

Supporting Information

The supporting information is organized into seven sections.

- 1. Polya distribution.** The first and most important section is the information about the Polya-Eggenberger distribution. It provides details about how the distribution characterizes the top-level attachment frequencies in the bipartite preferential attachment model. It also provides a proof that the distribution is decreasing whenever each candidate starts with one donor and there are more donors than candidates (as assumed in the paper).
- 2. Contribution Amounts.** This section discusses the relationship between the number of donors and contribution amounts. There are three main findings: one is that candidate-level factors account for little of the variation in contribution amounts, two is that there is an extremely strong correlation between a the total amount raised by a candidate and the number of donors, and three is that a simulation which assumes purely random amounts closely matches the observed monetary totals.
- 3. Simulations.** This section shows graphs of the simulations from the preferential attachment model similar to Figure 2. The simulations are used to test the second hypothesis and the graphs visually depict the correspondence between the simulated and observed contributions.
- 4. Histograms.** This section shows histograms for all seventy-eight chambers similar to that presented in Figure 1.
- 5. Full coefficient tables.** Due to the enormous number of estimates from the conditional logit models, the tables were not included in the main text. This section reports all coefficient estimates and standard errors for the chambers.
- 6. Correlations and confidence bounds.** This section reports results from Monte Carlo simulation used to calculate confidence bounds on the correlation between the predicted probabilities and prior donor share (shown Tables 1 and 2 in the main text). The intervals are relatively narrow reflecting the large sample sizes.
- 7. Analysis of static factors and donor shares.** This section reports the results mentioned in the summary which demonstrate that the static factors provide a better model fit for early donor shares rather than late donor shares providing initial support for the possibility that the static factors help to explain the origins of inequities across candidates which then expand throughout the campaign due to the preferential attachment process.

1. Polya-Eggenberger distribution

The logic of the preferential attachment model of campaign contributions is identical to that of the BA preferential attachment model, except applied to bipartite attachments between donors and candidates (rather than a single type of individual). The most important implication of this bipartite model is that the distribution of attachment frequencies (for the candidates) will not be a power law distribution (as would be the case with the BA model) but rather a Polya-Eggenberger distribution.

The Polya-Eggenberger distribution is motivated by the Polya urn scheme (Johnson, Kemp, and Kotz 2005, Mahmoud 2009). The Polya urn is posited to initially contain a certain number of white balls (w) and a certain number of red balls (r). A ball is drawn from the urn and then replaced with itself and another ball of the same color (i.e. process is contagious). This process is repeated n times. The Polya-Eggenberger distribution provides the probability that there are x red balls in the urn following n draws. The distribution is

$$\text{Prob}(X = x) = \binom{n}{x} \frac{(r)_x (w)_{n-x}}{(r+w)_n}$$

where r is the initial number of red balls, w is the initial number of white balls, and $(a)_n$ is the Pochhammer symbol

$$(a)_n = a(a+1)(a+2) \dots (a+n-1).$$

The Polya urn scheme is analogous to the preferential attachment model of contributions to state legislative candidates. Consider a state legislative candidate that is one of 150 total candidates. This is conceptually similar to a Polya urn with one ball containing the candidate's name and 149 balls containing the name of some other candidate. As each donor chooses a candidate in sequence, they alter the candidate's share of the total number of donors (either the

donor adds an additional ball for that candidate, or adds a ball for some other candidate). The probability that a candidate has x donors after n total donors have entered the system thus follows a Polya-Eggenberger distribution.

The Polya-Eggenberger distribution is decreasing under the conditions given by the preferential attachment model, which means if X represents the number of donors to a candidate, the probability that $X=x$ decreases as x increases. This produces a right-skewed distribution which is consistent with disparities in the number of donors across candidates (i.e. the second hypothesis). To demonstrate that the Polya-Eggenberger distribution is decreasing, consider an election where candidate A starts with one donor ($a=1$), and there are B other candidates, each starting with one donor ($b > a$). The distribution is thus:

$$f(x) = \frac{n!}{x!(n-x)!} \frac{a(a+1) \dots (a+x-1)b(b+1) \dots (b+n-x-1)}{(a+b)(a+b+1) \dots (a+b+n-1)}$$

$$= \frac{a(a+1) \dots (a+x-1)}{x!} * \frac{b(b+1) \dots (b+n-x-1)}{(n-x)!}$$

$$* \frac{n!}{(a+b)(a+b+1) \dots (a+b+n-1)}$$

Since $a=1$, the first term goes to 1, and the second term can be simplified to:

$$\frac{(n-x+1)(n-x+2) \dots (b+n-x-1)}{(b-1)!} * C$$

Where C represent the last term, as it does not depend on x . To show that the discrete distribution is decreasing, we will show that $f(x) > f(x+1)$.

$$\frac{(n-x+1)(n-x+2) \dots (b+n-x-1)}{(b-1)!} * C > \frac{(n-x)(n-x+1) \dots (b+n-x-2)}{(b-1)!} * C$$

This can be simplified to

$$b+n-x-1 > n-x$$

which is true whenever $b > a = 1$ as posited by the model. To show the distribution visually, the following graph depicts the probabilities that a candidate has 1 to 500 donors (x), assuming there are 2-100 other candidates (b) and 5000 total donors (n).

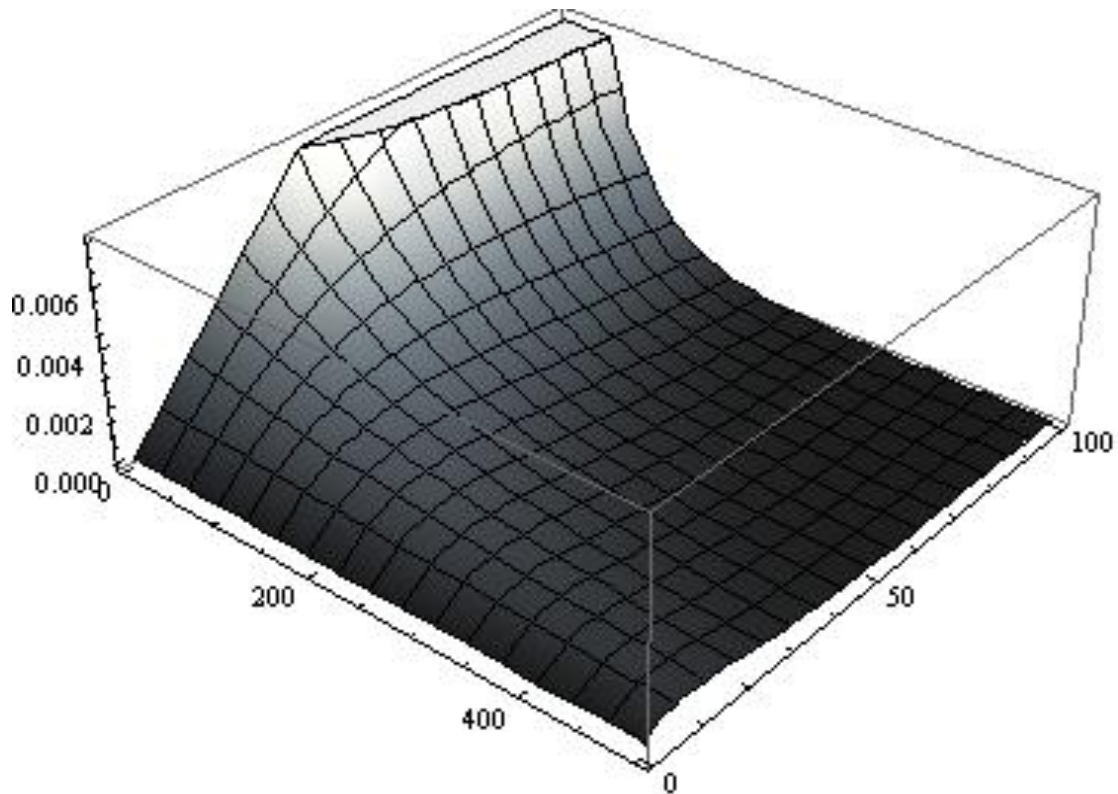


Figure A3: Polya-Eggenberger distribution with $n=5000$, b ranging from 2-100, and x ranging from 1 to 500.

2. Contribution amounts

By conceptualizing contributions as an attachment between a donor and candidate it would be possible to model attachments with different weights to reflect different amounts of money. The total amount of money raised by a candidate would thus be the sum of all weighted attachments. This study considers a model of unweighted attachments which could be extended to weighted attachments in future research. One might object that a model of unweighted attachments would be highly misleading. If we only look at the number of donors (i.e. unweighted attachments) rather than the total amount of money raised we could significantly mischaracterize the nature of campaign finance. For example, leading state legislative candidates might deliberately cultivate a small population of very well-heeled donors who could provide large contributions, so the candidate would raise a lot of money but with a very small donor pool (and one that is potentially easier to maintain). On the other hand, some candidates might not have access to affluent donors and would instead need to build a large base of support among smaller donors which might take more time and effort and still produce less campaign money. If true, the relationship between the total amount of money raised and the number of donors could actually be negative! According to this objection, weighted attachments would be crucial to identify which candidates had a fundraising advantage over others.

While this concern initially seems plausible, there is no evidence that this occurs on a regular basis. As discussed below, we analyze data on contributions to state legislative candidates in 2008 obtained from the National Institute for Money in State Politics. We calculated the correlation between the number of donors to a candidate and the total amount of money the candidate raised. The correlation was positive in every chamber, and the median

correlation was 0.889 for lower chambers and 0.920 for upper chambers.¹ Thus knowing the number of donors to a campaign is a very strong indicator of the total amount the candidate will raise. Furthermore, this study focuses on candidate-level traits, specifically their share of the existing donor pool. Yet previous research suggests that the most important predictors of contribution amounts are donor-level factors such as income (Brady, Verba, and Schlozman 1995). While different attachment weights would be an important extension of the current model, the unweighted version is much more parsimonious and seeks to explain the number of donors to a campaign, which is strongly related to total campaign money.²

So prior research has found that contribution amounts are primarily a function of donor-level factors such as personal wealth and not candidate-level factors examined in this study (Brady, Verba, and Schlozman 1995), perhaps candidate-level factors are important predictors in this particular context. This section of the supporting information considers two sets of results that support prior research, finding that candidate-level factors account for little variation in contribution amounts and that a simulation of the preferential attachment model which assumes purely random attachment weights closely matches the observed contribution totals.

We first estimate regression models with the independent variables from the main body of the paper and contribution amounts as the dependent variable. The full complement of independent variables including prior donor shares has relatively little explanatory power. Across all states, the mean R^2 for is just 0.039 for the lower house and 0.048 for the upper house, suggesting that only a small fraction of the observed variance in contribution amounts is

¹ There were also 14 states that allowed unlimited contributions to state legislative candidates. Candidates could really amass huge war chests with few donors in these states. Yet even in these states, the correlation between the number of donors and the total amount raised was very high (0.79 for lower chambers and 0.80 for upper chambers).

² The supporting information includes additional information about contribution amounts which confirms the relatively weak relationship between contribution amounts and candidate factors.

explained by the candidate's previous donor share (and all of the other factors described above). We also conducted simulations in which contributions were made according to the preferential attachment model, but the contribution amounts were purely random. That is, once the donor chose the candidate, the contribution amount was determined without any regard for the candidate, their existing donors, or how much previous revenue the candidate had raised. The simulation results are shown in the following figure. As shown in Figure A4, the preferential attachment model with purely random contribution amounts very closely matches the observed distribution of campaign money. There is also a close correspondence between the simulated and observed inequities (median Gini coefficient for the simulation of the lower house was 0.656 compared to the observed value of 0.693 and the median simulation for the upper house was 0.663 and 0.698 observed).

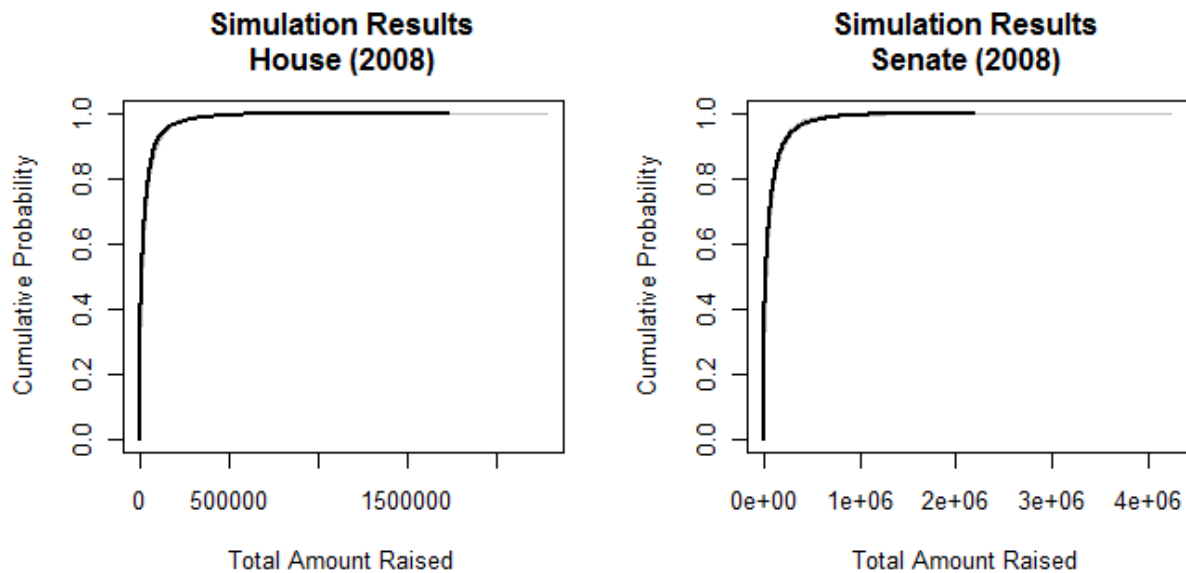


Figure A4: Simulations of contribution amounts The light gray lines show the simulations and the dark bold line shows the observed contributions.

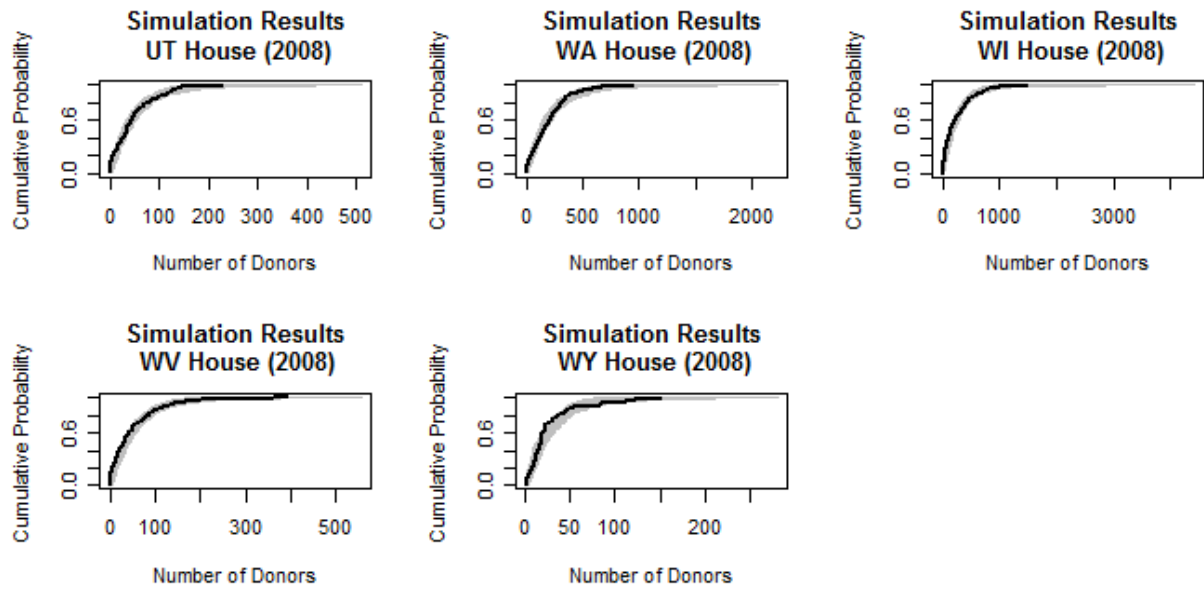


Figure: Graphs from the simulations of lower chambers. The light gray lines are from the simulations, the dark bold line is the observed cumulative distribution.

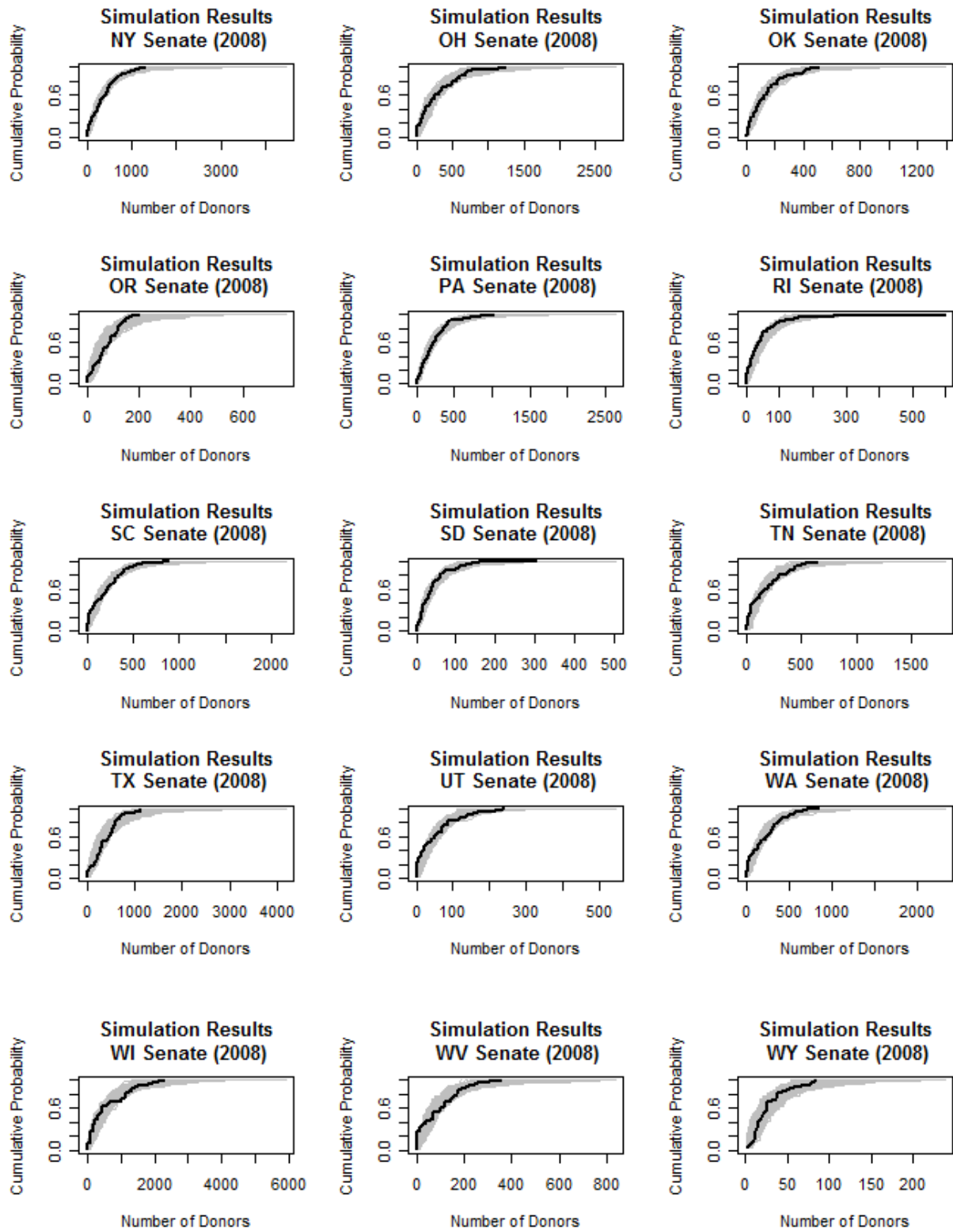
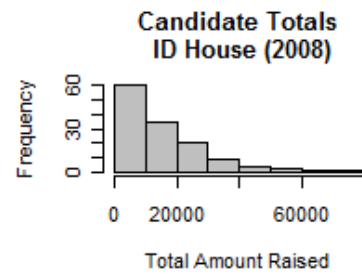
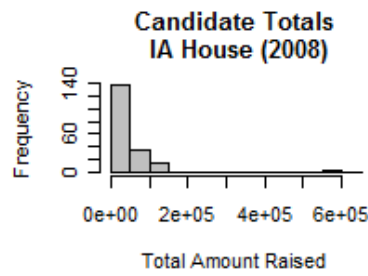
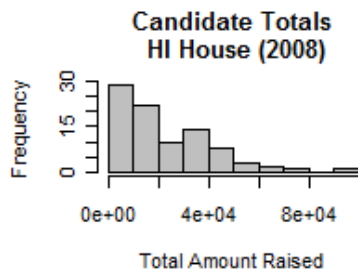
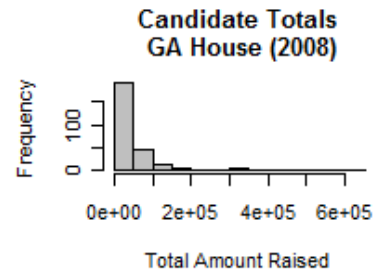
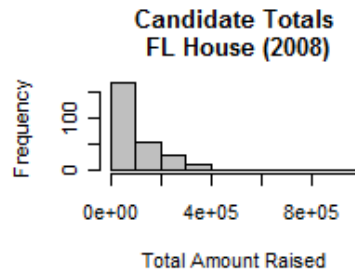
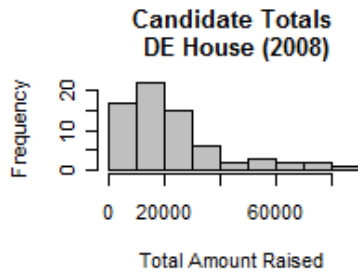
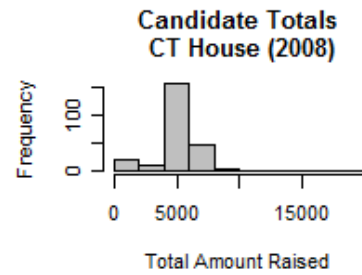
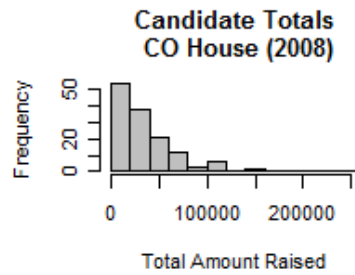
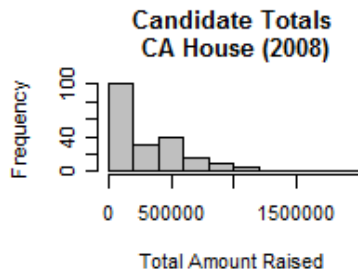
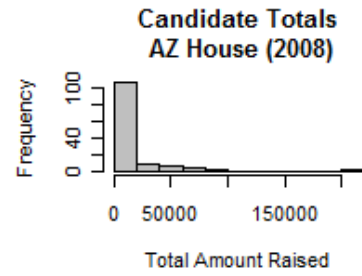
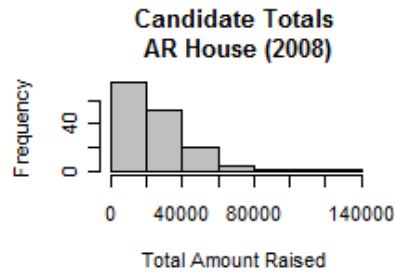
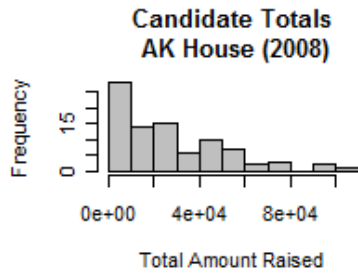
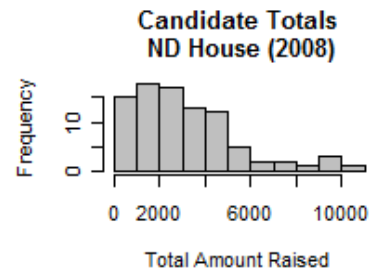
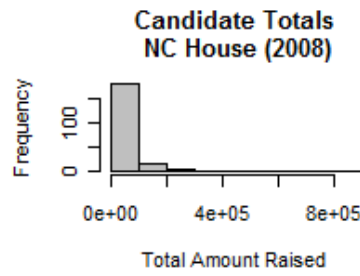
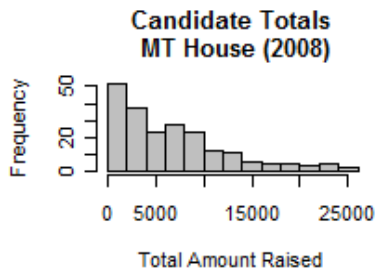
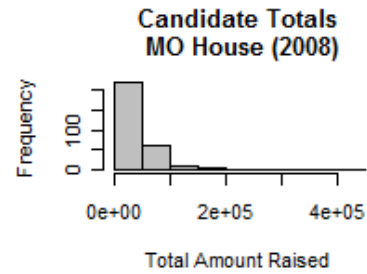
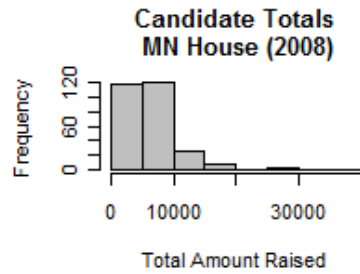
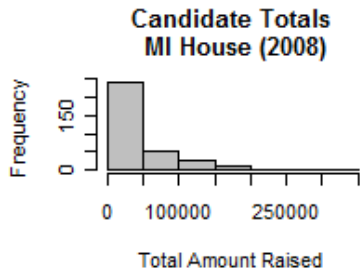
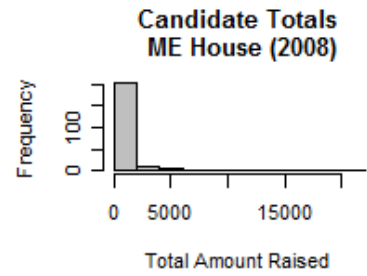
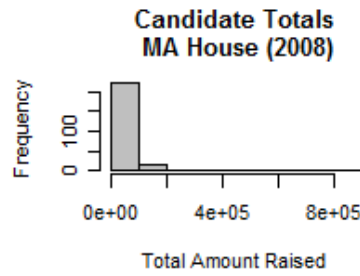
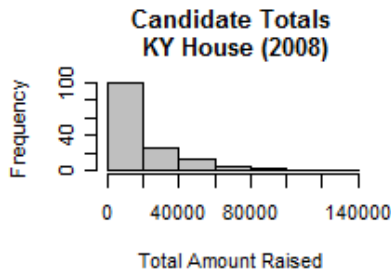
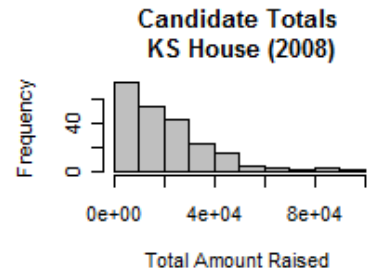
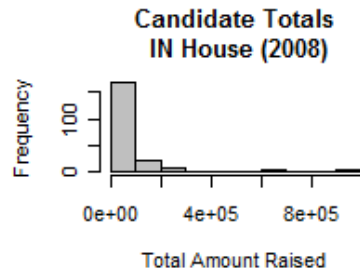
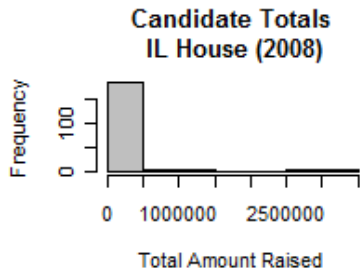
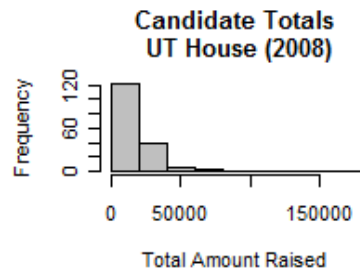
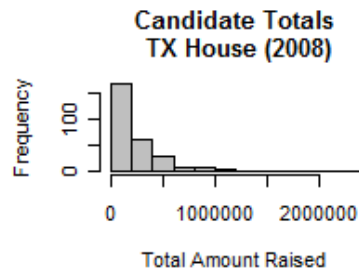
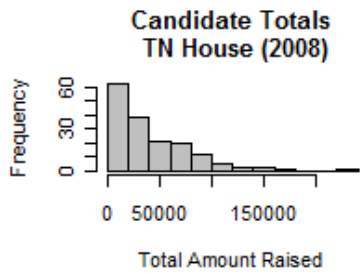
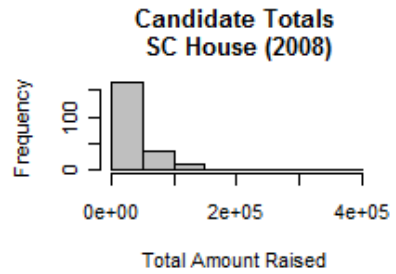
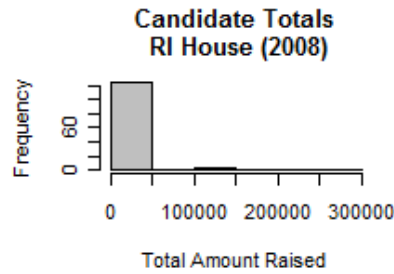
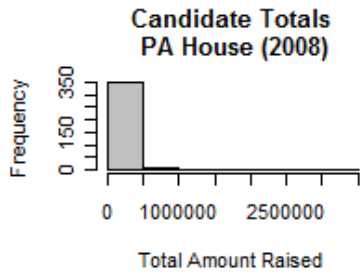
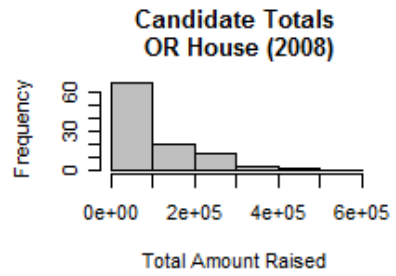
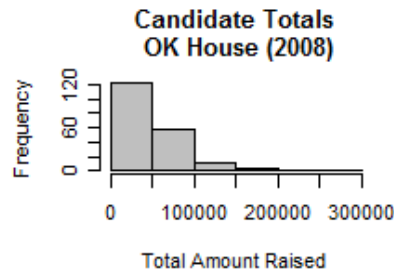
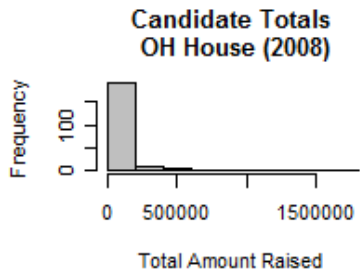
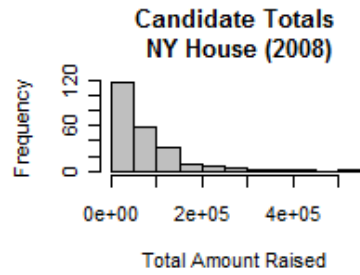
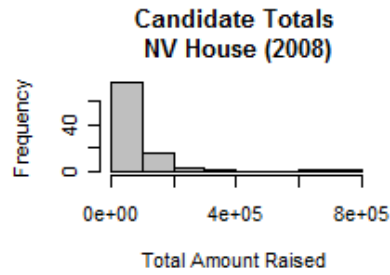
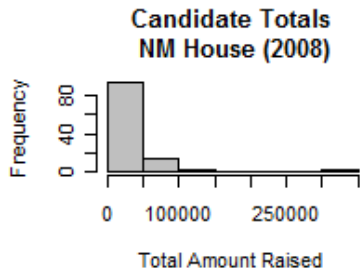


Figure: Graphs from the simulations of upper chambers. The light gray lines are from the simulations, the dark bold line is the observed cumulative distribution.

4. Histograms







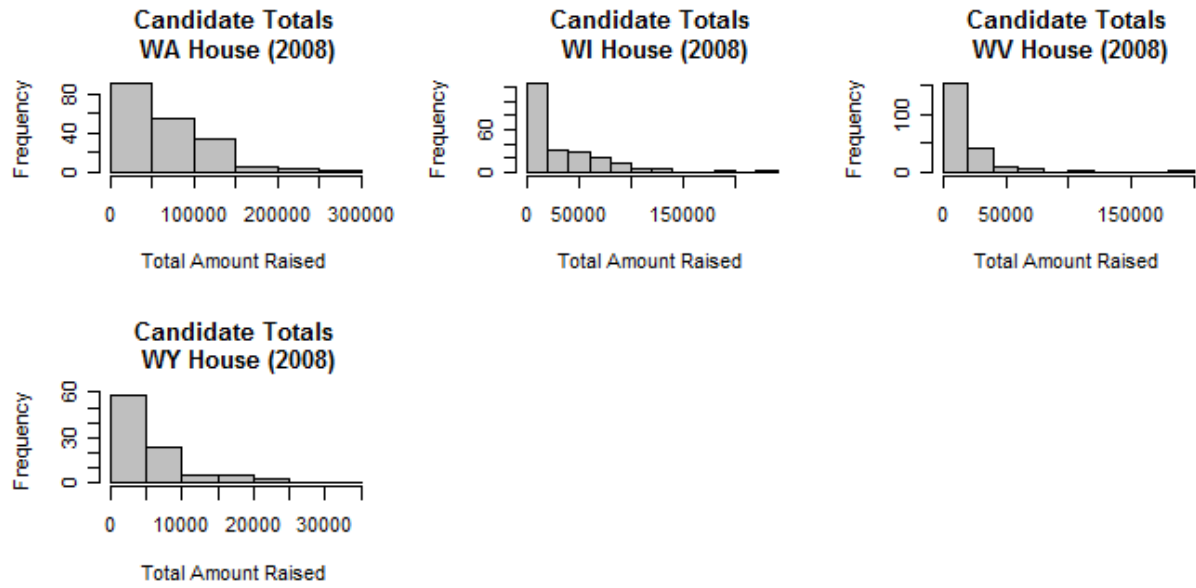
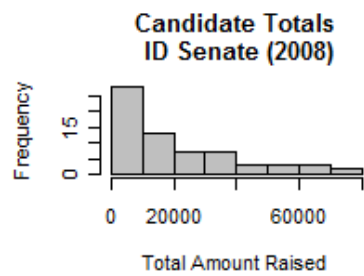
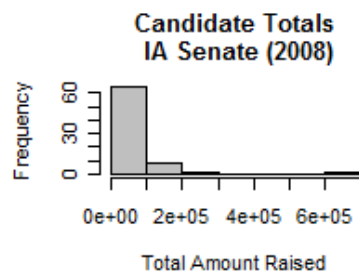
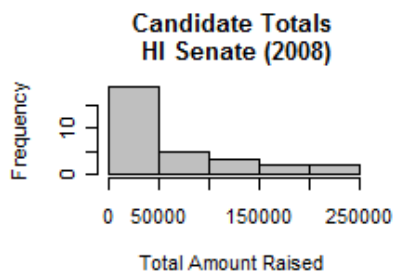
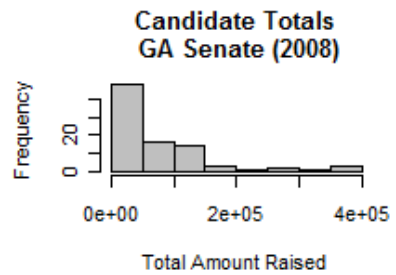
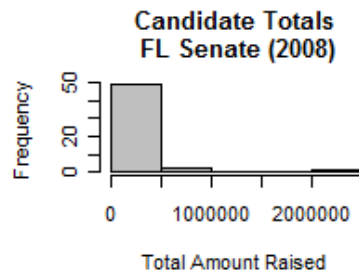
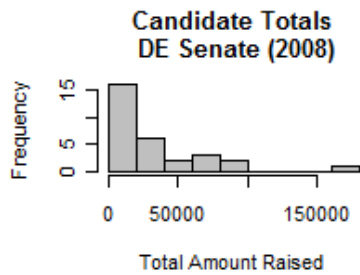
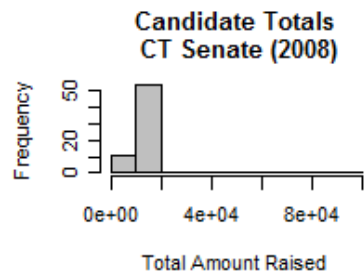
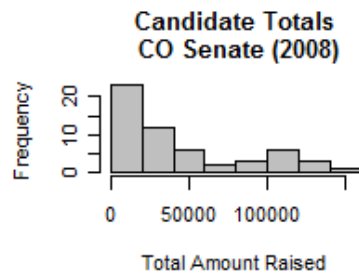
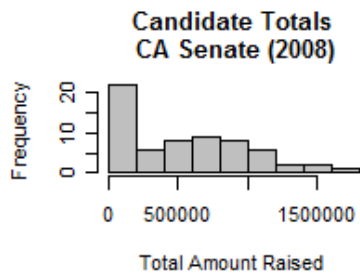
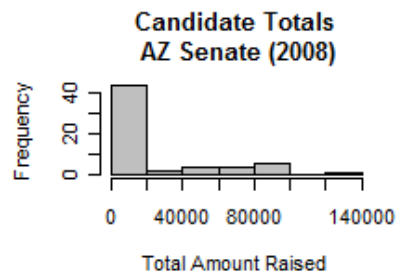
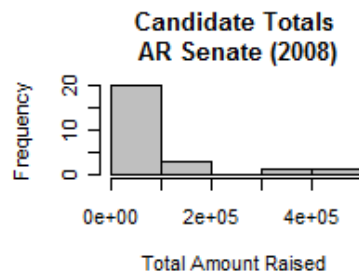
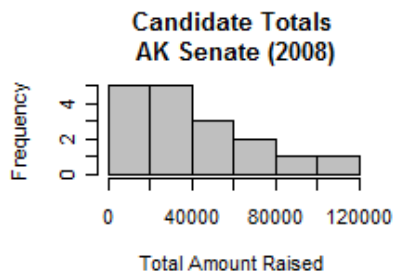
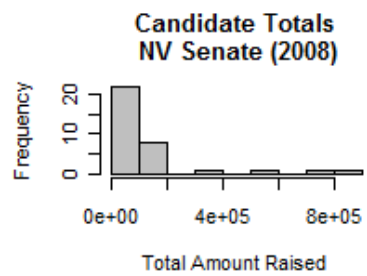
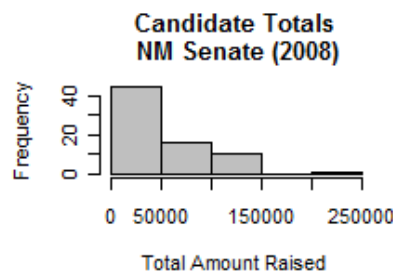
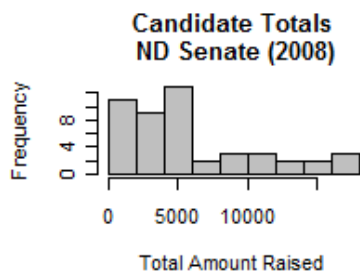
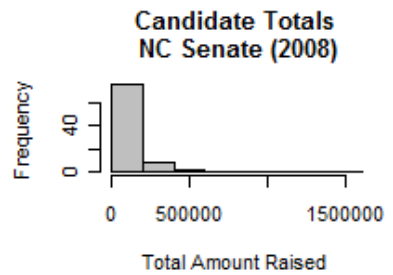
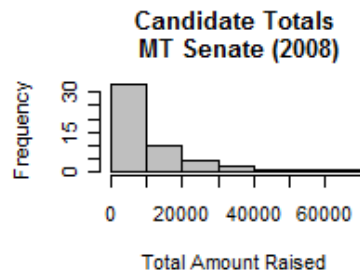
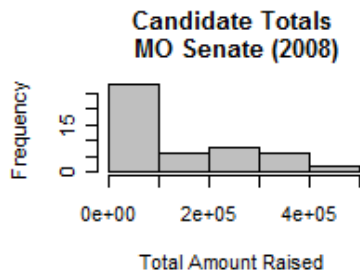
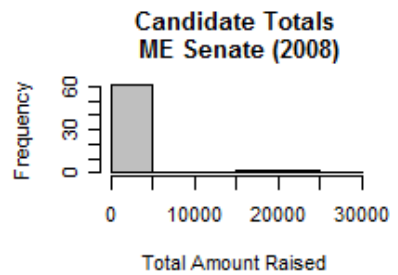
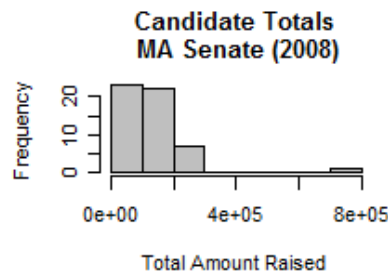
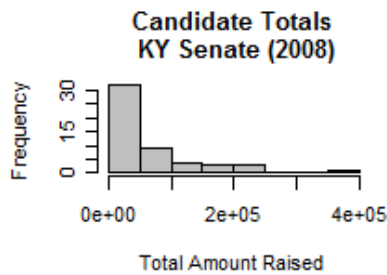
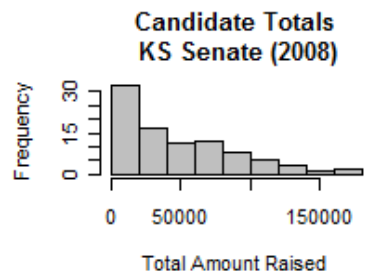
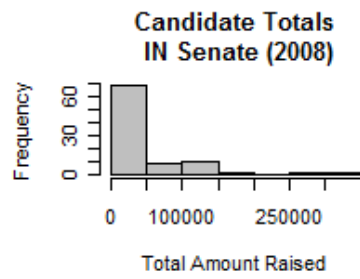
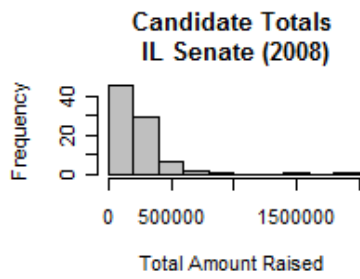
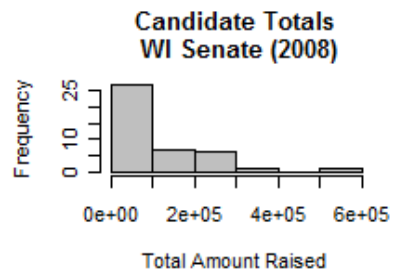
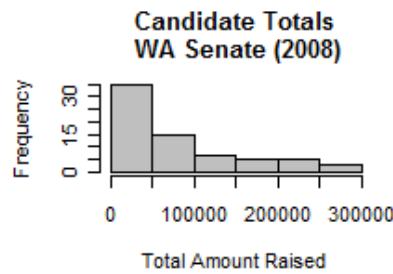
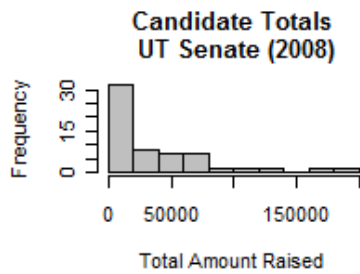
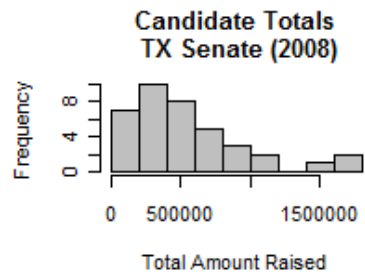
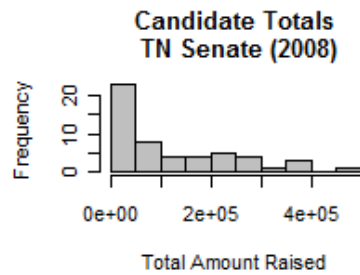
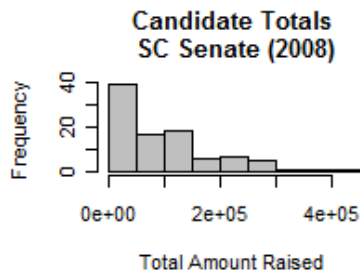
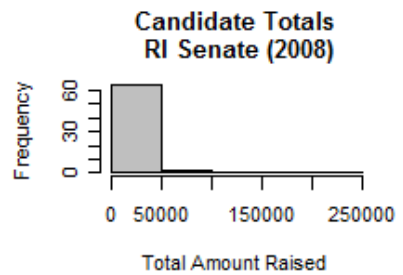
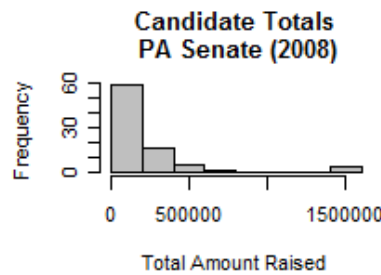
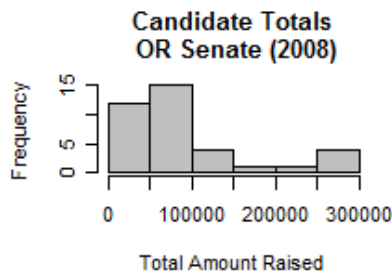
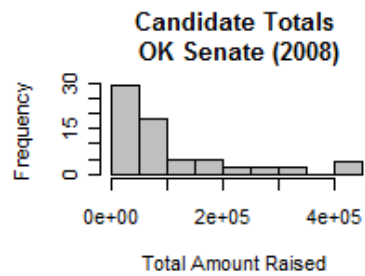
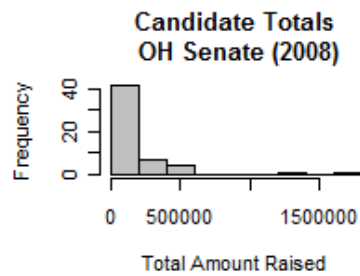
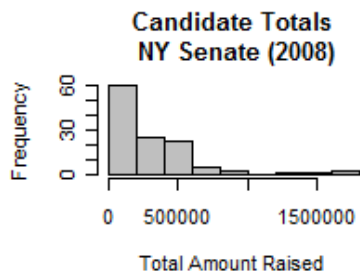


Figure: Histograms of the total amount raised by candidates to lower chambers







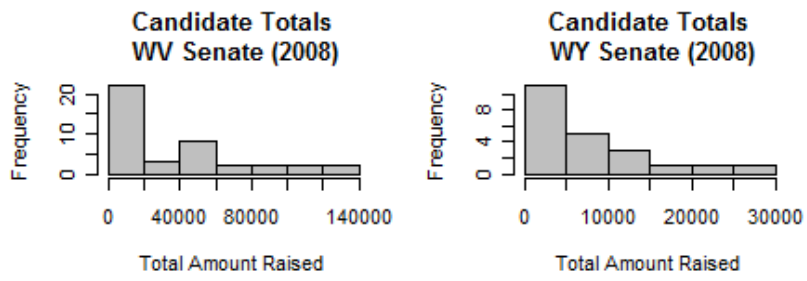


Figure: Histograms of the total amount raised by candidates to upper chambers

5. Full coefficient tables

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
AK	10.283*** (0.229)	6.056*** (0.3)	0.786*** (0.028)	0.209*** (0.035)	-0.419*** (0.022)	-0.805*** (0.043)	0.143*** (0.03)	0.202*** (0.057)
AR	25.818*** (0.371)	7.501*** (0.655)	-0.057 (0.056)	0.204*** (0.054)	-0.176*** (0.023)	-0.243*** (0.03)	0.086** (0.032)	-0.251 (0.152)
AZ	20.560*** (0.31)	-3.749*** (0.683)	0.017 (0.043)	0.567*** (0.039)	0.307*** (0.034)	1.208*** (0.073)	0.249*** (0.039)	-0.674*** (0.059)
CA	36.059*** (0.366)	-5.336*** (0.846)	1.554*** (0.129)	1.762*** (0.129)	0.096*** (0.011)	0.007 (0.042)	-0.206*** (0.018)	0.226*** (0.027)
CO	39.475*** (0.399)	8.565*** (0.632)	-0.062* (0.025)	-0.083*** (0.022)	0.201*** (0.014)	-0.424*** (0.035)	0.164*** (0.022)	-0.116 (0.09)
CT	20.066*** (0.437)	4.816*** (1.364)	-0.201*** (0.022)	-0.012 (0.023)	0.179*** (0.018)	-0.008 (0.027)	0.145*** (0.024)	-0.212** (0.073)
DE	30.081*** (0.6)	6.342*** (0.825)	0.335*** (0.048)	0.698*** (0.065)	0.048 (0.03)	0.288*** (0.063)	0.049 (0.041)	-0.329*** (0.062)
FL	20.947*** (0.277)	13.386*** (0.407)	0.124*** (0.019)	0.248*** (0.019)	0.185*** (0.01)	-0.358*** (0.015)	0.587*** (0.012)	†
GA	17.411*** (0.363)	79.195*** (4.544)	0.946*** (0.054)	1.144*** (0.065)	0.042 (0.025)	-0.091 (0.048)	-0.085*** (0.022)	0.275*** (0.037)
HI	34.525*** (0.649)	2.743 (1.568)	0.067 (0.068)	0.303*** (0.065)	-0.439*** (0.043)	0.692*** (0.096)	0.051 (0.043)	0.318*** (0.078)
IA	37.738*** (0.542)	14.324*** (1.244)	0.245*** (0.023)	0.226*** (0.025)	-0.143*** (0.014)	-0.252*** (0.032)	0.077*** (0.017)	-0.418*** (0.035)
ID	27.927*** (0.772)	4.179*** (1.075)	0.223*** (0.035)	0.248*** (0.043)	-0.312*** (0.028)	-0.230*** (0.051)	-0.03 (0.039)	-0.092 (0.072)
IL	47.395*** (0.722)	2.257 (2.387)	0.104** (0.038)	0.033 (0.044)	-0.001 (0.017)	-0.162*** (0.037)	0.111*** (0.021)	0.293*** (0.03)

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
IN	35.493*** (0.552)	2.867 (2.086)	0.190*** (0.034)	0.434*** (0.037)	-0.061** (0.019)	-0.224*** (0.049)	-0.046 (0.024)	0.255*** (0.034)
KS	35.648*** (0.651)	5.617* (2.166)	-0.229*** (0.032)	-0.383*** (0.044)	0.106*** (0.019)	0.052 (0.051)	-0.126*** (0.029)	0.243*** (0.044)
KY	18.038*** (0.349)	13.219*** (1.09)	-0.057 (0.036)	-0.186*** (0.042)	-0.041 (0.026)	-0.599*** (0.055)	0.059 (0.033)	-1.277*** (0.11)
MA	28.703*** (0.263)	†	0.594*** (0.033)	0.404*** (0.038)	-0.131*** (0.018)	0.637*** (0.03)	0.108*** (0.014)	-0.256*** (0.025)
ME	24.721*** (0.738)	-11.203 (6.738)	0.636*** (0.111)	0.043 (0.112)	-0.897*** (0.126)	0.504 (0.34)	0.273 (0.145)	0.266 (0.225)
MI	41.411*** (0.407)	10.225*** (1.079)	0.098*** (0.028)	0.340*** (0.024)	0.131*** (0.011)	-1.317*** (0.05)	0.032 (0.021)	0.684*** (0.05)
MN	67.039*** (1.288)	27.753*** (3.068)	0.033 (0.042)	0.297*** (0.052)	-0.183*** (0.031)	-0.220* (0.094)	0.101* (0.041)	0.274* (0.108)
MO	31.422*** (0.505)	18.798*** (1.002)	-0.230*** (0.027)	-0.046 (0.025)	-0.195*** (0.014)	0.118*** (0.033)	0.120*** (0.018)	‡
MT	21.946*** (0.56)	8.238*** (2.322)	0.339*** (0.083)	-0.138 (0.081)	-0.075 (0.052)	-2.223*** (0.182)	0.418*** (0.073)	-1.037** (0.384)
NC	33.169*** (0.531)	6.326** (1.842)	-0.131** (0.049)	0.088 (0.045)	0.131*** (0.029)	-0.422*** (0.051)	0.274*** (0.042)	0.191*** (0.04)
ND	48.810*** (3.184)	-1.545 (3.661)	0.105 (0.119)	‡	-0.113 (0.096)	0.749** (0.259)	0.078 (0.125)	0.355 (0.297)
NM	22.192*** (0.416)	11.579*** (0.941)	0.425*** (0.038)	0.540*** (0.05)	0.120*** (0.026)	0.088 (0.049)	0.078** (0.03)	-0.559*** (0.076)
NV	17.255*** (0.393)	0.222 (0.956)	1.028*** (0.051)	1.056*** (0.051)	0.247*** (0.032)	0.399*** (0.079)	0.090** (0.034)	0.280*** (0.047)
NY	43.640*** (0.519)	2.059 (2.189)	-0.036 (0.03)	-0.536*** (0.059)	0.075*** (0.018)	-0.184*** (0.034)	†	-0.254*** (0.034)

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
OH	45.953*** (0.379)	4.974*** (0.8)	-0.050* (0.021)	0.038 (0.02)	-0.045*** (0.011)	-0.411*** (0.036)	0.166*** (0.015)	†
OK	44.514*** (0.65)	39.456*** (2.468)	0.213*** (0.042)	0.393*** (0.038)	0.087*** (0.018)	-0.057 (0.033)	0.098** (0.029)	-0.245** (0.072)
OR	23.753*** (0.611)	10.557*** (0.954)	0.853*** (0.042)	0.559*** (0.04)	0.053* (0.022)	-0.423*** (0.069)	0.159*** (0.031)	-0.087 (0.076)
PA	19.288*** (0.201)	19.129*** (0.839)	0.683*** (0.026)	0.400*** (0.027)	0.072*** (0.014)	0.196*** (0.044)	-0.084*** (0.016)	0.353*** (0.03)
RI	6.494*** (0.173)	34.782*** (3.862)	0.872*** (0.073)	0.301*** (0.075)	0.251*** (0.046)	-0.051 (0.069)	†	0.584*** (0.059)
SC	27.620*** (0.552)	2.112 (1.524)	-0.126*** (0.03)	0.417*** (0.029)	-0.070*** (0.02)	-0.431*** (0.04)	0.114*** (0.029)	0.145** (0.055)
TN	19.624*** (0.318)	35.656*** (1.837)	0.724*** (0.041)	0.525*** (0.039)	-0.049* (0.019)	-0.196*** (0.049)	-0.142*** (0.026)	0.460*** (0.046)
TX	42.450*** (0.467)	6.952*** (0.414)	0.056*** (0.014)	0.028 (0.019)	-0.041*** (0.01)	-0.416*** (0.024)	0.044** (0.014)	0.454*** (0.031)
UT	40.648*** (0.855)	8.241*** (1.519)	0.159* (0.066)	0.015 (0.042)	-0.300*** (0.028)	0.252*** (0.066)	-0.114 (0.058)	0.025 (0.069)
WA	23.321*** (0.4)	9.574*** (0.506)	-0.127*** (0.018)	0.151*** (0.019)	0.098*** (0.012)	-0.113*** (0.03)	†	0.008 (0.036)
WI	30.237*** (0.301)	11.372*** (0.59)	0.424*** (0.015)	0.444*** (0.016)	-0.195*** (0.01)	-0.863*** (0.024)	-0.028 (0.029)	-0.118** (0.037)
WV	20.598*** (0.339)	3.724*** (0.576)	0.044 (0.028)	-0.185** (0.062)	0.108** (0.035)	-0.374*** (0.068)	-0.072* (0.029)	0.273*** (0.057)
WY	16.112*** (0.409)	2.215* (1.049)	0.629*** (0.067)	0.077 (0.067)	0.04 (0.052)	-0.151 (0.081)	-0.477*** (0.083)	0.753*** (0.117)

Table: This table shows full coefficient estimates from the conditional logit models for the lower chambers. Standard errors are shown in parentheses. Significance levels are indicated as * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed. † indicates missing data (mostly elections in which no legislative leaders were running, some data that could not be obtained such as Rhode Island's committees), ‡ indicates that the variable was dropped due to collinearity.

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
AK	13.516*** (0.499)	9.944*** (0.558)	0.149 (0.142)	0.165 (0.104)	-0.713*** (0.09)	-0.077 (0.228)	0.559*** (0.107)	‡
AR	10.288*** (0.188)	1.218** (0.36)	-0.883*** (0.07)	-0.733*** (0.061)	0.400*** (0.054)	-0.468*** (0.08)	0.234*** (0.064)	†
AZ	16.582*** (0.351)	2.532*** (0.586)	0.149** (0.057)	0.479*** (0.05)	0.902*** (0.047)	0.622*** (0.092)	-0.328*** (0.041)	0.461*** (0.061)
CA	21.796*** (0.341)	0.699 (0.396)	-0.296*** (0.03)	-0.089** (0.027)	0.321*** (0.015)	-1.235*** (0.063)	-0.161*** (0.022)	†
CO	16.021*** (0.27)	6.608*** (0.412)	-0.097** (0.036)	-0.074* (0.032)	0.273*** (0.021)	-0.242*** (0.067)	-0.581*** (0.056)	†
CT	12.307*** (0.179)	-4.282*** (0.449)	-0.175*** (0.023)	-0.087*** (0.025)	-0.083*** (0.015)	-0.233*** (0.033)	0.153*** (0.019)	-0.008 (0.04)
DE	10.905*** (0.241)	3.607*** (0.408)	-0.218* (0.103)	0.282** (0.084)	-0.287*** (0.057)	0.278** (0.091)	0.031 (0.071)	0.064 (0.123)
FL	7.588*** (0.065)	3.188*** (0.244)	1.052*** (0.077)	1.443*** (0.056)	0.03 (0.017)	0.217*** (0.03)	0.443*** (0.047)	†
GA	16.635*** (0.403)	55.424*** (4.934)	0.245* (0.099)	-0.269* (0.114)	0.028 (0.033)	0.056 (0.074)	0.02 (0.031)	-0.175** (0.058)
HI	18.832*** (0.555)	7.131*** (0.8)	0.007 (0.074)	-0.236** (0.083)	0.483*** (0.094)	-0.807*** (0.097)	0.039 (0.052)	-0.019 (0.063)
IA	14.833*** (0.302)	3.458*** (0.824)	-0.152** (0.048)	0.229*** (0.037)	-0.154*** (0.024)	-0.573*** (0.064)	0.143*** (0.036)	0.192*** (0.039)
ID	14.015*** (0.455)	3.601*** (0.962)	0.303*** (0.059)	0.097 (0.061)	-0.335*** (0.04)	-0.145* (0.073)	0.125** (0.045)	-0.024 (0.073)
IL	15.656*** (0.284)	1.472 (3.859)	1.115*** (0.07)	0.968*** (0.07)	0.014 (0.018)	0.577*** (0.044)	0.058** (0.019)	0.278*** (0.03)
IN	25.913*** (0.664)	4.979** (1.469)	0.761*** (0.125)	1.314*** (0.12)	0.173*** (0.045)	-0.248** (0.075)	0.164*** (0.04)	0.203*** (0.053)

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
KS	14.411*** (0.314)	7.552*** (0.872)	0.462*** (0.036)	0.173*** (0.037)	0.177*** (0.024)	-0.217** (0.072)	-0.059* (0.025)	0.024 (0.039)
KY	11.332*** (0.196)	0.878* (0.421)	0.076 (0.042)	0.052 (0.04)	-0.529*** (0.029)	-0.337*** (0.043)	-0.121** (0.037)	†
MA	19.574*** (0.193)	†	-0.549*** (0.024)	-0.367*** (0.026)	0.061** (0.019)	0.133*** (0.031)	-0.088*** (0.015)	-0.135*** (0.021)
ME	10.723*** (0.39)	-0.999 (1.594)	0.333** (0.109)	0.04 (0.114)	-0.716*** (0.07)	3.503*** (0.437)	-0.829*** (0.22)	0.436 (0.353)
MO	23.404*** (0.32)	-2.572*** (0.561)	-0.514*** (0.052)	-0.001 (0.044)	-0.062** (0.021)	-0.369*** (0.083)	0.100*** (0.028)	†
MT	5.972*** (0.339)	-0.599 (0.954)	2.209*** (0.525)	1.799*** (0.505)	-0.406** (0.14)	-0.262 (0.303)	-0.336 (0.334)	0.21 (0.405)
NC	15.910*** (0.256)	1.864*** (0.472)	0.124* (0.057)	0.193*** (0.038)	0.283*** (0.024)	-0.455*** (0.044)	0.064 (0.047)	0.257*** (0.04)
ND	16.015*** (1.148)	-2.793 (2.527)	-0.125 (0.186)	-0.012 (0.176)	0.226* (0.11)	0.787* (0.357)	-0.04 (0.161)	0.096 (0.164)
NM	8.772*** (0.147)	5.971*** (0.476)	-0.005 (0.03)	0.397*** (0.056)	0.044 (0.025)	-1.045*** (0.051)	0.294*** (0.033)	0.104 (0.065)
NV	14.494*** (0.358)	9.456*** (0.527)	-0.139* (0.069)	-0.755*** (0.119)	-0.563*** (0.057)	0.948*** (0.135)	-0.305*** (0.064)	0.973*** (0.077)
NY	39.202*** (0.384)	8.230*** (0.729)	-0.002 (0.017)	0.184*** (0.023)	-0.099*** (0.012)	-0.125*** (0.019)	†	-0.417*** (0.035)
OH	20.078*** (0.323)	18.511*** (1.02)	1.249*** (0.1)	1.241*** (0.096)	0.111*** (0.022)	-0.012 (0.06)	-0.085** (0.026)	0.327*** (0.033)
OK	29.921*** (0.458)	19.653*** (0.993)	-0.173** (0.052)	0.265*** (0.046)	‡	0.05 (0.053)	-0.131*** (0.03)	-0.577*** (0.144)
OR	17.174*** (0.526)	-6.678*** (1.813)	-0.582*** (0.147)	-0.728*** (0.15)	-0.253*** (0.045)	0.945*** (0.117)	0.079 (0.049)	-0.265*** (0.066)

State	Donor Share	Opponent Share	Incumbent	Open Seat	Majority Party	Vote Share 2006	Major Committee	Legislative Leader
PA	26.591*** (0.4)	7.281*** (0.858)	-0.485*** (0.039)	-0.257*** (0.033)	-0.098*** (0.019)	-0.391*** (0.036)	-0.024 (0.026)	-0.166*** (0.035)
RI	11.512*** (0.302)	-4.734*** (0.927)	0.231** (0.068)	0.468*** (0.077)	0.038 (0.073)	-1.045*** (0.118)	†	0.325*** (0.06)
SC	19.697*** (0.229)	11.993*** (0.712)	-0.344*** (0.025)	-0.164*** (0.024)	-0.040* (0.016)	0.171*** (0.034)	0.065** (0.021)	0.325*** (0.054)
TN	18.371*** (0.261)	4.225*** (0.548)	-0.206*** (0.031)	0.405*** (0.032)	-0.262*** (0.023)	0.1 (0.053)	-0.099** (0.035)	0.124** (0.042)
TX	5.912*** (0.121)	0.555* (0.259)	-1.167*** (0.045)	‡	0.078*** (0.019)	1.297*** (0.054)	-0.180*** (0.019)	-1.019*** (0.082)
UT	15.324*** (0.428)	10.716*** (1.045)	-0.513*** (0.073)	0.03 (0.076)	-0.516*** (0.051)	2.106*** (0.148)	‡	0.119 (0.074)
WA	9.781*** (0.177)	7.969*** (0.729)	0.297*** (0.033)	0.344*** (0.037)	0.184*** (0.019)	-0.336*** (0.068)	†	0.161*** (0.037)
WI	20.571*** (0.19)	3.788*** (0.361)	-0.511*** (0.036)	0.563*** (0.03)	-0.092*** (0.017)	-0.248*** (0.035)	-0.158*** (0.02)	0.285*** (0.03)
WV	11.795*** (0.325)	4.068*** (0.716)	-0.143 (0.085)	0.323*** (0.066)	0.137 (0.071)	0.327** (0.107)	0.487*** (0.081)	1.131*** (0.11)
WY	7.065*** (0.603)	3.736*** (0.643)	1.097** (0.327)	-0.291 (0.229)	-1.311*** (0.316)	-0.02 (0.208)	0.306* (0.15)	-0.509 (0.293)

Table: This table shows full coefficient estimates from the conditional logit models for the upper chambers. Standard errors are shown in parentheses.

Significance levels are indicated as * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed. † indicates missing data (mostly elections in which no legislative leaders were running, some data that could not be obtained such as Rhode Island's committees), ‡ indicates that the variable was dropped due to collinearity.

6. Correlations and confidence bounds

State	Lower 2.5%	Corr.	Upper 97.5%	State	Lower 2.5%	Corr.	Upper 97.5%
AK	0.84	0.843	0.846	MO	0.72	0.724	0.727
AR	0.672	0.676	0.679	MT	0.801	0.81	0.817
AZ	0.802	0.807	0.812	NC	0.816	0.82	0.824
CA	0.691	0.693	0.696	ND	0.73	0.745	0.756
CO	0.726	0.729	0.732	NM	0.724	0.729	0.733
CT	0.743	0.747	0.752	NV	0.825	0.829	0.834
DE	0.75	0.755	0.759	NY	0.76	0.764	0.768
FL	0.729	0.732	0.735	OH	0.691	0.695	0.699
GA	0.713	0.718	0.723	OK	0.686	0.692	0.697
HI	0.775	0.782	0.789	OR	0.757	0.767	0.777
IA	0.635	0.638	0.642	PA	0.845	0.85	0.853
ID	0.634	0.639	0.643	RI	0.889	0.895	0.901
IL	0.743	0.749	0.756	SC	0.725	0.735	0.742
IN	0.672	0.677	0.682	TN	0.669	0.674	0.678
KS	0.686	0.693	0.699	TX	0.576	0.583	0.589
KY	0.729	0.737	0.746	UT	0.654	0.661	0.668
MA	0.802	0.806	0.809	WA	0.726	0.729	0.733
ME	0.869	0.88	0.89	WI	0.646	0.65	0.653
MI	0.582	0.585	0.588	WV	0.762	0.766	0.77
MN	0.685	0.692	0.698	WY	0.76	0.769	0.777

Table: Lower chamber confidence bounds on the correlation between the predicted probabilities and prior donor shares.

State	Lower 2.5%	Corr.	Upper 97.5%	State	Lower 2.5%	Corr.	Upper 97.5%
AK	0.892	0.915	0.933	NC	0.851	0.857	0.863
AR	0.81	0.824	0.837	ND	0.836	0.85	0.86
AZ	0.893	0.897	0.902	NM	0.804	0.808	0.812
CA	0.792	0.796	0.8	NV	0.912	0.922	0.932
CO	0.849	0.852	0.855	NY	0.691	0.695	0.699
CT	0.757	0.761	0.766	OH	0.817	0.824	0.83
DE	0.863	0.871	0.877	OK	0.725	0.734	0.743
FL	0.953	0.954	0.956	OR	0.798	0.809	0.817
GA	0.749	0.757	0.766	PA	0.788	0.794	0.802
HI	0.868	0.876	0.883	RI	0.855	0.861	0.867
IA	0.781	0.789	0.795	SC	0.759	0.763	0.767
ID	0.77	0.778	0.785	TN	0.8	0.806	0.813
IL	0.834	0.838	0.841	TX	0.852	0.858	0.863
IN	0.822	0.832	0.842	UT	0.721	0.749	0.774
KS	0.785	0.79	0.795	WA	0.854	0.858	0.862
KY	0.847	0.851	0.854	WI	0.763	0.77	0.776
ME	0.852	0.859	0.864	WV	0.814	0.826	0.836
MO	0.843	0.849	0.855	WY	0.903	0.924	0.934
MT	0.929	0.945	0.956				

Table: Upper chamber confidence bounds on the correlation between the predicted probabilities and prior donor shares.

7. Analysis of static factors

This section includes the statistical estimates for the association between the static factors and early and late donor shares. For each candidate we calculated her share of the existing donor pool and used the static factors as predictors, anticipating that the model fit would be better for the early donors (first 20%) than the late donors (last 20%). The early donors are tentatively expected to rely more on candidate characteristics which explains the origins of the inequities between candidates and the late donors rely more heavily on the existing donor shares (i.e. preferential attachment process). Regression models of candidates' donor shares and negative binomial estimates of donor counts confirm a superior model fit among the early donors (greater R^2 for the regression model of early donors and a greater log-likelihood for the negative binomial model of early donor counts).

VARIABLES	(1) Early donor share	(2) Late donor share
Incumbent	0.006*** (0.001)	0.002*** (0.001)
Open Seat	0.002* (0.001)	0.002** (0.001)
Majority Party	0.001* (0.001)	0.001 (0.000)
Vote Share 2006	0.002 (0.001)	-0.006*** (0.001)
Major Committee	0.000 (0.001)	0.001 (0.001)
Legislative Leader	0.018*** (0.002)	0.008*** (0.002)
Constant	0.003*** (0.001)	0.010*** (0.001)
Observations	3732	3734
R-squared	0.050	0.017

Table: Regression estimates for candidate donor shares. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

VARIABLES	(1) Early donor count	(3) Late donor count
Incumbent	1.254*** (0.087)	0.590*** (0.069)
Open Seat	0.851*** (0.098)	0.703*** (0.074)
Majority Party	-0.011 (0.063)	-0.026 (0.049)
Vote Share 2006	0.804*** (0.138)	-0.845*** (0.112)
Major Committee	-0.085 (0.085)	-0.089 (0.066)
Legislative Leader	0.644*** (0.201)	0.445*** (0.156)
Constant	2.038*** (0.093)	3.613*** (0.073)
Ln(alpha)	1.223*** (0.024)	0.708*** (0.023)
Observations	3732	3734
Log-likelihood	-14881	-16407

Table: Negative binomial estimates for candidates' donor counts. *** p<0.01, ** p<0.05, * p<0.1

