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Research Article

Incumbent-Quality Advantage and Counterfactual Electoral Stagnation in the US Senate

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This article examines the extent to which electoral selection based on candidate quality alone can account for the pattern of re-election rates in the US Senate. In the absence of officeholder benefits, electoral selection is simulated using observed dropout rates from 1946 to 2010. This provides a benchmark for the re-election rate that would be generated by incumbent quality advantage alone. The simulation delivers a re-election rate that is almost identical to the observed rate prior to 1980, at around 78 per cent. In the later subsample, quality-based selection generates a re-election rate that is seven percentage points lower than observed. The divergence in the re-election rates in the later subsample is consistent with the findings of vote margin studies that indicate rising incumbency advantage due to officeholder benefits. In addition, it is found here that the quality-based selection first-term re-election rate is significantly lower than the observed first-term re-election rate. This result supports sophomore surge vote margin studies of officeholder benefits.

Keywords: congressional elections; re-election rate; incumbency advantage; electoral selection

Introduction

Incumbents in the US Congress are typically re-elected.[1] In an environment with significant officeholder benefits, incumbents who would otherwise be defeated may be able to retain their seats. High re-election rates are therefore often taken as *prima facie* evidence of a poorly functioning political system where lesser quality incumbents are not replaced. However, the literature on congressional races does not provide a yardstick to gauge what constitutes an *overly* high re-election rate. Even in the absence of officeholder benefits, it is likely that an incumbent would be re-elected since he or she must be of a relatively high quality given their previous electoral success. Incumbents who have served many terms have defeated multiple opponents and so are likely to be of very high quality. Hence their re-election rates are likely to be very high. In this article we examine the extent to which electoral selection based on candidate quality alone can account for the pattern of re-election rates in the US Senate. The counterfactual setup may provide a simple benchmark for the re-election rate in the absence of officeholder benefits.

Disentangling quality-based selection effects from direct officeholder benefits such as superior media exposure, franking privileges and fundraising advantages and indirect officeholder benefits such as entry deterrence of high-quality challengers can be difficult as the full extent of candidate quality is typically unobservable. A strand of the literature attacks this problem directly. For example, Stone and Simas (2010) and Stone et al. (2010) use expert informants to score incumbents and challengers in the US House of Representatives electoral contests; and McCurley and Mondak (1995) compile indicators of competence and integrity. However, one can never be certain that all aspects of candidate quality are addressed and failing to fully control for quality may lead to biased estimates of officeholder benefits (Gelman and King, 1990). To bypass the problem, Levitt and Wolfram (1997) exploit information contained in contests of repeat challengers; Lee (2008), Uppal (2009; 2010) and Redmond and Regan (2013) employ regression discontinuity design, making use of the electoral history of bare-winners and bare-losers who generate similar electoral support.[2]

We take a simple but complementary approach. We examine a counterfactual framework where candidate quality is the sole determinant of electoral success. As in Dix and Santore (2002), we consider candidate 'quality' to be the immutable characteristics of a candidate that are desired by voters. In the terminology of Adams et al. (2011), our definition of 'quality' captures 'character valence' based on traits such as integrity, competence and diligence.[3] We assume that candidate quality is perfectly observable by the voter and the median voter strictly prefers the higher quality candidate. We simulate an electoral process where the higher quality candidate wins irrespective of incumbency status. The simulation is calibrated using the observed dropout rates in the US Senate over the period 1946–2010. Re-election rates from the simulation are then compared to the observed re-election rates in the US Senate across terms in office and across time periods. Prior to 1980 the re-election rate from the simulation is almost identical to the observed rate, at 78 per cent. From 1980 to 2010, however, the rates diverge; while the observed re-election rate is 85 per cent, the simulated rate based on candidate quality is only 78 per cent. The seven percentage point divergence in the later part of the sample may be indicative of an increase in electoral stagnation in excess of what quality-based selection would generate.

The methodology of this simulation analysis is quite different from that employed by regression analysis vote margin studies. Therefore, the results can provide an indirect robustness check. The divergence in the observed and simulated re-election rates from 1980 to 2010 is consistent with the findings of vote margin studies that indicate rising incumbency advantage. Moreover, we find that the divergence in the re-election rates is greatest for first-term senators. This result supports the findings of sophomore surge vote margin studies.

The next section provides a brief discussion of closely related literature. The ensuing sections present the setup of the simulation, describe the data, summarise the results, and conduct a sensitivity analysis before the final section provides our conclusions.

Related literature

While the literature on congressional races typically focuses on vote shares rather than re-election rates, Jacobson (1987) argues that what matters most is winning or losing, and not the size of the victory. However, re-election contains less information than vote margin since the former is dichotomous while the latter is continuous. Therefore, Ansolabehere and Snyder (2002) suggests that studying the margin enjoyed by the candidate due to incumbency

status is the first step to understanding re-election rates. Depending on the methodology used, since the 1980s incumbency advantage is estimated to be around 4 per cent vote share for low-level state offices and around 8 per cent vote share for high-level federal and statewide offices (see Hirano and Snyder, 2009). While vote margins are clearly closely related to re-election rates, the relationship is not necessarily one-to-one. Jacobson (1987) shows that from the 1950s to the 1980s vote shares of House incumbents increased, but there was no rise in the re-election rates. Likewise, Garand (1991) and Jewel and Breaux (1988) demonstrate that the vote margins of incumbents grew substantially in state legislative races in the 1970s and 1980s, but re-election rates barely increased. Hence we analyse re-election rates directly.

Carey et al. (2000), Stone et al. (2004; 2010), Diermeier et al. (2005) and Gowrisankaran et al. (2008) discuss the factors that influence the re-election rate. We take a stab at a different question and examine how much of the observed re-election rate can be accounted for by incumbent quality alone.

The closest work is Zaller (1998) on House elections. Methodologically, our article is very similar to Zaller (1998). However Zaller (1998) investigates the relative importance of forces external to the candidates – the role of non-skill factors, thereby introducing a number of features other than candidate quality into the framework which are designed to increase its realism. Here, on the other hand, we are interested in establishing a benchmark re-election rate in the absence of officeholder benefits that would result if candidate quality were all that mattered. So a key aspect where the analyses differ is in our treatment of indirect officeholder benefits. In Zaller (1998), the existence of an incumbent reduces the competitiveness of the opposition primary and hence the resulting re-election rate incorporates an implicit scare off effect – on average, the opposition fields a weaker candidate when faced with an incumbent. Here we analyse electoral stagnation generated by selection based solely on quality, absent any source of officeholder benefits including scare-off effects which may lead to significant incumbency advantage. Hence we assume that the competitiveness of the opposition party's primary is unaltered by the existence or non-existence of an incumbent.

Simulation setup

We start with an open seat contest where two candidates run for office. The qualities of both candidates are drawn independently from the same continuous distribution function $F(q)$. Each candidate's quality score (q_i) is permanent over the life time of his political career. The electoral outcome is deterministic given the quality scores of the candidates; the candidate with the higher quality wins the election and becomes a first-term senator. Since the cumulative distribution function (c.d.f.) is continuous, ties occur with zero probability. At the end of his first term the incumbent either drops out with an exogenous probability p_1 or runs for re-election with probability $(1 - p_1)$. If he drops out, then there is a new open seat and the process repeats. If he runs for re-election, his quality score remains unaltered and a new challenger contests the seat. The challenger's quality is randomly drawn from $F(q)$ and the election goes to whoever has higher quality.[4] If the incumbent is defeated, we record a 'defeat' for a first-term senator. If the incumbent wins we record a 're-election' for a first-term senator. If the senator goes on to serve a second term, at the end of the second term he either drops out with exogenous probability p_2 or reruns with probability $(1 - p_2)$. If the incumbent wins, we record a 're-election' of a second-term incumbent. If the incumbent loses, we record a 'defeat' of a second-term incumbent; the challenger becomes a new first-term officeholder

and the process continues with the new incumbent. We follow this process for 500 million elections resulting in precise estimates of the re-election rates implied by the framework for each tenure of an incumbent.

Any quality distribution function $F(q)$ with continuous c.d.f. is permitted.[5] For instance, $F(q)$ may be the result of a primary system. If each of the k candidates in the primary has quality drawn from a distribution $G(q)$, then $F(q)$ will be the distribution of the k^{th} order statistic of k draws from $G(q)$. If the number of candidates in the primary is stochastic then the probability density function (p.d.f.) implied by $F(q)$ may be multipeaked.[6]

Note that the electoral selection in the simulation abstracts from scare-off effects. In elections where the incumbent reruns, drawing challenger quality from the same distribution as used for open seat contests implies that the existence of an incumbent does not reduce the competitiveness of the opposition party's primary. Scare-off effects can arise from direct officeholder benefits, where the electoral benefits of incumbency discourage high-quality challengers. Quality-based scare-off effects may also exist where potential challengers are deterred from running against high-quality incumbents as they view their re-election prospects as too low. Potential challengers may also be reluctant to challenge high-quality incumbents if they intrinsically value having a high-quality politician in office as in Stone et al. (2004) and Adams et al. (2011).

The critical set of parameters of the simulation are the incumbents' dropout rates p_1, p_2, ... for each term. These may differ for different terms in office. We employ the observed US Senate dropout rates from 1946 to 2010. Since the problem is identical at each open seat, it has a recursive structure. However, because there are an infinite number of possible states (the term of the current incumbent and the number of elections since the last open seat) we calculate the re-election rates via simulation.

Data

Each US state is represented by two senators, who can serve unlimited six-year terms. Elections are staggered with approximately one-third of the Senate seats up for election every two years. Data for US Senate elections from 1946 to 2010 is garnered from the Office of the Clerk of the US House of Representatives.[7] Biographical details for individual senators are obtained from the Congressional Biographical Directory. For each election we have information on the names of senators and challengers contesting the election, the election outcome, whether the incumbent was re-elected or defeated and an indicator for open-seat elections.

In addition, the data set contains information on how senators initially entered office: by general election, appointment or special election. When an incumbent senator dies or resigns before the end of his term in office, the governor of the state makes an appointment to fill the vacancy until a special election can be held.[8] The appointed senator can then decide whether to contest the special election or retire. In our counterfactual setup, elections serve to weed out low-quality candidates and holding office does not in itself provide any electoral benefits. Hence, in our data, candidates who run after being appointed to office are not coded as incumbents as they have not yet gone through the crucible of an election. This is different from the usual treatment in studies with incumbency advantage where they are treated as incumbents since in those studies holding office provides an electoral advantage.

Table 1: Observed dropout rates from the US Senate, 1946–2010 (in percentiles)

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9
12.00	20.26	31.03	35.19	28.00	48.15	54.55	25.00	100.00
n = 425	n = 306	n = 203	n = 108	n = 50	n = 27	n = 11	n = 4	n = 2

Note: n is the number of senators who were elected to at least x terms.

The data contains a total of 1,154 elections, and 268 of these were open-seat elections.[9] This leaves 886 elections that were contested by an elected incumbent seeking re-election.[10] The re-election rate in these 886 elections is equal to 81.72 per cent.

An incumbent senator can either be re-elected, defeated or he can simply drop out. Table 1 gives the observed dropout rates of incumbents over the period of study. The longest tenure of any incumbent in the data is 51.5 years of service in the Senate.

Incumbents may drop out due to outside opportunities in the private or public sector, poor health and death. The simulated setup takes these observed dropout rates as exogenous dropout probabilities. This is different from Zaller (1998), where dropout rates are assumed to be zero until 34 years in service (equivalent to just under six terms if applied to US senators). Both approaches have the potential to suffer from bias due to their treatment of dropout rates. With no interim dropout, high-quality incumbents keep rerunning, which raises the simulated re-election rate. In our simulation, incumbents may drop out before retirement. But note that our dropout probabilities do not depend on quality; in reality, an incumbent may drop out to pre-empt defeat if she observes a higher quality challenger. Hence if strategic retirement in anticipation of defeat were prevalent in the data, the re-election rates from our simulation would be biased downwards. Nevertheless, studies cast doubt on the empirical importance of strategic retirement in the analysis of re-election rates. From 1968 to 1978, Peters and Welch (1980) find that House incumbents who were involved in a corruption scandal were no more likely to drop out than those who were not. Ansolabehere and Snyder (2004) use term limits as an instrument to correct for strategic retirement; traditional estimates of incumbency advantage that do not take strategic retirement into account are only marginally different from estimates that do.

Simulation results

Simulations are run for 500 million iterations yielding negligible standard errors for the simulated re-election rates. Hence differences from actual re-election rates reflect either model misspecification or chance in the actual election process rather than imprecision in the estimates.

Table 2 summarises the observed and the simulated re-election rates for each term of office during the period 1946–2010, as well as the overall observed and simulated re-election rates. The simulated re-election rates are monotonically increasing in the number of terms. For an incumbent to reach a high term in office, she must have defeated numerous challengers along

Table 2: Observed and simulated re-election rates in the US Senate, 1946–2010

	Observed rate (%)	Simulated rate (%)	Difference (%)
term 1	80.21 n = 374 (2.06)	72.61 n = 141.1 m (0.00)	7.60***
Term 2	83.61 n = 244 (2.37)	79.30 n = 81.7 m (0.00)	4.31
Term 3	80.00 n = 140 (3.38)	83.26 n = 44.7 m (0.01)	–3.26
Term 4	80.00 n = 70 (4.78)	85.89 n = 24.1 m (0.01)	–5.89
Term 5	91.67 n = 36 (4.61)	87.77 n = 14.9 m (0.01)	3.90
Term 6	85.71 n = 14 (9.35)	89.19 n = 6.8 m (0.01)	–3.48
Term 7	80.00 n = 5 (17.89)	90.27 n = 2.8 m (0.02)	–10.27
Term 8	100.00 n = 3 (–)	91.21 n = 1.9 m (0.02)	8.79
Overall re-election rate	81.72 n = 886 (1.30)	78.16 n = 318.1 m (0.00)	3.56**

*Notes: ** indicates significance at 5 per cent; *** indicates significance at 1 per cent. Shown beneath each point estimate is the number of observations (n). The number of observations is measured in millions for the simulation. Standard errors are shown in parentheses.*

the way. Therefore, on average, candidates that reach higher terms have high quality and as such have a higher probability of re-election, leading to electoral stagnation.[11] Note that incumbent-quality advantage is quite high even for first-term senators, which results in a 72.61 per cent first-term re-election rate in the simulation. First-term senators who enter office by contesting an open seat are re-elected two thirds of the time, but the first-term senators who enter office by defeating an incumbent are, on average, of exceptionally high quality. Hence their re-election rate is correspondingly higher, bringing up the overall first-term re-election rate.

The simulated overall re-election rate (78.16 per cent) is close to the observed re-election rate in the data (81.72 per cent). However, the difference (3.56 percentage points) is statistically

significant. The benchmark generates lower electoral stagnation compared to the observed data. This is largely driven by the first term. The simulated first-term re-election rate is 7.60 percentage points lower than the observed.

Since the simulation abstracts from all incumbency advantages other than the incumbent-quality effect, it might be tempting to attribute the difference between the observed and simulated re-election rates to incumbency advantage arising from direct and indirect office-holder benefits. However, caution is called for in interpreting the results. One of the dimensions in which the counterfactual setup probably diverts from reality is the term-invariant quality of the incumbent.[12] With experience, senators may get sharper in early terms and then become more and more detached from their constituents over time, cancelling the positive effect of further experience.[13] If in reality incumbent quality increases at a decreasing rate while the simulation assumes term-invariant quality, the re-election rates from the simulation would be too low in early terms. This pattern is consistent with the positive differences in the first two terms in Table 2.[14]

Likewise, by assuming that the distribution of candidate quality is unaffected by challenger/open seat status the simulation abstracts from the scare-off effect. And by assuming that challengers' quality distribution is unaffected by the quality of the incumbent it abstracts from competent-government motivated candidates' lesser desire to replace high-quality incumbents as discussed in Stone et al. (2004) and Adams et al. (2011). Both these effects would lead to higher re-election rates as they result in fewer high-quality challengers. Hence to the degree that experience increases incumbent quality or that incumbents are able to scare off high-quality challengers, attributing all of the difference between the observed and simulated rates in the first two terms (7.60 and 4.31 per cent, respectively) to direct and indirect officeholder benefits may be exaggerating their magnitude.

However, there is also reason to believe that simple attribution of the difference between the simulated and observed re-election rates to officeholder benefits may understate their magnitude. The simulated setup assumes no partisan swings. Jacobson (1989) finds that the effect of national partisan tides on the probability of re-election of congressional incumbents is negative and statistically significant. With an average re-election rate of about 80 per cent, incumbents have more to lose with partisan tides then they have to gain. A partisan swing can increase the average win probability of the incumbents it favours by at most 20 per cent. On the other hand, it can reduce the average win probability of the incumbents who experience a negative swing by up to 80 per cent. The fact that the counterfactual setup assumes no partisan swings makes the re-election rates from the simulation higher than otherwise. Incumbency advantage due to direct and indirect officeholder benefits may be responsible for stagnation by more than the difference between the observed and the simulated re-election rates in Table 2.

The literature exploiting vote margins indicates an increase in incumbency advantage over time.[15] In what follows, we examine re-election rates across time periods. The data is split into two subsamples: the early years from 1946 to 1978, and the later years from 1980 to 2010. The counterfactual setup is calibrated with the dropout rates from each subsample from Table 3. Table 4 reports the results.

In the subsample from 1946 to 1978 the observed re-election rate in the US Senate and the re-election rate generated from the electoral selection simulation are almost identical at around 78 per cent. However, the rates diverge in the 1980–2010 subsample. While the observed re-election rate is about 85 per cent, the simulated rate based on electoral selection

Table 3: Observed dropout rates from the US Senate in two subsamples (in percentiles)

Time period	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9
1946–1978	13.68	19.88	26.47	40.74	28.57	70.00	100.00	–	–
1980–2010	9.95	20.69	35.64	29.63	27.59	35.29	44.44	25.00	100.00

Table 4: Observed and simulated re-election rates in two subsamples

Time period	Observed rate (%)	Simulated rate (%)	Difference (%)
1946–1978	78.29 n = 456 (1.93)	77.75 n = 312.2 m (0.00)	0.54
1980–2010	85.35 n = 430 (1.71)	78.40 n = 322.8 m (0.00)	6.95***

*Notes: *** indicates significance at 1 per cent. The observations are in millions for the simulation. Standard errors are in parentheses.*

is only about 78 per cent. The nearly seven percentage point difference in the later part of the sample may be indicative of an increase in electoral stagnation for reasons other than incumbent-quality advantage. This finding on re-election rates is consistent with the wealth of empirical work based on vote margins that document an increase in incumbency advantage. Growth in the size of government and the rise of television are among the factors cited in the literature that may be driving forces behind an increase in incumbency advantage in the US Congress.[16]

It is also possible that the higher observed re-election rate in the later subsample is due to factors other than an increase in direct and indirect officeholder benefits. For example, growth in partisan polarisation has been identified as a trend in US politics since the 1980s. Lang and Pearson-Merkowitz (2013) claims that in the last two decades parties have increasingly positioned themselves with clear ideological divides on selected issues such as the social safety net, environmental protection and immigration. This allowed the electorate to sort themselves politically in a more consistent fashion which in turn led to geographical polarisation since people live in more or less like-minded communities. As such, Democratic states may have become more Democratic and Republican states may have become more Republican.[17] Incumbents from red and blue states may not face as serious competition from the opposing party as they would in swing states, and incumbents' electoral prospects are favourable in the more polarised states. Our simulated electoral selection model based on candidate quality precludes any effect of party affiliation. If one party had an electoral advantage, candidates

Table 5A: Dropout rate sensitivity analysis around the baseline

Time period	Simulated re-election rates based on observed dropout rates (baseline calibrated simulation)	Simulated re-election rates based on dropout rates 10% higher than observed
1946–2010	78.16	77.55
1946–1978	78.40	77.77
1980–2010	77.75	77.22

Notes: For the time period 1946–2010, the sensitivity analysis dropout rates employed are 1.1 times the observed dropout rates in Table 1. For the time periods 1946–1978 and 1980–2010, the sensitivity analysis dropout rates are 1.1 times the observed dropout rates from the relevant line of Table 3.

from that party would be more likely to be elected in the first place and would have an easier time fighting off challengers. Hence the simulated re-election rate would be higher than in the baseline model. This suggests that polarisation and sorting may be contributing to the seven percentage point re-election rate gap between the simulated and observed re-election rates in the subsample since the 1980s.

Sensitivity of re-election rates to dropout rates

Below we carry out sensitivity analysis to explore the robustness of the results to changes in the dropout rates. Two approaches are taken. First, we examine changes around the observed dropout rates to see whether re-election rates are likely to vary significantly due to changes in the actual dropout rates. Then we examine more dramatic changes in dropout rates to see the range of re-election rates that can be supported by the framework.

First consider modest changes to the dropout rates from the baseline calibrated scenario. The first row in Table 5A reports the dropout rate sensitivity of the simulated re-election rate for the period 1946–2010. The exercise involves increasing the dropout rates by 10 per cent over and above the observed rates for each of the terms. So we multiply the observed dropout rates in Table 1 by 1.1. This yields dropout rates 13.2, 22.28, 34.13, 38.70, 30.80, 52.96, 60.00, 27.50 and 100 per cent for terms 1, 2 and so on. Naturally the simulated re-election rate based on higher dropout rates is lower than the re-election rate employing the observed dropout rates. Higher dropout rates imply that some of the high-quality senators retire at an early term even though they could have won in subsequent elections; the re-election rate goes from 78.16 to 77.55 per cent. Table 5A also reports the dropout rate sensitivity of the simulated re-election rate for the two sub-periods, employing the relevant dropout rates. An increase in the rates by 10 per cent for each term (over and above the observed dropout rates reported in Table 3) leads to a decline in the simulated re-election rates from 78.4 to 77.77 per cent for the early subsample from 1946 to 1980, and from 77.75 to 77.22 per cent for the later subsample from 1980 to 2010. In each case the change in the simulated re-election rate is quite small. This suggests that moderate evolution of senatorial dropout rates over time is unlikely to have significant effects on simulated re-election rates.

Even though small changes in the dropout rates around the rates observed in the Senate have very modest effects on the simulated re-election rates, dropout rates are central to the

Table 5B: Dropout rate sensitivity analysis

Scenario	Simulated re-election rate (%)
1. Baseline calibrated scenario	78.16
2. No dropout (senators live forever)	Converges to 100
3. No dropout until term 9 and term limit of maximum 9 terms	86.58
4. No dropout until term 2 and term limit of maximum 2 terms	69.61

analysis. In order to explore the range of re-election rates that can be generated by electoral selection, we consider more substantial changes to dropout rates. These results are tabulated in Table 5B. Scenario 1 is the baseline simulation from the calibrated model discussed above. Scenerio 2 assumes that incumbents never drop out (which would require that they lived forever). In that case an incumbent is replaced only if he is defeated by a higher quality challenger. The quality score of the incumbent senator at any round of the simulation is weakly higher than the score of all previous incumbents. Hence the simulated re-election rate converges to 100 per cent as the number of rounds goes to infinity. In Scenario 3, we maintain the nine-term limit on senatorial careers but remove interim dropout for terms 1–8, senators of high quality who make it to later terms would always run for re-election. In this scenario, the simulated overall re-election rate increases from the baseline 78.16 per cent to 86.58 per cent. In Scenario 4, senators serve a maximum of two terms in office (the shortest span that allows for a re-election attempt) and first-term senators never drop out. In that case the simulated re-election rate is 69.61 per cent, which is just slightly above the re-election rate of 66 per cent that incumbents who came to office by contesting an open seat have in their first re-election attempt. Challengers who defeat an incumbent are, on average, of very high quality and hence are typically subsequently re-elected. Since in this specification they do not hang around for multiple re-election attempts, they have only a modest effect on the overall re-election rate.

Table 5B suggests that the simulated re-election rates vary depending on the institutional setup. If this methodology were to be applied to different legislatures, simulated rates would respond to their specifications. For instance, in Missouri, both the State House of Representatives and the State Senate have term limits: four two-year terms and two four-year terms, respectively. We would expect to see a higher simulated re-election rate in the Missouri House than in the Senate since high-quality incoming House incumbents are likely to be victorious in subsequent elections. Therefore a higher observed re-election rate in the Missouri House compared to the Missouri Senate does not indicate that the re-election rate is overly high in the House.

In the 1980–2010 time period, the re-election rate in the US House was 94 per cent as opposed to 85 per cent in the US Senate. The intuition gained from the simulation methodology suggests that there is no *a priori* reason to expect the re-election rates to be similar since the House and the Senate have different characteristics; one term in the House lasts only two years as opposed to six years in the Senate. Members of the House can serve a greater number of terms and the increased frequency of elections may lower dropout rates at each term of office. Both of these factors would serve to increase the simulated re-election rate for the

House. In addition, the minimum age requirement for the Senate is 30, while the age requirement for the House of Representatives is 25. This may also lead to higher simulated re-election rates in the House since a high-quality representative would have a longer expected life span in office.[18]

Conclusion

This article has explored one explanation for the repeated electoral success of incumbents in the US Congress: electoral selection based on quality. Incumbents would not have been elected to office if they were not of relatively high quality, and hence they are typically victorious in subsequent elections. We find that electoral selection based on quality alone may be sufficient to explain the observed re-election rates in the US Senate in the early part of our sample from 1946 to 1978. However, electoral selection based on quality alone fails to account for the electoral stagnation with high rates of re-election in the later part of our sample from 1980 to 2010. Since the 1980s, observed electoral stagnation has been higher than what would be anticipated if the only driving force of incumbents' electoral success was candidate quality. We are unable to account for the high re-election rates of the last thirty years using candidate quality alone.

Indeed, if the sole reason for higher re-election rates in the later subsample were due to an increase in incumbent-quality advantage, one would expect to observe an improvement in the public's opinion of the Congress. However, this is not the case. According to Gallup public opinion polls since 1977, people's approval of Congress and of their individual representatives have fallen drastically.[19] In 2013 Gallup polling, only 16 per cent of the voting age population is reported to 'approve' of the US Congress. This approval rate is the lowest in nearly four decades. To the question 'Do you approve or disapprove of the way the representative from your congressional district is handling his or her job?', 41 per cent of the respondents replied 'disapprove' in 2013. The rate of disapproval recorded for the same question was 31 per cent in 1992 and 18 per cent in 1977. One potential explanation for high re-election rates in spite of public disapproval of incumbents may be related to rising incumbency advantage due to officeholder benefits. Voters may find it optimal to vote for the incumbent who is likely to occupy seats in important congressional committees as a senior politician and who has the power to grant political favours, even though in principle they might not approve of the politician for his or her integrity, competence and diligence.

If the gap between the actual re-election rate and the re-election rate generated by candidate quality since 1980 is due to increased officeholder benefits, then the implications of the simulation results are bleak for American politics. Overly high re-election rates may have deleterious effects on social welfare. Even if the challenger is of higher quality, he may have a smaller probability of victory than the incumbent. High-quality candidates with high opportunity cost may be deterred from running for office because of weak electoral prospects. This implies that some sub-optimal (on quality) senators will remain in office. Furthermore, safer seats may induce officeholders to be less responsive to their constituents since they would have little reason to fear defeat.

While simple, the methodology of this article is very different from that of vote margin studies that estimate direct and indirect officeholder electoral benefits. As such, it may provide a robustness check on the results of these studies. The fact that in the later subsample a seven percentage point gap opened up between the actual re-election rate and the re-election rate generated in the framework driven solely by candidate quality is consistent with the estab-

lished finding from vote margin studies that incumbency advantage has increased in the last 30 years. The difference between the observed and simulated re-election rates is driven by observed high first-term re-election rates, which is consistent with estimates of incumbency advantage based on the sophomore surge approach.

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Notes

1 Matland and Studlar (2004) find that the US has the highest re-election rate among the 25 countries covered in the study: 82 per cent from 1946 to 2010.

2 Empirical challenges remain. Using only repeat challengers leads to small sample size, especially in Senate data. In relation to regression discontinuity design studies, Caughey and Sekhon (2011) suggest that despite the fact that bare-winners and bare-losers generate similar electoral support, they differ on pretreatment covariates too drastically to be considered as assigned randomly to treatment and control groups.

3 Stone et al. (2004) also suggest that these personal traits are likely to reflect the voter's concept of 'quality'.

4 Note that this implies that in our framework voters are not forward looking. In Gowrisankaran et al. (2008), even if voters only care about quality, sophisticated voters may vote for a somewhat lower-quality challenger in case they expect the high-quality incumbent not to run in the subsequent election. This is because voters may anticipate future open-seat candidates to be of lower quality than the candidate who is currently challenging the incumbent.

5 In the simulation we work with the quantile of q_i. So rather than drawing an absolute level of quality, we use the fact that $F(q)$ is continuous to find each candidate's position in the c.d.f. with a draw from $U(0,1)$. Because $F(q)$ can be any general continuous distribution we cannot back out the absolute level of quality. But candidates with a higher position in the c.d.f. have strictly higher quality which is sufficient to determine the winner.

6 By making specific assumptions about the distribution of quality, Zaller (1998) is able to analyse the magnitude of the electoral selection effect when non-skill factors, termed 'luck', have different degrees of importance in the electoral process. The cost of permitting any distribution of quality is that we can no longer address this important issue. However, realistic assumptions about the primary process can generate a quite complicated implied distribution of quality and we know very little about the actual distribution of candidate quality. So foregoing specific assumptions about F(q) allows for more robust results.

7 One advantage of Senate rather than House data is the lack of gerrymandering in the Senate.

8 This is with the exception of Alaska, Oregon and Wisconsin, where the governor cannot make interim appointments.

9 This figure includes 98 special elections, 61 of which were contested by appointed senators who ran in the election following their appointment.

10 Note that in our setup defeated candidates do not rerun in future contests. In actuality, of the 886 elections contested by an incumbent, 54 involved repeat challengers. Of these, 19 previously defeated candidates were successful in their later attempt.

11 After n elections since the last open seat, while the seat may have changed hands in the interim elections, the quality of the current incumbent is the $n+2$nd order statistic of $n+2$ draws from F(q). Hence the expected quality of an incumbent is increasing in the number of elections since the last open seat.

12 The assumption on term-invariant candidate quality is often employed in the literature, see e.g. Gelman and King (1990), Levitt (1994) and Levitt and Wolfram (1997).

13 Erikson and Palfrey (1998) provide evidence for increasing vote shares of incumbents in the sophomore year, followed by a modest increase in their junior year. However seniority is neutral on votes in higher terms. Erikson and Palfrey's (1998) findings are consistent with larger officeholder benefits which incumbents enjoy, especially in early terms, due to increased name recognition. But they are also consistent with increasing incumbent quality due to experience.

14 McCurley and Mondak (1995), Stone et al. (2004; 2010) and Stone and Simas (2010) make use of expert informants and of the *Almanac of American Politics* to score candidate quality. However, measures of changes in incumbent quality across terms in office have been more elusive. Hence it is difficult to differentiate between the term-variant quality and the early officeholder benefit explanations for the rise in the vote margins in early terms.

15 See e.g. Hirano and Snyder (2009); Gelman and Huang (2008); Levitt and Wolfram (1997); Gelman and King (1990).

16 The number of television channels have been increasing rapidly since 1952 and Garrett and Rhine (2006) shows that government has been increasing in size since the early twentieth century. Fiorina (1989) argues that the larger the government, the greater are direct officeholder benefits such as administrative office resources and improved ability to raise campaign funds from interest groups. Prior (2006) claims that television gives incumbents free coverage throughout their term and improves name recognition. Increase in direct officeholder benefits can lead to challenger scare-off, indirectly increasing incumbency advantage. Levitt and Wolfram (1997) show that reduction in the relative quality of challengers since the 1960s appears to be a major contributor to the rise in incumbency advantage.

17 A variety of causes of political polarisation have been identified, including pressures related to campaign fundraising and more polarised pundit coverage on television in the last three decades. See Kaiser (2010) for fundraising, and Hollander (2008) and Hetherington (2009) for television coverage.

18 The main difficulty with applying the methodology to the US House of Representatives is related to gerrymandering. As pointed out by Gowrisankaran et al. (2008), it is unclear how to treat elections involving two incumbents running against each other following redistricting in the US House. Mann and Wolfinger (1980) argue that the Senate also differs from the House in terms of the media coverage received and the level of public interest. Hence Ashworth and Bueno de Mesquita (2008) point out that there is a higher likelihood of the voter correctly identifying the higher quality candidate in Senate races.

19 See http://www.gallup.com/poll/165809/congressional-approval-sinks-record-low.aspx

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