interest group activity and spending.

Figure 1. Passage Rate by Topic

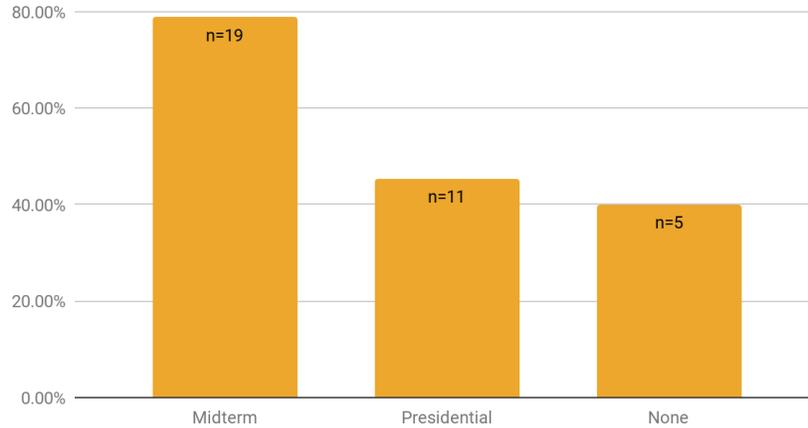


¹⁴ See the United States Elections Project's page on "Voter Turnout": <http://www.electproject.org/home/voter-turnout/voter-turnout-data>

¹⁵ Excluding "government services" referenda, which passed 0/2 times, the lowest passage rate is 50% ("taxes", n=10).

We also find that election type has a statistically significant effect on passage rate at the 90% confidence level: referenda during Presidential elections are less likely to pass than those during midterms. This finding is visualized in Figure 2 and explained in Appendix C.

Figure 2. Election Year vs. Passage Rate

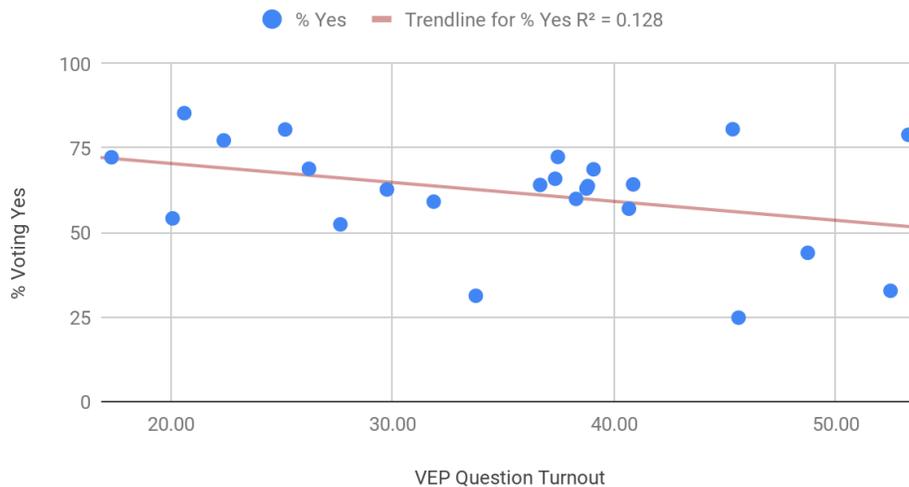


We also find that turnout is negatively associated with referendum passage rate. Our linear model of the form

$$\% \text{ in favor} = \beta_0 + \beta_1 \times \text{turnout} + \epsilon$$

yields $\beta_1 = -0.56$, meaning that a 1pp increase in turnout is linked to a .56pp decrease in the “yes” vote share. The coefficient is significant at >90% confidence ($p = 0.087$), and the model has an R^2 value of 0.128. Results are visualized in Figure 3.

Figure 3. Turnout vs. “Yes” Vote Share



These results support the literature’s findings that turnout and attention to elections matter. Midterms, with lower voter attention and turnout, see referenda pass at a 33.5pp higher rate than Presidential elections. Accordingly, Figure 3 shows that referenda with the highest turnouts (>50%) get nearly 25pp fewer yes votes on average than referenda with the lowest turnouts (<20%). Recall the status quo bias discussed in prior literature: if voters tend to prefer the status quo, but to prefer it weakly, then the average “yes” voter will care more about the issue than the average “no” voter; so

in low-turnout elections, where the share of low-caring voters is low relative to the share of high-caring voters, high-caring (i.e. pro-referendum) voters will have an advantage.

Appendix D provides supplementary data using local, rather than statewide, referenda. Those data, despite being more numerous, are also inconclusive, but support some of the limited conclusions present in the statewide data: that circumstantial factors like turnout and election year have an effect on referendum outcome, but that real voter preferences are nonetheless being expressed.

VI. Conclusions

Results

Our literature review answers its three main questions as follows:

- (1) Referenda drive increased alignment of policy with the majority's preferences, and increased participation in democracy, specifically voter turnout and engagement with interest groups.
- (2) Status quo bias, misleading phrasing, and policy topic are all documented to significantly effect a referendum's likelihood of passing.
- (3) Campaign spending can significantly influence the outcome of a referendum, and usually works through changing turnout rather than changing minds. The literature is split on whether spending is more effective for proponents or opponents.

Even given a fundamentally limited sample of referenda, our analysis yields some quantitative findings: first, that during lower turnout elections, referenda are less likely to pass. This is consistent with theories of a “status quo bias” that predict that voters that care less about a given issue are more likely to vote “no” on it. Second, we find that referendum passage rate by policy topic area may vary significantly; specifically, referenda on regulations and criminal justice are much more likely to pass than referenda on government structure and taxes.

Recommendations

In light of the existing literature's findings on the positive effects of referenda on policy outcomes and citizen engagement, we recommend that Illinois reconsider its restrictions to the direct democracy process — chiefly that citizen-initiated referenda must be “structural and procedural” and can only amend Article IV of the Constitution — that have limited the number of referenda proposed since 1980.

In response to findings that campaign spending substantially affects referenda and initiatives, and prior research on Illinois campaign finance realities, we recommend further study into the relationship between campaign spending and referendum success in Illinois,¹⁶ and more diligent tracking of the spending patterns surrounding referendum campaigns.

Finally, we consider the “status quo bias” and the broader problem of voter apathy. The evidence presented here should not suggest that referenda are not a robust tool for democracy: voter reluctance to change policy is not a priori unjustified, and distorted election outcomes due to low turnout is a problem for all democratic policymaking. The solution is to increase voter excitement and engagement — to put policy power back in the hands of citizens, by expanding the powers of referendum and initiative in Illinois.

¹⁶ See Drozda and Duggan (2018) and Berusch and Li (2018)

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Appendix A. Illinois Referenda 1970 - 2016

| Date | Type | Topic area | % in Favor | Pass/ Fail |
|---------------|--------------------------------|------------------|------------|---------------|
| 1970 - Nov 3 | LRCA | Regulation | 87.7 | P |
| 1970 - Nov 3 | Bond Issue | Regulation | 80.81 | P |
| 1970 - Nov 3 | LRCA | Taxes | 82.25 | P |
| 1970 - Dec 15 | Con. Convention | Gov Structure | 53.89 | F |
| 1970 - Dec 15 | Con. Convention | Gov Structure | 54.76 | F |
| 1970 - Dec 15 | Con. Convention | Criminal Justice | 54.76 | F |
| 1970 - Dec 15 | Con. Convention | Gov Structure | 57.25 | P |
| 1970 - Dec 15 | Con. Convention | Gov Structure | 57.9 | P |
| 1974 - Nov 5 | LRCA | Gov Structure | 50.52 | F |
| 1978 - Nov 7 | LRCA | Taxes | 56.48 | F |
| 1978 - Nov 7 | LRCA | Taxes | 51.89 | F |
| 1980 - Nov 4 | Initiated Const. Amendment | Gov Structure | 68.7 | P |
| 1980 - Nov 4 | LRCA | Taxes | 31.3 | P |
| 1982 - Nov 2 | LRCA | Criminal Justice | 85.31 | P |
| 1984 - Nov 6 | LRCA | Taxes | 52.41 | F |
| 1986 - Nov 4 | LRCA | Criminal Justice | 54.18 | F |
| 1986 - Nov 4 | LRCA | Taxes | 77.25 | P |
| 1988 - Nov 8 | LRCA | Gov Structure | 59.13 | F |
| 1988 - Nov 8 | ABR | Gov Structure | 24.82 | F |
| 1988 - Nov 8 | LRCA | Taxes | 64.23 | P |
| 1990 - Nov 6 | LRCA | Taxes | 72.25 | P |
| 1992 - Nov 3 | LRCA | Criminal Justice | 57.05 | F |
| 1992 - Nov 3 | LRCA | Gov Services | 80.56 | P |
| 1994 - Nov 8 | LRCA | Criminal Justice | 62.73 | P |
| 1994 - Nov 8 | LRCA | Gov Structure | 68.87 | P |
| 1998 - Nov 3 | LRCA | Criminal Justice | 80.47 | P |
| 2008 - Nov 4 | ABR (Automatic Ballot Measure) | Gov Structure | 32.77% | F |
| 2010 - Nov 2 | LRCA | Gov Structure | 65.90% | P |
| 2012 - Nov 6 | LRCA | Gov Services | 44% | F |
| 2014 - Nov 4 | Advisory Question | Criminal Justice | 59.95% | P |
| 2014 - Nov 4 | Advisory Question | Gov Structure | 63.00% | P |
| 2014 - Nov 4 | Advisory Question | Regulation | 63.74% | P |
| 2014 - Nov 4 | LRCA | Regulation | 72.36% | P |
| 2014 - Nov 4 | LRCA | Taxes | 64.08% | P |
| 2016 - Nov 8 | LRCA | Taxes | 78.91% | P |

Appendix B. Illinois VEP and Turnout 1980 - 2016

| Date | VEP of Illinois | # Voters - Question | VEP Turnout Rate by Question |
|--------------|-----------------|---------------------|------------------------------|
| 1980 - Nov 4 | 7,868,300 | 3,074,549 | 0.3908 |
| 1980 - Nov 4 | 7,868,300 | 2,656,407 | 0.3376 |
| 1982 - Nov 2 | 7,908,220 | 1,629,076 | 0.2060 |
| 1984 - Nov 6 | 7,922,605 | 2,190,345 | 0.2765 |
| 1986 - Nov 4 | 7,912,733 | 1,588,346 | 0.2007 |
| 1986 - Nov 4 | 7,912,733 | 1,771,133 | 0.2238 |
| 1988 - Nov 8 | 7,950,848 | 2,533,075 | 0.3186 |
| 1988 - Nov 8 | 7,950,848 | 3,627,253 | 0.4562 |
| 1988 - Nov 8 | 7,950,848 | 3,249,002 | 0.4086 |
| 1990 - Nov 6 | 8,029,525 | 1,390,318 | 0.1732 |
| 1992 - Nov 3 | 8,113,900 | 3,300,089 | 0.4067 |
| 1992 - Nov 3 | 8,113,900 | 3,680,194 | 0.4536 |
| 1994 - Nov 8 | 8,175,312 | 2,431,908 | 0.2975 |
| 1994 - Nov 8 | 8,175,312 | 2,144,200 | 0.2623 |
| 1998 - Nov 3 | 8,285,614 | 2,084,123 | 0.2515 |
| 2008 - Nov 4 | 8,681,138 | 4,555,927 | 0.5248 |
| 2010 - Nov 2 | 8,798,829 | 3,285,617 | 0.3734 |
| 2012 - Nov 6 | 8,899,143 | 4,337,888 | 0.4875 |
| 2014 - Nov 4 | 9,028,752 | 3,456,675 | 0.3829 |
| 2014 - Nov 4 | 9,028,752 | 3,499,038 | 0.3875 |
| 2014 - Nov 4 | 9,028,752 | 3,504,697 | 0.3882 |
| 2014 - Nov 4 | 9,028,752 | 3,382,466 | 0.3746 |
| 2014 - Nov 4 | 9,028,752 | 3,310,295 | 0.3666 |
| 2016 - Nov 8 | 9,028,752 | 4,811,115 | 0.5329 |

Appendix C. Chi-Squared Analysis Tables

Table C1. Chi-squared results by policy topic

| Pass/Fail by Topic | | | | | | | Chi-Squared Values | | |
|--------------------|----------|------|-------|----------------------------|------|-------|-----------------------------|------|-------------|
| | Observed | | | Expected (H ₀) | | | (Obs-Exp) ² /Exp | | |
| Topic | Pass | Fail | Total | Pass | Fail | Total | Pass | Fail | Total |
| Regulation | 4 | 0 | 4 | 2.51 | 1.48 | 4 | 0.88 | 1.49 | |
| Criminal Justice | 6 | 1 | 7 | 4.4 | 2.6 | 7 | 0.58 | 0.98 | |
| Gov Structure | 7 | 5 | 12 | 7.54 | 4.45 | 12 | 0.04 | 0.07 | |
| Taxes | 5 | 5 | 10 | 6.29 | 3.71 | 10 | 0.26 | 0.45 | |
| Gov Services | 0 | 2 | 2 | 1.26 | 0.74 | 2 | 1.26 | 2.13 | |
| Total | 22 | 13 | 35 | 22 | 13 | 35 | 3.03 | 5.11 | 8.14 |

A Chi-squared value of 8.14 with four degrees of freedom implies a p-value of 0.087. With >90% confidence, we can reject the null hypothesis that differing passage rates by topic occur due to random chance.

Table C2. Chi-squared results by election type

| Pass/Fail by Topic | | | | | | | Chi-Squared Values | | |
|--------------------|----------|------|-------|----------------------------|------|-------|-----------------------------|------|-------------|
| | Observed | | | Expected (H ₀) | | | (Obs-Exp) ² /Exp | | |
| Election Type | Pass | Fail | Total | Pass | Fail | Total | Pass | Fail | Total |
| Midterm | 15 | 4 | 19 | 12.67 | 6.33 | 19 | 0.43 | 0.86 | |
| Presidential | 5 | 6 | 11 | 7.33 | 3.67 | 11 | 0.74 | 1.47 | |
| Total | 20 | 10 | 30 | 20 | 10 | 30 | 1.17 | 2.34 | 3.51 |

A Chi-squared value of 3.51 with one degree of freedom implies a p-value of 0.061. With >90% confidence, we can reject the null hypothesis that differing passage rates by election type occur due to random chance.

Technical note: Chi-squared analysis

“Observed” numbers are filled in from the elections data tables. “Expected (H₀)” numbers are the expected values of each topic-pass count, assuming the null hypothesis that topic and passage rate are independent. They are calculated as $E[R_{t,o}] = R_t \frac{R_o}{R}$, where $R_{t,o}$ is the number of referenda of topic t and with outcome o , R_t is the total number of t -type referenda, R_o is the total number of o -outcome referenda, and R is the total number of referenda. Chi-squared figures are calculated as

$$X^2_{t,o} = \frac{(R_{t,o} - E[R_{t,o}])^2}{E[R_{t,o}]}$$

and the final result is the sum of $X^2_{t,o}$ over all t and o . Election type Chi-squared analysis is identical, but with R_t representing a referendum of a given election type t .

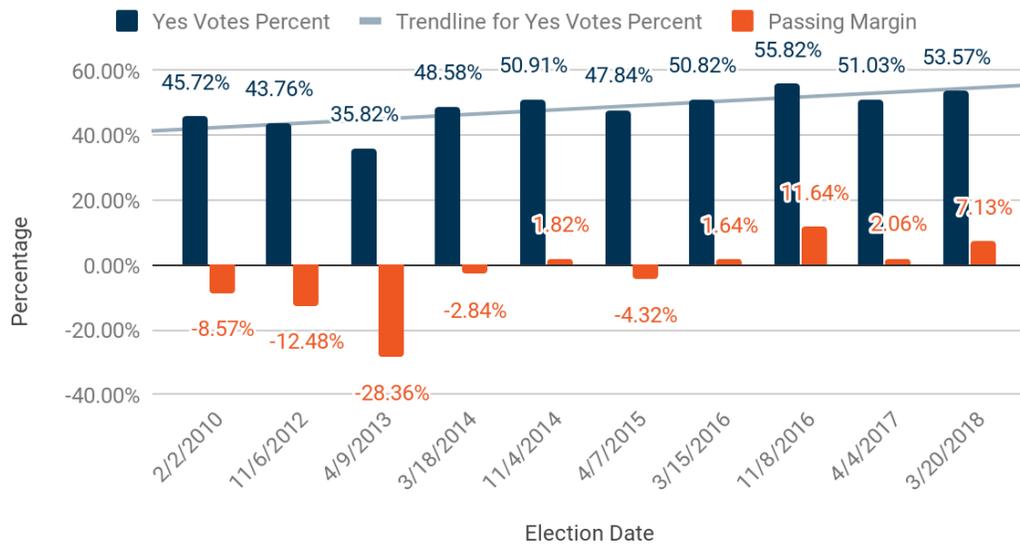
Appendix D. Local School Bond Referenda in Illinois

Because of the small sample size of statewide referenda in Illinois, local referenda — including school bonds and municipal improvement referenda — are one potential source of information about referenda. McGuire (1996) finds that the outcomes of referenda concerning taxes and bonds differ by district type — specifically that such referenda are more likely to pass in fire districts and less likely to pass in school districts — and that referenda that create tax caps increases rarely pass.

To supplement our main study of statewide referenda, we investigated local school bond referenda in Illinois. By combining data from Ballotpedia¹⁷ and the Illinois Association of School Administrators¹⁸ we were able to create a complete dataset of all school bond votes from 2012 to 2019 (n=382 different votes) and draw the following conclusions:

- (1) The number of total votes on a given ballot does not correlate with outcome.
- (2) School bonds are more likely to pass in even years as compared to odd ones, corroborating a finding from Gengen (2017).
- (3) Over time these measures become more likely to pass.
- (4) School boards have a lower passage rate than any other type of local bonds.

Table D1. Average Yes Votes on Local Government Referenda Over Time



¹⁷ "School Bond and Tax Elections in Illinois," Ballotpedia, https://ballotpedia.org/School_bond_and_tax_elections_in_Illinois.

¹⁸ "Illinois School Referenda / Home," Illinois Association of School Administrators, <https://www.iasaedu.org/domain/50>.

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