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Campaign Finance Reform: Additional Information Related to Program Goals in Two States Offering Full Public Funding for Political Candidates (GAO-10-391SP), an E-supplement to GAO-10-390

Read the Full Report: Campaign Finance Reform: Experiences of Two States That Offered Full Public Funding for Political Candidates (GAO-10-390)

Background Information

The 2000 elections in Maine and Arizona were the first instances in the nation's history where candidates seeking state legislative seats and certain statewide offices had the option to fully fund their campaigns with public monies. In 2003, we reviewed the public financing programs in Maine and Arizona and identified five overarching goals including to (1) increase electoral competition by, among other means, reducing the number of uncontested races (i.e., races with only one candidate per seat in contention); (2) increase voter choice by encouraging more candidates to run for office; (3) curb increases in the cost of campaigns; (4) reduce the influence of interest groups and, thereby, enhance citizens' confidence in government; and (5) increase voter participation (e.g., increase voter turnout for elections).[1] Our 2003 report found that while the number of legislative candidates who chose to use public financing for their campaigns increased from 2000 to 2002, it was too soon to determine the extent to which these five goals of Maine's and Arizona's public financing programs were being met.

Senate Report 110-129 directed GAO to revisit and update our 2003 report to account for data and experiences of the past two election cycles.[2] To address our objectives, we obtained data from Maine's and Arizona's Offices of the Secretary of State, the agencies responsible for supervising and administering state elections and activities, such as certifying state candidates for the ballot and tabulating official election results; Maine's Commission on Governmental Ethics and Election Practices and Arizona's Citizens Clean Elections Commission, the agencies responsible for administering the respective state's public financing program. For both states we obtained available statistical data about the 1996 through 2008 legislative elections, including data related to candidate program participation, election outcomes, voter choice, and reported campaign spending. In addition, we obtained general election data from 1996 through 2008 from four comparison states that did not offer public financing programs for legislative candidates (Colorado, Connecticut, Montana, and South Dakota).

[1]GAO, Campaign Finance Reform: Early Experiences of Two States That Offer Full Public Funding for Political Candidates, GAO-03-453 (Washington, D.C.: May 9, 2003).
[2]S. Rep. No. 110-129, at 73 (2007). Since the Senate Report was issued in 2007, the report language referred to the past two election cycles, 2004 and 2006. However, due to the timing of our work, we included the past three election cycles in our report—the 2004, 2006, and 2008 election cycles.

This document provides detailed tables that accompany information provided in our report entitled Campaign Finance Reform: Experiences of Two States That Offered Full Public Funding for Political Candidates, GAO-10-390, as well as technical documents that describe statistical analyses conducted to support the findings in the report and supplemental information on data sources and methods. Tables 1 to 10 describe legislative candidates' participation in the public financing programs in Maine and Arizona. Tables 11 to 34 describe data related to measuring electoral competition. Tables 35 to 38 describe data related to measuring voter choice. Tables 39 to 46 describe data related to measuring candidate spending.

For the tables in this document, we assessed the reliability of the data used, and determined that the data were sufficiently reliable for our purposes, with limitations noted where appropriate. A more detailed discussion of our scope and methodology is contained in GAO-10-390. We conducted this performance audit from November 2008 through May 2010, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Contact Information

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Abbreviations

ACS	American Community Survey
ANES	American National Election Studies
CPS	Current Population Survey
CI	confidence interval
CVAP	citizen voting-age population
DF	degrees of freedom
DV	dependent variable
EAC	United States Election Assistance Commission
Elections Project	George Mason University's United States Election Project
FEC	Federal Election Commission
GDP	gross domestic product
HAVA	Help America Vote Act
L2	likelihood ratio chi-square
LPM	linear probability model
Nonparticipating candidates	candidates who did not participate in the public financing program
Participating candidates	candidates who participated in the public financing program
P	probability
SE	standard error
VAP	voting-age population
VEP	voting-eligible population
VRD	voter registration databases

Table 1: Legislative Candidates Participating in Maine's Public Financing Program, Primary and General Elections, 2000 through 2008

		Primary elections					General elections				
		Nonparticipating candidates		Participating candidates			Nonparticipating candidates		Participating candidates		
	Election year	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total
House of Representatives	2000	213	72.4%	81	27.6%	294	197	70.9%	81	29.1%	**278**
	2002	162	50.8	157	49.2	319	120	40.1	179	59.9	**299**
	2004	103	29.6	245	70.4	348	68	21.4	250	78.6	**318**
	2006	93	27.9	240	72.1	333	62	20.0	248	80.0	**310**
	2008	84	26.1	238	73.9	322	51	17.3	244	82.7	**295**
	All	**655**	**40.5%**	**961**	**59.5%**	**1,616**	**498**	**33.2%**	**1,002**	**66.8%**	**1,500**
Senate	2000	38	50.7	37	49.3	75	37	51.4	35	48.6	**72**
	2002	31	38.3	50	61.7	81	19	26.8	52	73.2	**71**
	2004	17	21.0	64	79.0	81	15	20.5	58	79.5	**73**
	2006	15	19.5	62	80.5	77	11	14.3	66	85.7	**77**
	2008	20	25.0	60	75.0	80	15	20.3	59	79.7	**74**
	All	**121**	**30.7%**	**273**	**69.3%**	**394**	**97**	**26.4%**	**270**	**73.6%**	**367**
Total	**2000**	**251**	**68.0**	**118**	**32.0**	**369**	**234**	**66.9**	**116**	**33.1**	**350**
	2002	**193**	**48.3**	**207**	**51.8**	**400**	**139**	**37.6**	**231**	**62.4**	**370**
	2004	**120**	**28.0**	**309**	**72.0**	**429**	**83**	**21.2**	**308**	**78.8**	**391**
	2006	**108**	**26.3**	**302**	**73.7**	**410**	**73**	**18.9**	**314**	**81.1**	**387**
	2008	**104**	**25.9**	**298**	**74.1**	**402**	**66**	**17.9**	**303**	**82.1**	**369**
	All	**776**	**38.6%**	**1,234**	**61.4%**	**2,010**	**595**	**31.9%**	**1,272**	**68.1%**	**1,867**

Note: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 2: Legislative Candidates Participating in Arizona's Public Financing Program, Primary and General Elections, 2000 through 2008

		Primary elections					General elections				
		Nonparticipating candidates		Participating candidates			Nonparticipating candidates		Participating candidates		
	Election year	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total
House of Representatives	2000	110	73.3%	40	26.7%	150	71	70.3%	30	29.7%	**101**
	2002	68	44.2	86	55.8	154	42	42.9	56	57.1	**98**
	2004	51	38.9	80	61.1	131	41	41.0	59	59.0	**100**
	2006	56	41.5	79	58.5	135	45	44.6	56	55.4	**101**
	2008	54	39.1	84	60.9	138	32	30.8	72	69.2	**104**
	All	**339**	**47.9%**	**369**	**52.1%**	**708**	**231**	**45.8%**	**273**	**54.2%**	**504**
Senate	2000	62	81.6	14	18.4	76	46	80.7	11	19.3	**57**
	2002	43	63.2	25	36.8	68	35	67.3	17	32.7	**52**
	2004	34	60.7	22	39.3	56	30	61.2	19	38.8	**49**
	2006	31	48.4	33	51.6	64	29	50.9	28	49.1	**57**
	2008	28	46.7	32	53.3	60	25	45.5	30	54.5	**55**
	All	**198**	**61.1%**	**126**	**38.9%**	**324**	**165**	**61.1%**	**105**	**38.9%**	**270**
Total	**2000**	**172**	**76.1**	**54**	**23.9**	**226**	**117**	**74.1**	**41**	**25.9**	**158**
	2002	**111**	**50.0**	**111**	**50.0**	**222**	**77**	**51.3**	**73**	**48.7**	**150**
	2004	**85**	**45.5**	**102**	**54.5**	**187**	**71**	**47.7**	**78**	**52.3**	**149**
	2006	**87**	**43.7**	**112**	**56.3**	**199**	**74**	**46.8**	**84**	**53.2**	**158**
	2008	**82**	**41.4**	**116**	**58.6**	**198**	**57**	**35.8**	**102**	**64.2**	**159**
	All	**537**	**52.0%**	**495**	**48.0%**	**1,032**	**396**	**51.2%**	**378**	**48.8%**	**774**

Note: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 3: Legislative Candidates' Participation in the Public Financing Program and Incumbent Status, Maine's General Elections, 2000 through 2008

		Challenger candidates					Incumbent candidates					Total candidates				
		Nonparticipating		Participating			Nonparticipating		Participating			Nonparticipating		Participating		
	Election year	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total
House of Representatives	2000	110	66%	56	34%	166	87	78%	25	22%	112	**197**	**71%**	**81**	**29%**	**278**
	2002	67	33	137	67	204	53	56	42	44	95	**120**	**40**	**179**	**60**	**299**
	2004	39	19	170	81	209	29	27	80	73	109	**68**	**21**	**250**	**79**	**318**
	2006	42	21	155	79	197	20	18	93	82	113	**62**	**20**	**248**	**80**	**310**
	2008	30	16	157	84	187	21	19	87	81	108	**51**	**17**	**244**	**83**	**295**
	Total	**288**	**30%**	**675**	**70%**	**963**	**210**	**39%**	**327**	**61%**	**537**	**498**	**33%**	**1,002**	**67%**	**1,500**
Senate	2000	26	52	24	48	50	11	50	11	50	22	**37**	**51**	**35**	**49**	**72**
	2002	14	30	32	70	46	5	20	20	80	25	**19**	**27**	**52**	**73**	**71**
	2004	12	24	39	76	51	3	14	19	86	22	**15**	**21**	**58**	**79**	**73**
	2006	6	12	43	88	49	5	18	23	82	28	**11**	**14**	**66**	**86**	**77**
	2008	9	19	38	81	47	6	22	21	78	27	**15**	**20**	**59**	**80**	**74**
	Total	**67**	**28%**	**176**	**72%**	**243**	**30**	**24%**	**94**	**76%**	**124**	**97**	**26%**	**270**	**74%**	**367**
Total	**2000**	**136**	**63**	**80**	**37**	**216**	**98**	**73**	**36**	**27**	**134**	**234**	**67**	**116**	**33**	**350**
	2002	**81**	**32**	**169**	**68**	**250**	**58**	**48**	**62**	**52**	**120**	**139**	**38**	**231**	**62**	**370**
	2004	**51**	**20**	**209**	**80**	**260**	**32**	**24**	**99**	**76**	**131**	**83**	**21**	**308**	**79**	**391**
	2006	**48**	**20**	**198**	**80**	**246**	**25**	**18**	**116**	**82**	**141**	**73**	**19**	**314**	**81**	**387**
	2008	**39**	**17**	**195**	**83**	**234**	**27**	**20**	**108**	**80**	**135**	**66**	**18**	**303**	**82**	**369**
	Total	**355**	**29%**	**851**	**71%**	**1,206**	**240**	**36%**	**421**	**64%**	**661**	**595**	**32%**	**1,272**	**68%**	**1,867**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race.

Table 4: Legislative Candidates' Participation in the Public Financing Program and Incumbent Status, Arizona's General Elections, 2000 through 2008

		Challenger candidates					Incumbent candidates					Total candidates				
		Nonparticipating		Participating			Nonparticipating		Participating			Nonparticipating		Participating		
	Election year	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total	Total
House of Representatives	2000	41	62%	25	38%	66	30	86%	5	14%	35	**71**	**70%**	**30**	**30%**	**101**
	2002	21	31	47	69	68	21	70	9	30	30	**42**	**43**	**56**	**57**	**98**
	2004	24	39	38	61	62	17	45	21	55	38	**41**	**41**	**59**	**59**	**100**
	2006	20	34	38	66	58	25	58	18	42	43	**45**	**45**	**56**	**55**	**101**
	2008	12	19	52	81	64	20	50	20	50	40	**32**	**31**	**72**	**69**	**104**
	Total	**118**	**37%**	**200**	**63%**	**318**	**113**	**61%**	**73**	**39%**	**186**	**231**	**46%**	**273**	**54%**	**504**
Senate	2000	27	73	10	27	37	19	95	1	5	20	**46**	**81**	**11**	**19**	**57**
	2002	23	59	16	41	39	12	92	1	8	13	**35**	**67**	**17**	**33**	**52**
	2004	12	43	16	57	28	18	86	3	14	21	**30**	**61**	**19**	**39**	**49**
	2006	13	36	23	64	36	16	76	5	24	21	**29**	**51**	**28**	**49**	**57**
	2008	11	33	22	67	33	14	64	8	36	22	**25**	**45**	**30**	**55**	**55**
	Total	**86**	**50%**	**87**	**50%**	**173**	**79**	**81%**	**18**	**19%**	**97**	**165**	**61%**	**105**	**39%**	**270**
Total	**2000**	**68**	**66**	**35**	**34**	**103**	**49**	**89**	**6**	**11**	**55**	**117**	**74**	**41**	**26**	**158**
	2002	**44**	**41**	**63**	**59**	**107**	**33**	**77**	**10**	**23**	**43**	**77**	**51**	**73**	**49**	**150**
	2004	**36**	**40**	**54**	**60**	**90**	**35**	**59**	**24**	**41**	**59**	**71**	**48**	**78**	**52**	**149**
	2006	**33**	**35**	**61**	**65**	**94**	**41**	**64**	**23**	**36**	**64**	**74**	**47**	**84**	**53**	**158**
	2008	**23**	**24**	**74**	**76**	**97**	**34**	**55**	**28**	**45**	**62**	**57**	**36**	**102**	**64**	**159**
	Total	**204**	**42%**	**287**	**58%**	**491**	**192**	**68%**	**91**	**32%**	**283**	**396**	**51%**	**378**	**49%**	**774**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race.

Table 5: Winning Legislative Candidates by Public Financing Program Participation and Incumbent Status in Maine, General Elections, 2000 through 2008

		House of Representatives						Senate						Total					
		Challenger			Incumbent			Challenger			Incumbent			Challenger			Incumbent		
	Election year	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total
Nonparticipating candidates	2000	25	22.7%	110	81	93.1%	87	9	34.6%	26	9	81.8%	11	**34**	**25.0%**	**136**	**90**	**91.8%**	**98**
	2002	22	32.8	67	45	84.9	53	4	28.6	14	4	80.0	5	**26**	**32.1**	**81**	**49**	**84.5**	**58**
	2004	8	20.5	39	27	93.1	29	5	41.7	12	1	33.3	3	**13**	**25.5**	**51**	**28**	**87.5**	**32**
	2006	8	19.0	42	16	80.0	20	1	16.7	6	5	100	5	**9**	**18.8**	**48**	**21**	**84.0**	**25**
	2008	2	6.7	30	19	90.5	21	1	11.1	9	6	100	6	**3**	**7.7**	**39**	**25**	**92.6**	**27**
	Total	**65**	**22.6%**	**288**	**188**	**89.5%**	**210**	**20**	**29.9%**	**67**	**25**	**83.3%**	**30**	**85**	**23.9%**	**355**	**213**	**88.8%**	**240**
Participating candidates	2000	21	37.5	56	24	96.0	25	6	25.0	24	11	100	11	**27**	**33.8**	**80**	**35**	**97.2**	**36**
	2002	48	35.0	137	36	85.7	42	8	25.0	32	19	95.0	20	**56**	**33.1**	**169**	**55**	**88.7**	**62**
	2004	44	25.9	170	72	90.0	80	14	35.9	39	15	78.9	19	**58**	**27.8**	**209**	**87**	**87.9**	**99**
	2006	43	27.7	155	84	90.3	93	7	16.3	43	22	95.7	23	**50**	**25.3**	**198**	**106**	**91.4**	**116**
	2008	49	31.2	157	81	93.1	87	9	23.7	38	19	90.5	21	**58**	**29.7**	**195**	**100**	**92.6**	**108**
	Total	**205**	**30.4%**	**675**	**297**	**90.8%**	**327**	**44**	**25.0%**	**176**	**86**	**91.5%**	**94**	**249**	**29.3%**	**851**	**383**	**91.0%**	**421**
Total	**2000**	**46**	**27.7**	**166**	**105**	**93.8**	**112**	**15**	**30.0**	**50**	**20**	**90.9**	**22**	**61**	**28.2**	**216**	**125**	**93.3**	**134**
	2002	**70**	**34.3**	**204**	**81**	**85.3**	**95**	**12**	**26.1**	**46**	**23**	**92.0**	**25**	**82**	**32.8**	**250**	**104**	**86.7**	**120**
	2004	**52**	**24.9**	**209**	**99**	**90.8**	**109**	**19**	**37.3**	**51**	**16**	**72.7**	**22**	**71**	**27.3**	**260**	**115**	**87.8**	**131**
	2006	**51**	**25.9**	**197**	**100**	**88.5**	**113**	**8**	**16.3**	**49**	**27**	**96.4**	**28**	**59**	**24.0**	**246**	**127**	**90.1**	**141**
	2008	**51**	**27.3**	**187**	**100**	**92.6**	**108**	**10**	**21.3**	**47**	**25**	**92.6**	**27**	**61**	**26.1**	**234**	**125**	**92.6**	**135**
	Total	**270**	**28.0%**	**963**	**485**	**90.3%**	**537**	**64**	**26.3%**	**243**	**111**	**89.5%**	**124**	**334**	**27.7%**	**1,206**	**596**	**90.2%**	**661**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Although there are differences in the percentages of participating and nonparticipating candidates, the information in this table does not provide evidence that program participation influences an individual candidate's likelihood of winning.

Table 6: Winning Legislative Candidates by Public Financing Program Participation and Incumbent Status in Arizona, General Elections, 2000 through 2008

		House of Representatives						Senate						Total					
		Challenger			Incumbent			Challenger			Incumbent			Challenger			Incumbent		
	Election year	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total	Number who won	Percent who won	Total
Nonparticipating candidates	2000	20	48.8%	41	28	93.3%	30	9	33.3%	27	19	100%	19	**29**	**42.6%**	**68**	**47**	**95.9%**	**49**
	2002	12	57.1	21	21	100	21	13	56.5	23	12	100	12	**25**	**56.8**	**44**	**33**	**100**	**33**
	2004	9	37.5	24	16	94.1	17	5	41.7	12	18	100	18	**14**	**38.9**	**36**	**34**	**97.1**	**35**
	2006	6	30.0	20	25	100	25	5	38.5	13	16	100	16	**11**	**33.3**	**33**	**41**	**100**	**41**
	2008	2	16.7	12	20	100	20	5	45.5	11	14	100	14	**7**	**30.4**	**23**	**34**	**100**	**34**
	Total	**49**	**41.5%**	**118**	**110**	**97.3%**	**113**	**37**	**43.0%**	**86**	**79**	**100%**	**79**	**86**	**42.2%**	**204**	**189**	**98.4%**	**192**
Participating candidates	2000	7	28.0	25	5	100	5	1	10.0	10	1	100	1	**8**	**22.9**	**35**	**6**	**100**	**6**
	2002	21	44.7	47	6	66.7	9	4	25.0	16	1	100	1	**25**	**39.7**	**63**	**7**	**70.0**	**10**
	2004	15	39.5	38	20	95.2	21	4	25.0	16	3	100	3	**19**	**35.2**	**54**	**23**	**95.8**	**24**
	2006	13	34.2	38	16	88.9	18	4	17.4	23	5	100	5	**17**	**27.9**	**61**	**21**	**91.3**	**23**
	2008	20	38.5	52	18	90.0	20	3	13.6	22	8	100	8	**23**	**31.1**	**74**	**26**	**92.9**	**28**
	Total	**76**	**38.0%**	**200**	**65**	**89.0%**	**73**	**16**	**18.4%**	**87**	**18**	**100%**	**18**	**92**	**32.1%**	**287**	**83**	**91.2%**	**91**
Total	**2000**	**27**	**40.9**	**66**	**33**	**94.3**	**35**	**10**	**27.0**	**37**	**20**	**100**	**20**	**37**	**35.9**	**103**	**53**	**96.4**	**55**
	2002	**33**	**48.5**	**68**	**27**	**90.0**	**30**	**17**	**43.6**	**39**	**13**	**100**	**13**	**50**	**46.7**	**107**	**40**	**93.0**	**43**
	2004	**24**	**38.7**	**62**	**36**	**94.7**	**38**	**9**	**32.1**	**28**	**21**	**100**	**21**	**33**	**36.7**	**90**	**57**	**96.6**	**59**
	2006	**19**	**32.8**	**58**	**41**	**95.3**	**43**	**9**	**25.0**	**36**	**21**	**100**	**21**	**28**	**29.8**	**94**	**62**	**96.9**	**64**
	2008	**22**	**34.4**	**64**	**38**	**95.0**	**40**	**8**	**24.2**	**33**	**22**	**100**	**22**	**30**	**30.9**	**97**	**60**	**96.8**	**62**
	Total	**125**	**39.3%**	**318**	**175**	**94.1%**	**186**	**53**	**30.6%**	**173**	**97**	**100%**	**97**	**178**	**36.3%**	**491**	**272**	**96.1%**	**283**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Although there are differences in the percentages of participating and nonparticipating candidates, the information in this table does not provide evidence that program participation influences an individual candidate's likelihood of winning.

Table 7: Legislative Candidates by Political Party Affiliation and Public Financing Program Participation in Maine, Primary and General Elections, 2000 through 2008

		Candidates' party affiliation							
		Democrat		Republican		Other than Democrat or Republican		Total	
	Election year	Number of candidates	Percent of Democrats participating	Number of candidates	Percent of Republicans participating	Number of candidates	Percent of others participating	Number of candidates	Percent of total participating
Primary elections	2000	193	39.4%	172	22.1%	4	100%	**369**	**32.0%**
	2002	196	61.7	191	40.8	13	61.5	**400**	**51.8**
	2004	204	83.3	202	61.9	23	60.9	**429**	**72.0**
	2006	199	87.4	200	61.5	11	45.5	**410**	**73.7**
	2008	204	86.8	184	63.0	14	35.7	**402**	**74.1**
General elections	2000	173	43.9	150	23.3	27	18.5	**350**	**33.1**
	2002	173	70.5	168	54.8	29	58.6	**370**	**62.4**
	2004	180	86.1	182	71.4	29	79.3	**391**	**78.8**
	2006	186	92.5	178	73.0	23	52.2	**387**	**81.1**
	2008	184	91.8	166	71.7	19	78.9	**369**	**82.1**

Note: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 8: Legislative Candidates by Political Party Affiliation and Public Financing Program Participation in Arizona, Primary and General Elections, 2000 through 2008

		Candidates' party affiliation							
		Democrat		Republican		Other than Democrat or Republican		Total	
	Election year	Number of candidates	Percent of Democrats participating	Number of candidates	Percent of Republicans participating	Number of candidates	Percent of others participating	Number of candidates	Percent of total participating
Primary elections	2000	95	42.1%	114	8.8%	17	23.5%	226	23.9%
	2002	99	59.6	114	41.2	9	55.6	222	50.0
	2004	79	63.3	97	53.6	11	0.0	187	54.5
	2006	82	69.5	108	50.9	9	0.0	199	56.3
	2008	93	72.0	94	50.0	11	18.2	198	58.6
General elections	2000	68	45.6	69	8.7	21	19.0	158	25.9
	2002	68	63.2	67	34.3	15	46.7	150	48.7
	2004	64	65.6	70	50.0	15	6.7	149	52.3
	2006	69	72.5	76	43.4	13	7.7	158	53.2
	2008	74	82.4	73	52.1	12	25.0	159	64.2

Note: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 9: Percent of Legislative Races with at Least One Candidate Participating in the Public Financing Program in Maine, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Races with at least one participating candidate		Races with no participating candidates			Races with at least one participating candidate		Races with no participating candidates	
	Election year	Total races	Number of races	Percent of total	Number of races	Percent of total	Total races	Number of races	Percent of total	Number of races	Percent of total
House of Representatives	2000	273	74	27.1%	199	72.9%	151	63	41.7%	88	58.3%
	2002	294	144	49.0	150	51.0	151	114	75.5	37	24.5
	2004	319	228	71.5	91	28.5	151	139	92.1	12	7.9
	2006	310	230	74.2	80	25.8	151	148	98.0	3	2.0
	2008	300	225	75.0	75	25.0	151	146	96.7	5	3.3
Senate	2000	69	36	52.2	33	47.8	35	25	71.4	10	28.6
	2002	73	48	65.8	25	34.2	35	33	94.3	2	5.7
	2004	70	57	81.4	13	18.6	35	32	91.4	3	8.6
	2006	72	60	83.3	12	16.7	35	35	100.0	0	0.0
	2008	72	52	72.2	20	27.8	35	33	94.3	2	5.7
All	**2000**	**342**	**110**	**32.2**	**232**	**67.8**	**186**	**88**	**47.3**	**98**	**52.7**
	2002	**367**	**192**	**52.3**	**175**	**47.7**	**186**	**147**	**79.0**	**39**	**21.0**
	2004	**389**	**285**	**73.3**	**104**	**26.7**	**186**	**171**	**91.9**	**15**	**8.1**
	2006	**382**	**290**	**75.9**	**92**	**24.1**	**186**	**183**	**98.4**	**3**	**1.6**
	2008	**372**	**277**	**74.5**	**95**	**25.5**	**186**	**179**	**96.2**	**7**	**3.8**

Note: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 10: Percent of Legislative Races with at Least One Candidate Participating in the Public Financing Program in Arizona, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Races with at least one participating candidate		Races with no participating candidates			Races with at least one participating candidate		Races with no participating candidates	
	Election year	Total races	Number of races	Percent of total	Number of races	Percent of total	Total races	Number of races	Percent of total	Number of races	Percent of total
House of Representatives	2000	61	32	52.5%	29	47.5%	30	22	73.3%	8	26.7%
	2002	57	44	77.2	13	22.8	30	23	76.7	7	23.3
	2004	55	41	74.5	14	25.5	30	25	83.3	5	16.7
	2006	60	43	71.7	17	28.3	30	23	76.7	7	23.3
	2008	65	50	76.9	15	23.1	30	29	96.7	1	3.3
Senate	2000	57	13	22.8	44	77.2	30	10	33.3	20	66.7
	2002	50	21	42.0	29	58.0	30	14	46.7	16	53.3
	2004	48	20	41.7	28	58.3	30	15	50.0	15	50.0
	2006	56	31	55.4	25	44.6	30	22	73.3	8	26.7
	2008	54	30	55.6	24	44.4	30	20	66.7	10	33.3
All	**2000**	**118**	**45**	**38.1**	**73**	**61.9**	**60**	**32**	**53.3**	**28**	**46.7**
	2002	**107**	**65**	**60.7**	**42**	**39.3**	**60**	**37**	**61.7**	**23**	**38.3**
	2004	**103**	**61**	**59.2**	**42**	**40.8**	**60**	**40**	**66.7**	**20**	**33.3**
	2006	**116**	**74**	**63.8**	**42**	**36.2**	**60**	**45**	**75.0**	**15**	**25.0**
	2008	**119**	**80**	**67.2**	**39**	**32.8**	**60**	**49**	**81.7**	**11**	**18.3**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. The total number of Arizona general election races in each year was 60 (30 races in the House of Representatives and 30 in the Senate).

Table 11: Winner's Average Margin of Victory in Contested Legislative Races in Maine, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	20.8	23.2	22.4	19.1	17.2	18.7	20.7
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	**26.6**	**40.5**	**39.3**	**29.3**	**18.9**	**20.9**	**30.1**
Senate	**Contested races**	20.8	24.3	21.9	15.7	14.3	18.4	20.2
	Uncontested races	100.0	100.0	100.0	100.0	100.0	n.a.	n.a.
	Total	**25.4**	**35.1**	**24.2**	**25.4**	**19.2**	**18.4**	**20.2**

n.a. = not applicable.
Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table.

Table 12: Winner's Average Margin of Victory in Contested Legislative Races in Arizona, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	16.0	13.4	13.3	14.2	14.3	14.4	11.6
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	38.4	45.1	27.7	34.3	37.2	25.8	20.4
Senate	**Contested races**	30.0	32.6	28.6	34.6	26.7	23.9	22.1
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	58.0	70.8	47.7	60.7	60.9	39.1	42.8

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table. Since there are two members for each Arizona House of Representatives district, the margin of victory represents the percentage point difference between the second place winner and first runner up. For a detailed explanation, see the section in this e-supplement entitled, *Additional Factors We Assessed in Evaluating Maine's and Arizona's Public Financing Programs, Calculating Multimember District Victory Margins and Electoral Competition*.

Table 13: Winner's Average Margin of Victory in Contested Legislative Races in Colorado, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	24.7	27.0	32.8	28.9	25.9	24.3	26.0
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	45.6	37.1	33.8	38.7	38.5	38.3	35.1
Senate	**Contested races**	15.2	16.9	22.3	31.7	22.0	22.9	21.1
	Uncontested races	100.0	100.0		100.0	100.0	100.0	100.0
	Total	42.0	31.6	22.3	35.7	35.0	31.5	29.4

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table.

Table 14: Winner's Average Margin of Victory in Contested Legislative Races in Connecticut, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	33.8	34.2	36.6	33.4	41.3	41.2	36.0
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	49.6	50.3	58.8	49.7	54.5	56.8	55.5
Senate	**Contested races**	24.8	34.1	37.7	29.9	39.1	35.9	32.5
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	33.1	43.3	53.3	41.6	47.6	46.6	45.6

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table.

Table 15: Winner's Average Margin of Victory in Contested Legislative Races in Montana, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	20.4	20.1	22.0	23.2	21.2	22.8	22.7
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	47.5	52.8	34.5	38.6	35.4	34.3	34.3
Senate	**Contested races**	24.1	28.3	23.2	23.4	20.8	27.1	23.5
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	42.3	61.4	49.8	44.8	46.1	32.9	44.9

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table.

Table 16: Winner's Average Margin of Victory in Contested Legislative Races in South Dakota, General Elections, 1996 through 2008

		Average percentage point difference between the winner and first runner up						
		Election year						
		1996	1998	2000	2002	2004	2006	2008
House of Representatives	**Contested races**	9.0	12.4	12.0	15.3	12.8	10.8	12.0
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	**19.1**	**29.9**	**19.4**	**34.1**	**34.6**	**18.0**	**14.4**
Senate	**Contested races**	20.6	30.1	28.1	28.9	24.9	15.1	18.7
	Uncontested races	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Total	**36.5**	**54.1**	**50.7**	**61.4**	**48.5**	**24.8**	**21.0**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 8 in the accompanying report (GAO-10-390) plots the average margin of victory for House of Representatives and Senate races combined and is not directly comparable to this table.

Table 17: Winner's Victory Margin in Contested Legislative Races in Maine, General Elections, 1996 through 2008

			Contested races									
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up		Uncontested races	
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	151	41	27.2%	63	41.7%	81	53.6%	59	39.1%	11	7.3%
	1998	151	23	15.2	40	26.5	51	33.8	66	43.7	34	22.5
	2000	151	30	19.9	45	29.8	60	39.7	58	38.4	33	21.9
	2002	151	45	29.8	58	38.4	77	51.0	55	36.4	19	12.6
	2004	151	54	35.8	76	50.3	93	61.6	55	36.4	3	2.0
	2006	151	53	35.1	71	47.0	88	58.3	59	39.1	4	2.6
	2008	151	38	25.2	59	39.1	71	47.0	62	41.1	18	11.9
	Total	**1,057**	**284**	**26.9%**	**412**	**39.0%**	**521**	**49.3%**	**414**	**39.2%**	**122**	**11.5%**
Senate	1996	35	5	14.3	10	28.6	19	54.3	14	40.0	2	5.7
	1998	35	5	14.3	9	25.7	13	37.1	17	48.6	5	14.3
	2000	35	11	31.4	11	31.4	15	42.9	19	54.3	1	2.9
	2002	35	11	31.4	19	54.3	22	62.9	9	25.7	4	11.4
	2004	35	13	37.1	21	60.0	25	71.4	8	22.9	2	5.7
	2006	35	9	25.7	18	51.4	22	62.9	13	37.1	0	0.0
	2008	35	11	31.4	17	48.6	17	48.6	18	51.4	0	0.0
	Total	**245**	**65**	**26.5%**	**105**	**42.9%**	**133**	**54.3%**	**98**	**40.0%**	**14**	**5.7%**
Total	**1996**	**186**	**46**	**24.7**	**73**	**39.2**	**100**	**53.8**	**73**	**39.2**	**13**	**7.0**
	1998	**186**	**28**	**15.1**	**49**	**26.3**	**64**	**34.4**	**83**	**44.6**	**39**	**21.0**
	2000	**186**	**41**	**22.0**	**56**	**30.1**	**75**	**40.3**	**77**	**41.4**	**34**	**18.3**
	2002	**186**	**56**	**30.1**	**77**	**41.4**	**99**	**53.2**	**64**	**34.4**	**23**	**12.4**
	2004	**186**	**67**	**36.0**	**97**	**52.2**	**118**	**63.4**	**63**	**33.9**	**5**	**2.7**
	2006	**186**	**62**	**33.3**	**89**	**47.8**	**110**	**59.1**	**72**	**38.7**	**4**	**2.2**
	2008	**186**	**49**	**26.3**	**76**	**40.9**	**88**	**47.3**	**80**	**43.0**	**18**	**9.7**
	Total	**1,302**	**349**	**26.8**	**517**	**39.7**	**654**	**50.2**	**512**	**39.3**	**136**	**10.4**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table.

Table 18: Winner's Victory Margin in Contested Legislative Races in Arizona, General Elections, 1996 through 2008

			Contested races								Uncontested races	
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up			
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	30	10	33.3%	12	40.0%	15	50.0%	7	23.3%	8	26.7%
	1998	30	8	26.7	13	43.3	15	50.0	4	13.3	11	36.7
	2000	30	16	53.3	21	70.0	21	70.0	4	13.3	5	16.7
	2002	30	10	33.3	19	63.3	19	63.3	4	13.3	7	23.3
	2004	30	7	23.3	13	43.3	19	63.3	3	10.0	8	26.7
	2006	30	13	43.3	16	53.3	18	60.0	8	26.7	4	13.3
	2008	30	15	50.0	18	60.0	23	76.7	4	13.3	3	10.0
	Total	210	79	37.6%	112	53.3%	130	61.9%	34	16.2%	46	21.9%
Senate	1996	30	1	3.3	1	3.3	4	13.3	14	46.7	12	40.0
	1998	30	2	6.7	4	13.3	4	13.3	9	30.0	17	56.7
	2000	30	5	16.7	9	30.0	11	36.7	11	36.7	8	26.7
	2002	30	3	10.0	3	10.0	4	13.3	14	46.7	12	40.0
	2004	30	1	3.3	4	13.3	6	20.0	10	33.3	14	46.7
	2006	30	5	16.7	8	26.7	12	40.0	12	40.0	6	20.0
	2008	30	5	16.7	10	33.3	12	40.0	10	33.3	8	26.7
	Total	210	22	10.5%	39	18.6%	53	25.2%	80	38.1%	77	36.7%
Total	**1996**	**60**	**11**	**18.3**	**13**	**21.7**	**19**	**31.7**	**21**	**35.0**	**20**	**33.3**
	1998	**60**	**10**	**16.7**	**17**	**28.3**	**19**	**31.7**	**13**	**21.7**	**28**	**46.7**
	2000	**60**	**21**	**35.0**	**30**	**50.0**	**32**	**53.3**	**15**	**25.0**	**13**	**21.7**
	2002	**60**	**13**	**21.7**	**22**	**36.7**	**23**	**38.3**	**18**	**30.0**	**19**	**31.7**
	2004	**60**	**8**	**13.3**	**17**	**28.3**	**25**	**41.7**	**13**	**21.7**	**22**	**36.7**
	2006	**60**	**18**	**30.0**	**24**	**40.0**	**30**	**50.0**	**20**	**33.3**	**10**	**16.7**
	2008	**60**	**20**	**33.3**	**28**	**46.7**	**35**	**58.3**	**14**	**23.3**	**11**	**18.3**
	Total	**420**	**101**	**24.0**	**151**	**36.0**	**183**	**43.6**	**114**	**27.1**	**123**	**29.3**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table. Since there are two members for each Arizona House of Representatives district, the margin of victory represents the percentage point difference between the second place winner and first runner up. For a detailed explanation, see the section in this section entitled, *Additional Factors We Assessed in Evaluating Maine's and Arizona's Public Financing Programs, Calculating Multimember District Victory Margins and Electoral Competition*.

Table 19: Winner's Victory Margin in Contested Legislative Races in Colorado, General Elections, 1996 through 2008

			Contested races								Uncontested races	
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up			
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	65	13	20.0%	18	27.7%	19	29.2%	28	43.1%	18	27.7%
	1998	65	13	20.0	20	30.8	25	38.5	31	47.7	9	13.8
	2000	65	16	24.6	20	30.8	26	40.0	38	58.5	1	1.5
	2002	65	19	29.2	22	33.8	25	38.5	31	47.7	9	13.8
	2004	65	12	18.5	19	29.2	24	36.9	30	46.2	11	16.9
	2006	65	12	18.5	20	30.8	26	40.0	27	41.5	12	18.5
	2008	65	9	13.8	14	21.5	28	43.1	29	44.6	8	12.3
	Total	**455**	**94**	**20.7%**	**133**	**29.2%**	**173**	**38.0%**	**214**	**47.0%**	**68**	**14.9%**
Senate	1996	19	5	26.3	9	47.4	9	47.4	4	21.1	6	31.6
	1998	17	7	41.2	7	41.2	9	52.9	5	29.4	3	17.6
	2000	19	8	42.1	12	63.2	12	63.2	7	36.8	0	0.0
	2002	17	4	23.5	4	23.5	6	35.3	10	58.8	1	5.9
	2004	18	3	16.7	7	38.9	9	50.0	6	33.3	3	16.7
	2006	18	2	11.1	4	22.2	5	27.8	11	61.1	2	11.1
	2008	19	5	26.3	6	31.6	9	47.4	8	42.1	2	10.5
	Total	**127**	**34**	**26.8%**	**49**	**38.6%**	**59**	**46.5%**	**51**	**40.2%**	**17**	**13.4%**
Total	**1996**	**84**	**18**	**21.4**	**27**	**32.1**	**28**	**33.3**	**32**	**38.1**	**24**	**28.6**
	1998	**82**	**20**	**24.4**	**27**	**32.9**	**34**	**41.5**	**36**	**43.9**	**12**	**14.6**
	2000	**84**	**24**	**28.6**	**32**	**38.1**	**38**	**45.2**	**45**	**53.6**	**1**	**1.2**
	2002	**82**	**23**	**28.0**	**26**	**31.7**	**31**	**37.8**	**41**	**50.0**	**10**	**12.2**
	2004	**83**	**15**	**18.1**	**26**	**31.3**	**33**	**39.8**	**36**	**43.4**	**14**	**16.9**
	2006	**83**	**14**	**16.9**	**24**	**28.9**	**31**	**37.3**	**38**	**45.8**	**14**	**16.9**
	2008	**84**	**14**	**16.7**	**20**	**23.8**	**37**	**44.0**	**37**	**44.0**	**10**	**11.9**
	Total	**582**	**128**	**22.0**	**182**	**31.3**	**232**	**39.9**	**265**	**45.5**	**85**	**14.6**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table.

Table 20: Winner's Victory Margin in Contested Legislative Races in Connecticut, General Elections, 1996 through 2008

			Contested races								Uncontested races	
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up			
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	151	11	7.3%	23	15.2%	33	21.9%	82	54.3%	36	23.8%
	1998	151	9	6.0	26	17.2	34	22.5	80	53.0	37	24.5
	2000	151	13	8.6	23	15.2	29	19.2	69	45.7	53	35.1
	2002	151	22	14.6	30	19.9	42	27.8	72	47.7	37	24.5
	2004	151	15	9.9	25	16.6	33	21.9	84	55.6	34	22.5
	2006	151	17	11.3	23	15.2	27	17.9	84	55.6	40	26.5
	2008	151	16	10.6	28	18.5	33	21.9	72	47.7	46	30.5
	Total	**1,057**	**103**	**9.7%**	**178**	**16.8%**	**231**	**21.9%**	**543**	**51.4%**	**283**	**26.8%**
Senate	1996	36	7	19.4	12	33.3	16	44.4	16	44.4	4	11.1
	1998	36	2	5.6	6	16.7	6	16.7	25	69.4	5	13.9
	2000	36	2	5.6	3	8.3	5	13.9	22	61.1	9	25.0
	2002	36	5	13.9	6	16.7	7	19.4	23	63.9	6	16.7
	2004	36	6	16.7	6	16.7	8	22.2	23	63.9	5	13.9
	2006	36	6	16.7	7	19.4	10	27.8	20	55.6	6	16.7
	2008	36	6	16.7	7	19.4	11	30.6	18	50.0	7	19.4
	Total	**252**	**34**	**13.5%**	**47**	**18.7%**	**63**	**25.0%**	**147**	**58.3%**	**42**	**16.7%**
Total	**1996**	**187**	**18**	**9.6**	**35**	**18.7**	**49**	**26.2**	**98**	**52.4**	**40**	**21.4**
	1998	**187**	**11**	**5.9**	**32**	**17.1**	**40**	**21.4**	**105**	**56.1**	**42**	**22.5**
	2000	**187**	**15**	**8.0**	**26**	**13.9**	**34**	**18.2**	**91**	**48.7**	**62**	**33.2**
	2002	**187**	**27**	**14.4**	**36**	**19.3**	**49**	**26.2**	**95**	**50.8**	**43**	**23.0**
	2004	**187**	**21**	**11.2**	**31**	**16.6**	**41**	**21.9**	**107**	**57.2**	**39**	**20.9**
	2006	**187**	**23**	**12.3**	**30**	**16.0**	**37**	**19.8**	**104**	**55.6**	**46**	**24.6**
	2008	**187**	**22**	**11.8**	**35**	**18.7**	**44**	**23.5**	**90**	**48.1**	**53**	**28.3**
	Total	**1,309**	**137**	**10.5**	**225**	**17.2**	**294**	**22.5**	**690**	**52.7**	**325**	**24.8**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table.

Table 21: Winner's Victory Margin in Contested Legislative Races in Montana, General Elections, 1996 through 2008

			Contested races								Uncontested races	
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up			
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	00	18	18.0%	28	28.0%	36	36.0%	30	30.0%	34	34.0%
	1998	100	18	18.0	27	27.0	31	31.0	28	28.0	41	41.0
	2000	100	25	25.0	39	39.0	42	42.0	42	42.0	16	16.0
	2002	100	21	21.0	29	29.0	40	40.0	40	40.0	20	20.0
	2004	100	21	21.0	30	30.0	42	42.0	40	40.0	18	18.0
	2006	100	18	18.0	27	27.0	42	42.0	43	43.0	15	15.0
	2008	100	17	17.0	30	30.0	39	39.0	46	46.0	15	15.0
	Total	700	138	19.7%	210	30.0%	272	38.9%	269	38.4%	159	22.7%
Senate	1996	25	3	12.0	4	16.0	6	24.0	13	52.0	6	24.0
	1998	26	2	7.7	5	19.2	8	30.8	6	23.1	12	46.2
	2000	26	4	15.4	7	26.9	9	34.6	8	30.8	9	34.6
	2002	25	4	16.0	5	20.0	7	28.0	11	44.0	7	28.0
	2004	25	4	16.0	8	32.0	10	40.0	7	28.0	8	32.0
	2006	25	2	8.0	5	20.0	8	32.0	15	60.0	2	8.0
	2008	25	6	24.0	6	24.0	7	28.0	11	44.0	7	28.0
	Total	177	25	14.1%	40	22.6%	55	31.1%	71	40.1%	51	28.8%
Total	**1996**	**125**	**21**	**16.8**	**32**	**25.6**	**42**	**33.6**	**43**	**34.4**	**40**	**32.0**
	1998	**126**	**20**	**15.9**	**32**	**25.4**	**39**	**31.0**	**34**	**27.0**	**53**	**42.1**
	2000	**126**	**29**	**23.0**	**46**	**36.5**	**51**	**40.5**	**50**	**39.7**	**25**	**19.8**
	2002	**125**	**25**	**20.0**	**34**	**27.2**	**47**	**37.6**	**51**	**40.8**	**27**	**21.6**
	2004	**125**	**25**	**20.0**	**38**	**30.4**	**52**	**41.6**	**47**	**37.6**	**26**	**20.8**
	2006	**125**	**20**	**16.0**	**32**	**25.6**	**50**	**40.0**	**58**	**46.4**	**17**	**13.6**
	2008	**125**	**23**	**18.4**	**36**	**28.8**	**46**	**36.8**	**57**	**45.6**	**22**	**17.6**
	Total	**877**	**163**	**18.6**	**250**	**28.5**	**327**	**37.3**	**340**	**38.8**	**210**	**23.9**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table.

Table 22: Winner's Victory Margin in Contested Legislative Races in South Dakota, General Elections, 1996 through 2008

			Contested races								Uncontested races	
			Less than 10 percentage point margin between the winner and first runner up		Less than15 percentage point margin of victory between the winner and first runner up		Less than 20 percentage point margin of victory between the winner and first runner up		Greater than 20 percentage point margin between the winner and first runner up			
	Election year	Total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners	Number of winners	Percent of total winners
House of Representatives	1996	36	20	55.6%	24	66.7%	30	83.3%	2	5.6%	4	11.1%
	1998	35	14	40.0	19	54.3	23	65.7	5	14.3	7	20.0
	2000	36	19	52.8	24	66.7	25	69.4	8	22.2	3	8.3
	2002	36	9	25.0	14	38.9	21	58.3	7	19.4	8	22.2
	2004	36	14	38.9	18	50.0	22	61.1	5	13.9	9	25.0
	2006	37	21	56.8	25	67.6	26	70.3	8	21.6	3	8.1
	2008	37	16	43.2	24	64.9	32	86.5	4	10.8	1	2.7
	Total	**253**	**113**	**44.7%**	**148**	**58.5%**	**179**	**70.8%**	**39**	**15.4%**	**35**	**13.8%**
Senate	1996	35	7	20.0	9	25.7	14	40.0	14	40.0	7	20.0
	1998	35	3	8.6	5	14.3	6	17.1	17	48.6	12	34.3
	2000	35	4	11.4	6	17.1	10	28.6	14	40.0	11	31.4
	2002	35	4	11.4	7	20.0	8	22.9	11	31.4	16	45.7
	2004	35	2	5.7	8	22.9	9	25.7	15	42.9	11	31.4
	2006	35	14	40.0	19	54.3	22	62.9	9	25.7	4	11.4
	2008	35	13	37.1	14	40.0	18	51.4	16	45.7	1	2.9
	Total	**245**	**47**	**19.2%**	**68**	**27.8%**	**87**	**35.5%**	**96**	**39.2%**	**62**	**25.3%**
Total	**1996**	**71**	**27**	**38.0**	**33**	**46.5**	**44**	**62.0**	**16**	**22.5**	**11**	**15.5**
	1998	**70**	**17**	**24.3**	**24**	**34.3**	**29**	**41.4**	**22**	**31.4**	**19**	**27.1**
	2000	**71**	**23**	**32.4**	**30**	**42.3**	**35**	**49.3**	**22**	**31.0**	**14**	**19.7**
	2002	**71**	**13**	**18.3**	**21**	**29.6**	**29**	**40.8**	**18**	**25.4**	**24**	**33.8**
	2004	**71**	**16**	**22.5**	**26**	**36.6**	**31**	**43.7**	**20**	**28.2**	**20**	**28.2**
	2006	**72**	**35**	**48.6**	**44**	**61.1**	**48**	**66.7**	**17**	**23.6**	**7**	**9.7**
	2008	**72**	**29**	**40.3**	**38**	**52.8**	**50**	**69.4**	**20**	**27.8**	**2**	**2.8**
	Total	**498**	**160**	**32.1**	**216**	**43.4**	**266**	**53.4**	**135**	**27.1**	**97**	**19.5**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. . Figure 9 in the accompanying report (GAO-10-390) plots the percentage of close races (less than 10 percentage points between the winner and first runner up) and landslide races (more than 20 percent between the winner and first runner up) and is not directly comparable to this table. For the House of Representatives districts with two members, the margin of victory represents the percentage point difference between the second winner and first runner-up. For a detailed explanation, see the section in this section entitled, *Additional Factors We Assessed in Evaluating Maine's and Arizona's Public Financing Programs, Calculating Multimember District Victory Margins and Electoral Competition*.

Table 23: Contested Legislative Races in Maine, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Contested races		Uncontested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	295	36	12.2%	259	87.8%	151	140	92.7%	11	7.3%
	1998	276	15	5.4	261	94.6	151	117	77.5	34	22.5
	2000	273	20	7.3	253	92.7	151	118	78.1	33	21.9
	2002	294	21	7.1	273	92.9	151	132	87.4	19	12.6
	2004	319	26	8.2	293	91.8	151	148	98.0	3	2.0
	2006	310	22	7.1	288	92.9	151	147	97.4	4	2.6
	2008	300	19	6.3	281	93.7	151	133	88.1	18	11.9
Senate	1996	68	7	10.3	61	89.7	35	33	94.3	2	5.7
	1998	65	3	4.6	62	95.4	35	30	85.7	5	14.3
	2000	69	5	7.2	64	92.8	35	34	97.1	1	2.9
	2002	73	8	11.0	65	89.0	35	31	88.6	4	11.4
	2004	70	10	14.3	60	85.7	35	33	94.3	2	5.7
	2006	72	5	6.9	67	93.1	35	35	100.0	0	0
	2008	72	6	8.3	66	91.7	35	35	100.0	0	0
Total	**1996**	**363**	**43**	**11.8**	**320**	**88.2**	**186**	**173**	**93.0**	**13**	**7.0**
	1998	**341**	**18**	**5.3**	**323**	**94.7**	**186**	**147**	**79.0**	**39**	**21.0**
	2000	**342**	**25**	**7.3**	**317**	**92.7**	**186**	**152**	**81.7**	**34**	**18.3**
	2002	**367**	**29**	**7.9**	**338**	**92.1**	**186**	**163**	**87.6**	**23**	**12.4**
	2004	**389**	**36**	**9.3**	**353**	**90.7**	**186**	**181**	**97.3**	**5**	**2.7**
	2006	**382**	**27**	**7.1**	**355**	**92.9**	**186**	**182**	**97.8**	**4**	**2.2**
	2008	**372**	**25**	**6.7**	**347**	**93.3**	**186**	**168**	**90.3**	**18**	**9.7**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 24: Contested Legislative Races in Arizona, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Contested races		Uncontested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	59	23	39.0%	36	61.0%	30	22	73.3%	8	26.7%
	1998	54	12	22.2	42	77.8	30	19	63.3	11	36.7
	2000	61	21	34.4	40	65.6	30	25	83.3	5	16.7
	2002	57	27	47.4	30	52.6	30	23	76.7	7	23.3
	2004	55	21	38.2	34	61.8	30	22	73.3	8	26.7
	2006	60	20	33.3	40	66.7	30	26	86.7	4	13.3
	2008	65	16	24.6	49	75.4					
							30	27	90.0	3	10.0
Senate	1996	53	9	17.0	44	83.0	30	18	60.0	12	40.0
	1998	46	6	13.0	40	87.0	30	13	43.3	17	56.7
	2000	57	14	24.6	43	75.4	30	22	73.3	8	26.7
	2002	50	14	28.0	36	72.0	30	18	60.0	12	40.0
	2004	48	7	14.6	41	85.4	30	16	53.3	14	46.7
	2006	56	8	14.3	48	85.7	30	24	80.0	6	20.0
	2008	54	5	9.3	49	90.7	30	22	73.3	8	26.7
Total	**1996**	**112**	**32**	**28.6**	**80**	**71.4**	**60**	**40**	**66.7**	**20**	**33.3**
	1998	**100**	**18**	**18.0**	**82**	**82.0**	**60**	**32**	**53.3**	**28**	**46.7**
	2000	**118**	**35**	**29.7**	**83**	**70.3**	**60**	**47**	**78.3**	**13**	**21.7**
	2002	**107**	**41**	**38.3**	**66**	**61.7**	**60**	**41**	**68.3**	**19**	**31.7**
	2004	**103**	**28**	**27.2**	**75**	**72.8**	**60**	**38**	**63.3**	**22**	**36.7**
	2006	**116**	**28**	**24.1**	**88**	**75.9**	**60**	**50**	**83.3**	**10**	**16.7**
	2008	**119**	**21**	**17.6**	**98**	**82.4**	**60**	**49**	**81.7**	**11**	**18.3**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 25: Contested Legislative Races in Colorado, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Contested races		Uncontested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	111	11	9.9%	100	90.1%	65	47	72.3%	18	27.7%
	1998	114	17	14.9	97	85.1	65	56	86.2	9	13.8
	2000	109	15	13.8	94	86.2	65	64	98.5	1	1.5
	2002	112	16	14.3	96	85.7	65	56	86.2	9	13.8
	2004	114	8	7.0	106	93.0	65	54	83.1	11	16.9
	2006	116	13	11.2	103	88.8	65	53	81.5	12	18.5
	2008	121	15	12.4	106	87.6	65	57	87.7	8	12.3
Senate	1996	32	6	18.8	26	81.3	19	13	68.4	6	31.6
	1998	31	5	16.1	26	83.9	17	14	82.4	3	17.6
	2000	34	6	17.6	28	82.4	19	19	100.0	0	0
	2002	29	2	6.9	27	93.1	17	16	94.1	1	5.9
	2004	32	1	3.1	31	96.9	18	15	83.3	3	16.7
	2006	34	7	20.6	27	79.4	18	16	88.9	2	11.1
	2008	36	4	11.1	32	88.9	19	17	89.5	2	10.5
Total	**1996**	**143**	**17**	**11.9**	**126**	**88.1**	**84**	**60**	**71.4**	**24**	**28.6**
	1998	**145**	**22**	**15.2**	**123**	**84.8**	**82**	**70**	**85.4**	**12**	**14.6**
	2000	**143**	**21**	**14.7**	**122**	**85.3**	**84**	**83**	**98.8**	**1**	**1.2**
	2002	**141**	**18**	**12.8**	**123**	**87.2**	**82**	**72**	**87.8**	**10**	**12.2**
	2004	**146**	**9**	**6.2**	**137**	**93.8**	**83**	**69**	**83.1**	**14**	**16.9**
	2006	**150**	**20**	**13.3**	**130**	**86.7**	**83**	**69**	**83.1**	**14**	**16.9**
	2008	**157**	**19**	**12.1**	**138**	**87.9**	**84**	**74**	**88.1**	**10**	**11.9**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 26: Contested Legislative Races in Connecticut, Primary and General Elections, 1996 through 2008

		Primary elections			General elections				
			Contested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	6	6	100.0%	151	115	76.2%	36	23.8%
	1998	15	15	100.0	151	114	75.5	37	24.5
	2000	7	7	100.0	151	98	64.9	53	35.1
	2002	9	9	100.0	151	114	75.5	37	24.5
	2004	10	10	100.0	151	117	77.5	34	22.5
	2006	12	12	100.0	151	111	73.5	40	26.5
	2008	14	14	100.0	151	105	69.5	46	30.5
Senate	1996	1	1	100.0	36	32	88.9	4	11.1
	1998	1	1	100.0	36	31	86.1	5	13.9
	2000	1	1	100.0	36	27	75.0	9	25.0
	2002	1	1	100.0	36	30	83.3	6	16.7
	2004	2	2	100.0	36	31	86.1	5	13.9
	2006	0	0	0	36	30	83.3	6	16.7
	2008	4	4	100.0	36	29	80.6	7	19.4
Total	**1996**	**7**	**7**	**100.0**	**187**	**147**	**78.6**	**40**	**21.4**
	1998	**16**	**16**	**100.0**	**187**	**145**	**77.5**	**42**	**22.5**
	2000	**8**	**8**	**100.0**	**187**	**125**	**66.8**	**62**	**33.2**
	2002	**10**	**10**	**100.0**	**187**	**144**	**77.0**	**43**	**23.0**
	2004	**12**	**12**	**100.0**	**187**	**148**	**79.1**	**39**	**20.9**
	2006	**12**	**12**	**100.0**	**187**	**141**	**75.4**	**46**	**24.6**
	2008	**18**	**18**	**100.0**	**187**	**134**	**71.7**	**53**	**28.3**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 27: Contested Legislative Races in Montana, Primary and General Elections, 1996 through 2008

		Primary elections					General elections				
			Contested races		Uncontested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	168	21	12.5%	147	87.5%	100	66	66.0%	34	34.0%
	1998	158	32	20.3	126	79.7	100	59	59.0	41	41.0
	2000	183	34	18.6	149	81.4	100	84	84.0	16	16.0
	2002	173	28	16.2	145	83.8	100	80	80.0	20	20.0
	2004	177	30	16.9	147	83.1	100	82	82.0	18	18.0
	2006	183	33	18.0	150	82.0	100	85	85.0	15	15.0
	2008	184	35	19.0	149	81.0	100	85	85.0	15	15.0
Senate	1996	45	6	13.3	39	86.7	25	19	76.0	6	24.0
	1998	38	8	21.1	30	78.9	26	14	53.8	12	46.2
	2000	43	8	18.6	35	81.4	26	17	65.4	9	34.6
	2002	43	8	18.6	35	81.4	25	18	72.0	7	28.0
	2004	41	11	26.8	30	73.2	25	17	68.0	8	32.0
	2006	47	7	14.9	40	85.1	25	23	92.0	2	8.0
	2008	41	11	26.8	30	73.2	25	18	72.0	7	28.0
Total	**1996**	**213**	**27**	**12.7**	**186**	**87.3**	**125**	**85**	**68.0**	**40**	**32.0**
	1998	**196**	**40**	**20.4**	**156**	**79.6**	**126**	**73**	**57.9**	**53**	**42.1**
	2000	**226**	**42**	**18.6**	**184**	**81.4**	**126**	**101**	**80.2**	**25**	**19.8**
	2002	**216**	**36**	**16.7**	**180**	**83.3**	**125**	**98**	**78.4**	**27**	**21.6**
	2004	**218**	**41**	**18.8**	**177**	**81.2**	**125**	**99**	**79.2**	**26**	**20.8**
	2006	**230**	**40**	**17.4**	**190**	**82.6**	**125**	**108**	**86.4**	**17**	**13.6**
	2008	**225**	**46**	**20.4**	**179**	**79.6**	**125**	**103**	**82.4**	**22**	**17.6**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 28: Contested Legislative Races in South Dakota, Primary and General Elections, 1996 through 2008

		Primary elections			General elections				
			Contested races			Contested races		Uncontested races	
	Election year	Total races	Number	Percent of total	Total races	Number	Percent of total	Number	Percent of total
House of Representatives	1996	7	7	100.0%	36	32	88.9%	4	11.1%
	1998	12	12	100.0	35	28	80.0	7	20.0
	2000	19	19	100.0	36	33	91.7	3	8.3
	2002	18	18	100.0	36	28	77.8	8	22.2
	2004	12	12	100.0	36	27	75.0	9	25.0
	2006	12	12	100.0	37	34	91.9	3	8.1
	2008	20	20	100.0	37	36	97.3	1	2.7
Senate	1996	7	7	100.0	35	28	80.0	7	20.0
	1998	1	1	100.0	35	23	65.7	12	34.3
	2000	5	5	100.0	35	24	68.6	11	31.4
	2002	8	8	100.0	35	19	54.3	16	45.7
	2004	13	13	100.0	35	24	68.6	11	31.4
	2006	16	16	100.0	35	31	88.6	4	11.4
	2008	11	11	100.0	35	34	97.1	1	2.9
Total	**1996**	**14**	**14**	**100.0**	**71**	**60**	**84.5**	**11**	**15.5**
	1998	**13**	**13**	**100.0**	**70**	**51**	**72.9**	**19**	**27.1**
	2000	**24**	**24**	**100.0**	**71**	**57**	**80.3**	**14**	**19.7**
	2002	**26**	**26**	**100.0**	**71**	**47**	**66.2**	**24**	**33.8**
	2004	**25**	**25**	**100.0**	**71**	**51**	**71.8**	**20**	**28.2**
	2006	**28**	**28**	**100.0**	**72**	**65**	**90.3**	**7**	**9.7**
	2008	**31**	**31**	**100.0**	**72**	**70**	**97.2**	**2**	**2.8**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Contested races are races with at least one or more candidates running than the number of seats in contention. Data used in figure 10 in the accompanying report (GAO-10-390) are comparable to the data presented in this table.

Table 29: Incumbent Reelection Rates in Legislative Races in Maine, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	101	100	99.0%	23	22	95.7%	124	122	98.4%
	1998	120	117	97.5	30	30	100	150	147	98.0
	2000	118	117	99.2	21	21	100	139	138	99.3
	2002	103	101	98.1	25	24	96.0	128	125	97.7
	2004	111	110	99.1	23	23	100	134	133	99.3
	2006	114	113	99.1	27	27	100	141	140	99.3
	2008	110	110	100	27	27	100	137	137	100
	All	**777**	**768**	**98.8%**	**176**	**174**	**98.9%**	**953**	**942**	**98.8%**
General elections	1996	97	85	87.6	23	21	91.3	120	106	88.3
	1998	118	105	89.0	31	31	100	149	136	91.3
	2000	112	105	93.8	22	20	90.9	134	125	93.3
	2002	95	81	85.3	25	23	92.0	120	104	86.7
	2004	109	99	90.8	22	16	72.7	131	115	87.8
	2006	113	100	88.5	28	27	96.4	141	127	90.1
	2008	108	100	92.6	27	25	92.6	135	125	92.6
	All	**752**	**675**	**89.8%**	**178**	**163**	**91.6%**	**930**	**838**	**90.1%**
Total	**1996**	**198**	**185**	**93.4**	**46**	**43**	**93.5**	**244**	**228**	**93.4**
	1998	**238**	**222**	**93.3**	**61**	**61**	**100**	**299**	**283**	**94.6**
	2000	**230**	**222**	**96.5**	**43**	**41**	**95.3**	**273**	**263**	**96.3**
	2002	**198**	**182**	**91.9**	**50**	**47**	**94.0**	**248**	**229**	**92.3**
	2004	**220**	**209**	**95.0**	**45**	**39**	**86.7**	**265**	**248**	**93.6**
	2006	**227**	**213**	**93.8**	**55**	**54**	**98.2**	**282**	**267**	**94.7**
	2008	**218**	**210**	**96.3**	**54**	**52**	**96.3**	**272**	**262**	**96.3**
	All	**1,529**	**1,443**	**94.4**	**354**	**337**	**95.2**	**1,883**	**1,780**	**94.5**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 30: Incumbent Reelection Rates in Legislative Races in Arizona, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	43	42	97.7%	20	19	95.0%	63	61	96.8%
	1998	45	45	100	24	24	100	69	69	100
	2000	36	35	97.2	20	20	100	56	55	98.2
	2002	39	30	76.9	16	13	81.3	55	43	78.2
	2004	43	37	86.0	22	21	95.5	65	58	89.2
	2006	45	43	95.6	22	21	95.5	67	64	95.5
	2008	42	40	95.2	23	22	95.7	65	62	95.4
	All	**293**	**272**	**92.8%**	**147**	**140**	**95.2%**	**440**	**412**	**93.6%**
General elections	1996	42	40	95.2	19	19	100	61	59	96.7
	1998	45	44	97.8	24	23	95.8	69	67	97.1
	2000	35	33	94.3	20	20	100	55	53	96.4
	2002	30	27	90.0	13	13	100	43	40	93.0
	2004	38	36	94.7	21	21	100	59	57	96.6
	2006	43	41	95.3	21	21	100	64	62	96.9
	2008	40	38	95.0	22	22	100	62	60	96.8
	All	**273**	**259**	**94.9%**	**140**	**139**	**99.3%**	**413**	**398**	**96.4%**
Total	**1996**	**85**	**82**	**96.5**	**39**	**38**	**97.4**	**124**	**120**	**96.8**
	1998	**90**	**89**	**98.9**	**48**	**47**	**97.9**	**138**	**136**	**98.6**
	2000	**71**	**68**	**95.8**	**40**	**40**	**100**	**111**	**108**	**97.3**
	2002	**69**	**57**	**82.6**	**29**	**26**	**89.7**	**98**	**83**	**84.7**
	2004	**81**	**73**	**90.1**	**43**	**42**	**97.7**	**124**	**115**	**92.7**
	2006	**88**	**84**	**95.5**	**43**	**42**	**97.7**	**131**	**126**	**96.2**
	2008	**82**	**78**	**95.1**	**45**	**44**	**97.8**	**127**	**122**	**96.1**
	All	**566**	**531**	**93.8**	**287**	**279**	**97.2**	**853**	**810**	**95.0**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 31: Incumbent Reelection Rates in Legislative Races in Colorado, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	44	44	100%	10	10	100%	54	54	100%
	1998	40	40	100	6	6	100	46	46	100
	2000	41	41	100	7	7	100	48	48	100
	2002	49	49	100	8	8	100	57	57	100
	2004	46	46	100	11	11	100	57	57	100
	2006	40	40	100	9	9	100	49	49	100
	2008	46	46	100	8	8	100	54	54	100
	All	**306**	**306**	**100%**	**59**	**59**	**100%**	**365**	**365**	**100%**
General elections	1996	44	43	97.7	10	9	90.0	54	52	96.3
	1998	40	40	100	6	6	100	46	46	100
	2000	41	38	92.7	7	6	85.7	48	44	91.7
	2002	49	46	93.9	8	8	100	57	54	94.7
	2004	46	43	93.5	11	10	90.9	57	53	93.0
	2006	40	37	92.5	9	7	77.8	49	44	89.8
	2008	47	45	95.7	8	8	100	55	53	96.4
	All	**307**	**292**	**95.1%**	**59**	**54**	**91.5%**	**366**	**346**	**94.5%**
Total	**1996**	**88**	**87**	**98.9**	**20**	**19**	**95.0**	**108**	**106**	**98.1**
	1998	**80**	**80**	**100**	**12**	**12**	**100**	**92**	**92**	**100**
	2000	**82**	**79**	**96.3**	**14**	**13**	**92.9**	**96**	**92**	**95.8**
	2002	**98**	**95**	**96.9**	**16**	**16**	**100**	**114**	**111**	**97.4**
	2004	**92**	**89**	**96.7**	**22**	**21**	**95.5**	**114**	**110**	**96.5**
	2006	**80**	**77**	**96.3**	**18**	**16**	**88.9**	**98**	**93**	**94.9**
	2008	**93**	**91**	**97.8**	**16**	**16**	**100**	**109**	**107**	**98.2**
	All	**613**	**598**	**97.6%**	**118**	**113**	**95.8%**	**731**	**711**	**97.3%**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 32: Incumbent Reelection Rates in Legislative Races in Connecticut, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	5	4	80.0%	0	0	n.a.	5	4	80.0%
	1998	6	6	100	0	0	n.a.	6	6	100
	2000	3	2	66.7	1	1	100	4	3	75.0
	2002	6	5	83.3	1	1	100	7	6	85.7
	2004	6	4	66.7	1	1	100	7	5	71.4
	2006	5	3	60.0	0	0	n.a.	5	3	60.0
	2008	6	6	100	1	1	100	7	7	100
	All	**37**	**30**	**81.1%**	**4**	**4**	**100%**	**41**	**34**	**82.9%**
General elections	1996	142	137	96.5	35	33	94.3	177	170	96.0
	1998	133	131	98.5	32	32	100	165	163	98.8
	2000	137	135	98.5	34	33	97.1	171	168	98.2
	2002	132	124	93.9	34	32	94.1	166	156	94.0
	2004	135	132	97.8	33	31	93.9	168	163	97.0
	2006	135	130	96.3	32	32	100	167	162	97.0
	2008	130	124	95.4	32	31	96.9	162	155	95.7
	All	**944**	**913**	**96.7%**	**232**	**224**	**96.6%**	**1,176**	**1,137**	**96.7%**
Total	**1996**	**147**	**141**	**95.9**	**35**	**33**	**94.3**	**182**	**174**	**95.6**
	1998	**139**	**137**	**98.6**	**32**	**32**	**100**	**171**	**169**	**98.8**
	2000	**140**	**137**	**97.9**	**35**	**34**	**97.1**	**175**	**171**	**97.7**
	2002	**138**	**129**	**93.5**	**35**	**33**	**94.3**	**173**	**162**	**93.6**
	2004	**141**	**136**	**96.5**	**34**	**32**	**94.1**	**175**	**168**	**96.0**
	2006	**140**	**133**	**95.0**	**32**	**32**	**100**	**172**	**165**	**95.9**
	2008	**136**	**130**	**95.6**	**33**	**32**	**97.0**	**169**	**162**	**95.9**
	All	**981**	**943**	**96.1%**	**236**	**228**	**96.6%**	**1,217**	**1,171**	**96.2%**

n.a. = not applicable.

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 33: Incumbent Reelection Rates in Legislative Races in Montana, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	94	90	95.7%	18	18	100%	112	108	96.4%
	1998	73	70	95.9	17	15	88.2	90	85	94.4
	2000	53	53	100	13	13	100	66	66	100
	2002	76	76	100	7	7	100	83	83	100
	2004	71	68	95.8	11	11	100	82	79	96.3
	2006	77	75	97.4	17	17	100	94	92	97.9
	2008	69	65	94.2	13	12	92.3	82	77	93.9
	All	**513**	**497**	**96.9%**	**96**	**93**	**96.9%**	**609**	**590**	**96.9%**
General elections	1996	90	83	92.2	18	17	94.4	108	100	92.6
	1998	70	62	88.6	16	16	100	86	78	90.7
	2000	54	49	90.7	13	12	92.3	67	61	91.0
	2002	76	69	90.8	7	6	85.7	83	75	90.4
	2004	68	62	91.2	11	11	100	79	73	92.4
	2006	75	69	92.0	17	17	100	92	86	93.5
	2008	65	62	95.4	12	11	91.7	77	73	94.8
	All	**498**	**456**	**91.6%**	**94**	**90**	**95.7%**	**592**	**546**	**92.2%**
Total	**1996**	**184**	**173**	**94.0**	**36**	**35**	**97.2**	**220**	**208**	**94.5**
	1998	**143**	**132**	**92.3**	**33**	**31**	**93.9**	**176**	**163**	**92.6**
	2000	**107**	**102**	**95.3**	**26**	**25**	**96.2**	**133**	**127**	**95.5**
	2002	**152**	**145**	**95.4**	**14**	**13**	**92.9**	**166**	**158**	**95.2**
	2004	**139**	**130**	**93.5**	**22**	**22**	**100**	**161**	**152**	**94.4**
	2006	**152**	**144**	**94.7**	**34**	**34**	**100**	**186**	**178**	**95.7**
	2008	**134**	**127**	**94.8**	**25**	**23**	**92.0**	**159**	**150**	**94.3**
	All	**1,011**	**953**	**94.3%**	**190**	**183**	**96.3%**	**1,201**	**1,136**	**94.6%**

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 34: Incumbent Reelection Rates in Legislative Races in South Dakota, Primary and General Elections, 1996 through 2008

		House of Representatives			Senate			Total		
	Election year	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents	Number of incumbents	Number of incumbents who won	Percent of total incumbents
Primary elections	1996	3	3	100%	2	2	100%	5	5	100%
	1998	16	13	81.3	0	0	n.a.	16	13	81.3
	2000	15	12	80.0	1	0	0.0	16	12	75.0
	2002	20	18	90.0	5	4	80.0	25	22	88.0
	2004	9	7	77.8	3	2	66.7	12	9	75.0
	2006	8	8	100	8	4	50.0	16	12	75.0
	2008	11	11	100	3	3	100	14	14	100
	All	**82**	**72**	**87.8%**	**22**	**15**	**68.2%**	**104**	**87**	**83.7%**
General elections	1996	47	44	93.6	28	24	85.7	75	68	90.7
	1998	50	46	92.0	31	31	100	81	77	95.1
	2000	37	33	89.2	22	21	95.5	59	54	91.5
	2002	51	48	94.1	24	23	95.8	75	71	94.7
	2004	48	46	95.8	22	21	95.5	70	67	95.7
	2006	54	49	90.7	26	24	92.3	80	73	91.3
	2008	38	36	94.7	24	19	79.2	62	55	88.7
	All	**325**	**302**	**92.9%**	**177**	**163**	**92.1%**	**502**	**465**	**92.6%**
Total	1996	50	47	94.0	30	26	86.7	80	73	91.3%
	1998	66	59	89.4	31	31	100	97	90	92.8
	2000	52	45	86.5	23	21	91.3	75	66	88.0
	2002	71	66	93.0	29	27	93.1	100	93	93.0
	2004	57	53	93.0	25	23	92.0	82	76	92.7
	2006	62	57	91.9	34	28	82.4	96	85	88.5
	2008	49	47	95.9	27	22	81.5	76	69	90.8
	All	**407**	**374**	**91.9%**	**199**	**178**	**89.4%**	**606**	**552**	**91.1%**

n.a. = not applicable.

Notes: We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are any candidates who are not incumbents, regardless of whether they faced an opponent in their race. Figure 11 in the accompanying report (GAO-10-390) plots the percentage of races with a winning incumbent and is not directly comparable to this table.

Table 35: Percent of Races with Third-Party or Independent Candidates Receiving 5 Percent or More of Votes Cast in Maine, General Election Candidates, 1996 through 2008

	House of Representatives						Senate					
		Races with third-party or independent candidates			Races with viable third-party or independent candidates			Races with third-party or independent candidates			Races with viable third-party or independent candidates	
Election year	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total
1996	151	16	10.6%	151	16	10.6%	35	4	11.4%	35	4	11.4%
1998	151	12	7.9	151	11	7.3	35	5	14.3	35	4	11.4
2000	151	22	14.6	151	20	13.2	35	3	8.6	35	3	8.6
2002	151	21	13.9	151	20	13.2	35	5	14.3	35	5	14.3
2004	151	23	15.2	151	22	14.6	35	5	14.3	35	4	11.4
2006	151	16	10.6	151	15	9.9	35	6	17.1	35	5	14.3
2008	151	13	8.6	151	13	8.6	35	4	11.	35	4	11.4
Total	**1,057**	**123**	**11.6%**	**1,057**	**117**	**11.1%**	**245**	**32**	**13.1%**	**245**	**29**	**11.8%**

Notes: We consider an independent or third-party candidate to be “viable” if the candidate received 5 percent or more of votes cast. This threshold is based on a typical standard for party ballot access and retention, and is distinct from whether a candidate is electable or highly competitive with other candidates. We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 36: Percent of Races with Third Party or Independent Candidates Receiving 5 Percent or More of Votes Cast in Arizona, General Election Candidates, 1996 through 2008

	House of Representatives						Senate					
		Races with third-party or independent candidates			Races with viable third-party or independent candidates			Races with third-party or independent candidates			Races with viable third-party or independent candidates	
Election year	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total	Number of total races	Number	Percent of total
1996	30	9	30.0%	30	4	13.3%	30	5	16.7%	30	4	13.3%
1998	30	5	16.7	30	3	10.0	30	4	13.3	30	3	10.0
2000	30	10	33.3	30	8	26.7	30	9	30.0	30	4	13.3
2002	30	4	13.3	30	3	10.0	30	8	26.7	30	5	16.7
2004	30	9	30.0	30	6	20.0	30	5	16.7	30	3	10.0
2006	30	8	26.7	30	4	13.3	30	5	16.7	30	2	6.7
2008	30	5	16.7	30	3	10.0	30	4	13.3	30	2	6.7
Total	**210**	**50**	**23.8%**	**210**	**31**	**14.8%**	**210**	**40**	**19.0%**	**210**	**23**	**11.0%**

Notes: We consider an independent or third-party candidate to be “viable” if the candidate received 5 percent or more of votes cast. This threshold is based on a typical standard for party ballot access and retention, and is distinct from whether a candidate is electable or highly competitive with other candidates. We excluded candidates who received zero votes and write-in candidates whose names did not appear on the ballot.

Table 37: Average Legislative Candidate Spending in Maine, 1996 through 2008

2008 Dollars

		All candidates			
	Election year	Mean	Median	Total	Number of candidates
House of Representatives	1996	$6,332	$5,423	**$1,868,005**	295
	1998	7,070	5,633	**1,901,897**	269
	2000	4,996	4,389	**1,358,839**	272
	2002	5,938	5,744	**1,704,213**	287
	2004	5,826	5,571	**1,829,474**	314
	2006	6,466	5,593	**1,933,461**	299
	2008	5,091	4,989	**1,450,829**	285
Senate	1996	24,151	23,310	**1,690,546**	70
	1998	26,562	20,539	**1,726,538**	65
	2000	22,599	18,006	**1,627,154**	72
	2002	22,265	23,089	**1,580,829**	71
	2004	29,083	22,446	**2,093,999**	72
	2006	26,256	24,277	**1,969,171**	75
	2008	22,878	21,719	**1,624,341**	71

Notes: We did not include any candidate who reported spending zero dollars or did not run in the general election in Maine. Spending includes both primary and general election expenditures. We adjusted all spending amounts for inflation using the gross domestic product (GDP) price index with 2008 as the base year. The 2004 Maine Senate spending average includes a nonparticipating candidate who spent $225,566.

Table 38: Average Legislative Candidate Spending in Arizona, 2000 through 2008

2008 Dollars

Election year	House of Representatives				Senate			
	Mean	Median	Total	Number of candidates	Mean	Median	Total	Number of candidates
2000	$34,022	$32,305	$3,198,051	94	$48,064	$40,841	$2,210,930	46
2002	35,073	34,500	3,402,090	97	38,940	33,512	1,869,118	48
2004	36,705	35,430	3,376,883	92	40,767	35,059	1,793,736	44
2006	35,667	34,519	3,388,412	95	42,734	34,629	2,264,899	53
2008	48,689	41,613	4,820,249	99	48,869	36,648	2,443,439	50
All	**$38,125**	**$35,120**	**$18,185,685**	**477**	**$43,909**	**$35,472**	**$10,582,122**	**241**

Notes: Average spending includes both primary and general spending for candidates who ran in the general election and reported campaign transactions that totaled more than zero dollars to the Arizona Secretary of State. Candidates who agreed to spend $500 or less were not required to file campaign finance reports with the Secretary of State, according to Arizona Secretary of State officials. Spending has been adjusted for inflation using the gross domestic product (GDP) price index, with 2008 as the base year.

Table 39: Average Legislative Candidate Campaign Spending by Incumbent and Challenger Status in Maine, 1996 through 2008

2008 Dollars

		Incumbent candidates				Challengers running against incumbents				Challengers running in open races			
	Election year	Mean	Median	Total	Number of candidates	Mean	Mean	Total	Number of candidates	Mean	Median	Total	Number of candidates
House of Representatives	1996	$7,288	$5,829	$699,631	96	$5,415	$4,299	$508,963	94	$6,280	$5,547	$659,411	105
	1998	7,977	6,635	933,367	117	6,318	5,375	581,218	92	6,455	5,701	387,312	60
	2000	5,638	4,618	625,806	111	4,128	3,928	371,488	90	5,092	4,212	361,544	71
	2002	5,969	5,856	561,111	94	5,765	5,569	507,329	88	6,055	6,008	635,772	105
	2004	5,987	5,460	652,548	109	5,758	5,565	685,165	119	5,718	5,587	491,761	86
	2006	5,906	5,233	667,340	113	5,835	5,466	676,866	116	8,418	7,824	589,254	70
	2008	4,590	4,633	491,110	107	5,100	5,065	464,134	91	5,696	5,152	495,584	87
Senate	1996	26,839	25,526	617,295	23	16,515	14,869	396,367	24	29,430	31,060	676,885	23
	1998	28,268	25,807	876,315	31	17,800	10,926	480,611	27	52,802	54,404	369,612	7
	2000	19,057	17,954	419,253	22	20,987	17,978	461,722	22	26,649	19,764	746,179	28
	2002	21,352	22,702	533,792	25	19,308	22,975	444,081	23	26,216	23,756	602,957	23
	2004	27,100	22,741	596,210	22	36,191	22,446	796,210	22	25,056	22,822	701,580	28
	2006	26,712	24,222	747,939	28	24,289	24,001	801,540	33	29,978	24,801	419,692	14
	2008	24,538	21,278	662,525	27	19,672	21,459	550,807	28	25,688	25,365	411,009	16

Notes: Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are candidates who ran against an incumbent candidate in the primary or general election. Open race challengers are candidates who did not run against an incumbent in either the primary or general election. Spending amounts do not include any candidate who reported spending zero dollars or did not run in the general election. Spending amounts include both primary and general election amounts and has been adjusted for inflation using the gross domestic product (GDP) price index with 2008 as the base year. The 2004 Maine nonparticipating Senate candidate spending average includes one candidate who spent $225,566.

Table 40: Average Legislative Candidate Campaign Spending by Incumbent and Challenger Status in Arizona, 2000 through 2008

2008 Dollars

		Incumbent candidates				Challengers running against incumbents				Challengers running in open races			
	Election year	Mean	Median	Total	No. of candidates	Mean	Median	Total	No. of candidates	Mean	Median	Total	No. of candidates
House of Representatives	2000	$35,724	$32,798	$1,214,615	34	$28,062	$31,045	$897,989	32	$38,766	$34,651	$1,085,447	28
	2002	37,849	$33,578	1,135,458	30	32,381	34,738	1,295,255	40	35,977	34,285	971,378	27
	2004	36,459	$31,236	1,385,445	38	35,533	35,585	1,421,311	40	40,723	39,780	570,128	14
	2006	34,373	$34,519	1,478,041	43	35,476	33,720	1,419,048	40	40,944	37,375	491,323	12
	2008	48,943	$40,670	1,957,737	40	50,820	43,903	1,981,979	39	44,027	36,994	880,533	20
	All	**$38,764**	**$34,810**	**$7,171,295**	**185**	**$36,731**	**$34,883**	**$7,015,581**	**191**	**$39,592**	**$36,021**	**$3,998,809**	**101**
Senate	2000	40,561	$37,412	770,663	19	39,833	38,492	358,499	9	60,098	55,556	1,081,768	18
	2002	23,959	$18,996	311,461	13	35,894	44,152	215,365	6	46,286	35,430	1,342,293	29
	2004	34,839	$26,427	696,772	20	37,826	43,902	491,742	13	55,020	51,755	605,222	11
	2006	41,858	$33,744	879,020	21	39,664	32,991	594,957	15	46,525	35,823	790,921	17
	2008	41,373	$35,020	868,829	21	40,222	35,752	563,102	14	67,434	44,261	1,011,508	15
	All	**$37,519**	**$30,585**	**$3,526,745**	**94**	**$39,012**	**$36,439**	**$2,223,665**	**57**	**$53,686**	**$43,620**	**$4,831,712**	**90**
Total	**2000**	**37,458**	**$33,619**	**1,985,278**	**53**	**30,646**	**32,282**	**1,256,488**	**41**	**47,113**	**40,841**	**2,167,215**	**46**
	2002	**33,649**	**$28,111**	**1,446,919**	**43**	**32,840**	**34,942**	**1,510,619**	**46**	**41,316**	**34,868**	**2,313,671**	**56**
	2004	**35,900**	**$30,490**	**2,082,216**	**58**	**36,095**	**38,050**	**1,913,053**	**53**	**47,014**	**42,648**	**1,175,350**	**25**
	2006	**36,829**	**$34,518**	**2,357,061**	**64**	**36,618**	**33,608**	**2,014,005**	**55**	**44,215**	**37,016**	**1,282,245**	**29**
	2008	**46,337**	**$36,856**	**2,826,566**	**61**	**48,020**	**42,732**	**2,545,081**	**53**	**54,058**	**40,544**	**1,892,041**	**35**
	All	**$38,344**	**$33,796**	**$10,698,040**	**279**	**$37,255**	**$35,271**	**$9,239,246**	**248**	**$46,233**	**$37,327**	**$8,830,521**	**191**

Notes: Average spending includes both primary and general election spending for candidates who ran in the general election and reported campaign transactions that totaled more than zero dollars to the Arizona Secretary of State. Candidates who agreed to spend $500 or less were not required to file campaign finance reports with the Secretary of State, according to Arizona Secretary of State officials. Incumbents are candidates who held a seat from the previous legislative session in the same chamber. Challengers are candidates who ran against incumbent candidates in the primary or general election. Open race challengers are candidates who did not run against an incumbent in either the primary or general election. Spending amounts have been adjusted for inflation using the gross domestic product (GDP) price index with 2008 as the base year.

Table 41: Average Legislative Spending by Candidates' Participation in the Public Financing Program in Maine, 2000 through 2008

2008 Dollars

		Nonparticipating candidates				Participating candidates			
	Election year	Mean	Median	Total	Number of candidates	Mean	Median	Total	Number of candidates
House of Representatives	2000	$5,170	$4,139	$987,427	191	$4,585	$4,547	$371,412	81
	2002	6,055	4,976	660,011	109	5,866	$,794	1,044,201	178
	2004	5,543	4,843	354,763	64	5,899	5,579	1,474,712	250
	2006	7,228	4,885	383,058	53	6,302	5,599	1,550,403	246
	2008	4,741	3,884	199,143	42	5,151	5,007	1,251,686	243
Senate	2000	26,098	20,262	965,624	37	18,901	17,978	661,531	35
	2002	20,543	18,730	390,315	19	22,894	23,296	1,190,514	52
	2004	46,477	35,021	650,671	14	24,885	22,091	1,443,328	58
	2006	24,610	21,326	221,493	9	26,480	24,435	1,747,678	66
	2008	9,629	6,105	115,543	12	25,573	22,127	1,508,798	59

Notes: Spending amounts do not include any candidate who reported spending zero dollars or did not run in the general election. Spending includes both primary and general election amounts. Spending amounts have been adjusted for inflation using the gross domestic product (GDP) price index with 2008 as the base year. The 2004 Maine nonparticipating Senate candidate spending average includes one candidate who spent $225,566.

Table 42: Average Legislative Spending by Candidates' Participation in the Public Financing Program in Arizona, 2000 through 2008

2008 Dollars

		Nonparticipating candidates				Participating candidates			
	Election year	Mean	Median	Total	Number of candidates	Mean	Median	Total	Number of candidates
House of Representatives	2000	$31,699	$27,458	$2,060,409	65	$39,229	$34,360	$1,137,642	29
	2002	28,636	25,420	1,174,072	41	39,786	36,186	2,228,018	56
	2004	23,206	16,004	765,785	33	44,256	42,711	2,611,099	59
	2006	25,231	12,207	983,994	39	42,936	37,375	2,404,417	56
	2008	41,022	23,749	1,107,594	27	51,565	43,323	3,712,655	72
	All	**$29,716**	**$23,494**	**$6,091,854**	**205**	**$44,463**	**$38,181**	**$12,093,831**	**272**
Senate	2000	50,392	45,000	1,763,714	35	40,656	37,261	447,216	11
	2002	33,848	20,855	1,049,274	31	48,226	48,853	819,845	17
	2004	32,896	23,059	855,309	26	52,135	47,824	938,427	18
	2006	40,078	30,956	1,001,938	25	45,106	34,872	1,262,961	28
	2008	49,404	33,028	988,073	20	48,512	38,492	1,455,366	30
	All	**$41,302**	**$30,234**	**$5,658,308**	**137**	**$47,344**	**$39,934**	**$4,923,814**	**104**

Notes: Average spending includes both primary and general election spending for candidates who ran in the general election and reported campaign transactions that totaled more than zero dollars to the Arizona Secretary of State. Candidates who agreed to spend 500 or less were not required to file campaign finance reports with the Secretary of State, according to Arizona Secretary of State officials. Spending amounts have been adjusted for inflation using the gross domestic product (GDP) price index with 2008 as the base year.

Table 43: Independent Expenditures in Maine Legislative Elections, 2000 through 2008

2008 Dollars

		Nonparticipating candidates				Participating candidates				All candidates			
	Election year	Mean	Median	Total	Number of candidates	Mean	Median	Total	Number of candidates	Mean	Median	Total	Number of candidates
House of Representatives	2000	$702	$828	$30,204	43	$1,211	$995	$25,441	21	$869	$862	$55,645	64
	2002	1,090	1,178	31,615	29	1,219	1,178	63,366	52	1,173	1,178	94,982	81
	2004	1,504	1,243	39,096	26	1,926	1,418	215,700	112	1,846	1,416	254,796	138
	2006	3,296	1,843	92,296	28	2,625	2,489	330,802	126	2,747	2,457	423,098	154
	2008	2,025	1,992	38,470	19	1,813	1,896	168,649	93	1,849	1,912	207,119	112
Senate	2000	2,234	478	35,739	16	6,256	5,389	62,556	10	3,781	777	98,295	26
	2002	4,881	2,990	53,696	11	3,410	2,379	98,888	29	3,815	2,488	152,584	40
	2004	12,785	10,806	115,062	9	7,958	6,623	230,782	29	9,101	9,751	345,844	38
	2006	6,682	3,153	26,728	4	10,234	7,056	204,676	20	9,642	4,877	231,404	24
	2008	2,608	1,255	10,431	4	14,388	7,009	417,257	29	12,960	5,623	427,688	33

Notes: Amounts include independent expenditures reported in Maine House of Representatives or Senate races and have been adjusted for inflation using the gross domestic product (GDP) price index with 2008 as the base year.

Table 44: Independent Expenditures in Arizona Legislative Elections, 2008

2008 Dollars

Office	Average independent expenditure	Total expenditures	Number of individuals or committees	Number of payments
House of Representatives	$22,247	$1,379,292	62	391
Senate	25,500	790,486	31	221
Total	**$23,331**	**$2,169,778**	**93**	**612**

Note: Amounts include independent expenditures reported in Arizona House of Representatives and Senate races.

METHODS USED TO ASSESS CHANGES OVER TIME IN ELECTORAL COMPETITION IN MAINE AND ARIZONA

In this section, we describe the two multivariate methods we used to address our objective to describe changes in one of five goals of Maine's and Arizona's public financing program—increases in electoral competition.

Our Overall Approach to Assess Changes over Time in Electoral Competition in Maine and Arizona

We took two different approaches to investigate changes in the competitiveness of general elections in Maine, Arizona, and selected comparison states: fixed effects regression models and hierarchical loglinear models.[1] We used both methods to ensure that our results were not sensitive to the choice of model, as each made different assumptions about how competitiveness changed over time and across races.[2] The fixed effects models described in this section most clearly demonstrate our empirical findings and correspond with the units of measurement in the figures and tables in the report (GAO-10-390). We describe the loglinear analysis in a separate section in this electronic supplement.

Measures of Electoral Competitiveness

We were principally interested in whether there was differential change in the outcomes of elections in the different states over time. That is, we sought to determine whether elections in Maine and Arizona were (1) more likely to be close (and less likely to be landslides), (2) more likely to be contested (i.e., more candidates than available seats in a race), and (3) less likely to be won by incumbent candidates after public financing became available than when it was not available; and whether the change in Maine and Arizona differed from changes in their respective comparison states.

[1]We selected four comparison states—Colorado, Connecticut, Montana, and South Dakota—on the basis of several factors, such as demographic characteristics, presence of term limits, and geographic proximity to Maine or Arizona. See app. I of GAO-10-390 for more information about the selection of the comparison states used in both of these models.

[2]The fixed effects regression models and hierarchical loglinear models were largely consistent in their results, but not entirely consistent. Both techniques offered no evidence of differential changes between the states with public financing and their respective comparison states in the contestedness of elections or in the incumbent reelection rates, but some evidence of differential change related to the margin of victory. The fixed effects models detected significant differential change both in the likelihood that races were close and in the likelihood that races were landslides, and in both the analyses involving Arizona and Maine. The loglinear models detect a significant differential change only in the likelihood that races were close, and only in the analysis involving Arizona. Two of the three interactions related to differential change, which the loglinear models find to be insignificant at the .05 level, are however significant at the .10 level, which is an additional reason we regard the results from the two techniques as being largely consistent.

We analyzed four binary measures of electoral competitiveness, as well as one additional continuous outcome. Table 47 summarizes the measures and the types of races to which they apply.

Table 47: Measures of Electoral Competitiveness We Used in Our Analyses

Measure	Definition	Range	Types of applicable races
Margin of victory			
Single-member districts	100*((winner's votes – 1st runner-up votes) / total votes cast)	0-100	Contested races
Multimember districts	100*((second winner's votes - 1st runner-up votes) / (total votes cast - 1st winner's votes))	0-100	Contested races
Close	Margin of victory was less than 10 percentage points	0,1	Contested races
Landslide	Margin of victory was more than 20 percentage points	0,1	Contested races
Contestedness	Number of candidates exceeded the number of available seats	0,1	All races
Incumbent reelection	Incumbent candidate won	0,1	Races with at least one incumbent running for reelection

Source: GAO analysis.

Note: Arizona and South Dakota have multimember House districts, in which two representatives are elected from each district.

We measured the margin of victory three different ways in our fixed effects analyses. First, we contrasted close elections (a difference of less than 10 percentage points in votes between winning and losing candidates) with elections that were not close (a difference of 10 percentage points or greater). Second, we contrasted landslide elections (a difference of more than 20 percentage points in votes between winning and losing candidates) with elections that were not landslide elections (a difference of 20 percentage points or less). Third, we examined the average margin of victory. For single member districts, we used the margin between the winner and the runner-up. For multimember districts, we used the margin between the second winner and first runner-up, excluding the first winner's votes from the denominator. We measured contestedness by contrasting elections in which the number of candidates exceeded the number of available seats with elections in which the number of candidates was equal to the number of seats. To assess incumbent reelection rates, we contrasted contested elections in which the incumbent ran and won with elections in which the incumbent ran and lost.

Fixed Effects Research Design and Modeling Strategy

Many different factors affect the competitiveness of state elections, but most of these variables are not available in a reliable and accessible form. Thus, a key limitation of data on state legislative elections is the lack of numerous control variables. To compensate for a lack of data, we estimated a number of "fixed effects" regression models that can control for many variables using only variation over time within states or, where possible, within legislative districts. Fixed effects models increase the persuasiveness of our analysis, because they rule out confounding factors that do not change over time without measuring them directly.

Our analysis of the public financing programs in Maine and Arizona takes the form of a quasi-experiment. We compare the change in electoral competitiveness in each "treatment" state (i.e., Maine or Arizona) with the same change in three "comparison" states. The comparison states for Maine are South Dakota, Montana, and Connecticut, and the comparison states for Arizona are South Dakota, Montana, and Colorado. We assume that Maine and Arizona would have had the same outcomes as the comparison states in the absence of the public financing program. Under this assumption, the difference between the change in outcomes for Maine or Arizona and the comparison states, before and after 1999, will accurately estimate the causal effect of the public financing programs.[3] Although the treatment and comparison states may differ on important temporal dimensions, such as candidate quality or economic conditions, estimating the "difference-in-difference" allows us to control for all variables that do not vary over time.

We used state by chamber fixed effects in some models (i.e., the Senate and House in Maine or Arizona), and legislative district effects where possible. In theory, district fixed effects control for the most unobserved variation, including all variables that do not vary greatly across election years but do vary across districts, such as local party organizations and the proportion of nonwhite voters. Unobserved variation across states, such as differences in political culture and legal institutions, is an important special case. District fixed effects absorb state-level variables because they are constant within districts. In this sense, district fixed effects provide the most protection against confounding factors, in the absence of numerous controls.

In practice, state legislative redistricting following the release of data from the 2000 decennial Census complicates the use of district fixed effects. In Maine, districts are renumbered (alternating from the top to the bottom of the state, and the bottom to the top of the state) with each decennial census. This renders district effects in Maine based on district names inappropriate because of changes in how each district is classified over time. To assess the potential influence of redistricting in Arizona, we obtained data on the change in state legislative boundaries in the four states for which Census boundary files were available: Arizona, Connecticut, Colorado, and South Dakota. We determined that the latter three states did not substantially change their boundaries, but Arizona

[3]In both Maine and Arizona, the public financing programs became law in 1996 and 1998, respectively. Me. Rev. Stat. Ann. Tit. 21-A § 1121, *et seq.* Ariz. Rev. Stat. Ann. § 16-940, *et seq.*
Both became available for legislative candidates in the 2000 elections.

made large changes to reflect its growing population between 1990 and 2000. See the section on redistricting presented later in this electronic supplement for further discussion of these analyses. The instability of district boundaries in Arizona—and perhaps in Montana—suggests that linking data from the same district numbers before and after 1999 may not always be meaningful.

To avoid comparing substantially different geographic areas over time, we estimated models using both state-chamber and district fixed effects where possible in Arizona. In states with substantial redistricting, the district fixed effects will not accurately control for time-invariant factors within districts. State-chamber fixed effects—dummy variables for each of the eight combinations of state and chamber—cannot control for district-level variables. However, they can control for variables that are constant within states, such as election laws, and within chambers, such as party leadership. We present both sets of results as a sensitivity analysis, in part to maximize control, but we acknowledge that, for the district fixed effects models, the assumption that district boundaries did not change substantially may not hold. As such, we report only the results of the state-chamber fixed effects in the report (GAO-10-390).

Base Model Used for Fixed Effects Analysis

The following section provides statistical details on the models used, the reasons we used them, and the assumptions that underlie them. We discuss the results of our models and sensitivity tests in the following section.

We used the following regression model as the foundation for our analysis:

$$y_{it} = c_i + x_{it}b + e_{it}$$

Where

- i indexes state-chambers or districts and t indexes the seven elections between 1996 and 2008.
- y_{it} is one of the five measures of electoral competitiveness.
- c_i is a fixed effect, equal to the average value of each outcome for each state-chamber or district. We eliminated c_i by taking the "within" transformation. That is, we subtracted the cross-sectional mean from each state-chamber or district unit (y_{it}, x_{it}).
- x_{it} is a vector of control variables, including indicators for each election year (excluding two to avoid collinearity), an indicator for open seats, an indicator for post-1999 races, an indicator for being a treatment state, and the interaction between the latter two variables.

- The interaction effect is equal to the difference-in-difference—the change before and after public financing became available in Maine and Arizona, as compared to the comparison states.

Because we assumed that the comparison states were exchangeable with each other and with their respective treatment state, we grouped the three comparison states for each treated state together to create a binary treatment variable. In some models, we excluded races from Connecticut in 2008 to account for the fact that public financing became available in that election year. We could not meaningfully include these races as part of a second treatment group, due to the fact that only one election had occurred in which public financing was available.

We used Arellano-White ("robust") standard errors, clustered within state-chamber groups or districts, to account for correlated outcomes over time within states, chambers, and districts. Robust standard errors also allow unequal variation across units and over time. The estimator should converge on the true error distribution as the number of districts or state-chamber groups grows large. The state-chamber fixed effects models may not satisfy these asymptotic assumptions, however, due to the small number of states and chambers in the sample. The district fixed effects models in Arizona are more likely to do so, given the several hundred districts in the sample per year, but redistricting may make these results less meaningful. We balance the strengths and weaknesses of each approach by estimating models with both district and state-chamber effects.

Models of Continuous Outcomes

We analyzed one continuous measure of electoral competition: the margin of victory, expressed in percentage points of vote-share. The margin of victory is nonnegative and positively skewed, with the bottom 75 percent of single and multimember races between 0 and 34.8 percentage points but the upper 25 percent of races between 34.8 and 99.9 percentage points. We logged the margin of victory in some models to normalize the data, reduce the influence of highly uncompetitive races, and constrain the conditional expectation to be positive.

Models of Binary Outcomes

We analyzed four binary measures of electoral competition: (1) whether the race was close, with a margin of victory of less than 10 percentage points; (2) whether the race was a landslide, with a margin of victory of more than 20 percentage points; (3) whether the incumbent won reelection; and (4) whether the race had at least as many candidates as available seats (i.e., contestedness).

Sigmoid or s-shaped regression functions, such as the logistic distribution or cumulative normal distribution function used in probit regression models, typically model

probabilities more realistically than a linear probability model (LPM).[4] Unlike a LPM, s-shaped functions constrain the expected probability to the interval between 0 and 1; allow the marginal effect of each covariate to vary across its entire range; and account for heteroskedasticity by specifying the complete distribution of the dependent variable.

Unfortunately, unobserved effects probit and logit models are difficult to identify and estimate. One cannot identify the unobserved effects probit model without assuming that c_i is a random variable distributed normally and independently of x_i.[5] This exogeneity assumption defeats the purpose of fixed effects as a method of control. Fixed effects logit models can identify marginal effects without estimating c_i or specifying their distribution conditional on x_i.[6] Because the fixed effects and covariates may be arbitrarily related, the model controls for all time-invariant variables, just like the LPM. However, identification requires that we assume the outcomes are independent over time within races or states, and that we conduct maximum likelihood estimation conditional on the sum of the outcomes within races or states (as a sufficient statistic for c_i).The first assumption is almost certainly wrong for elections data, which are positively correlated over time. Unlike in linear models, violating this assumption in fixed effects logit models could bias the estimated marginal effects.[7] The complexity of the likelihood function also introduces the risk that numerical optimization methods, such as Newton-Raphson, may not converge correctly.

In light of these problems, the fixed effects LPM is the more appropriate choice for our data. The standard weaknesses of the LPM—constant marginal effects and the possibility of predictions outside the unit interval—are mitigated by the fact that all of our covariates are indicator variables. The marginal effect of an indicator variable is constant and linear using either the LPM or logit/probit.[8] The limited range of the covariates decreases the chance of invalid predictions because the predicted values are roughly the conditional probabilities of success within the categories formed by the controls. (A saturated model, including all main and interaction effects of the indicator covariates, is exactly equivalent to estimating the conditional probabilities across all joint categories. In this case, the predicted values must lie between 0 and 1.[9]) Invalid predictions are not a major concern, in any case, because we want to estimate the marginal effect of the treatment states' use of public financing. Robust variance estimators can adjust for the heteroskedasticity that the linear regression function guarantees.

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[4]The discussion of fixed effects models for binary outcomes relies heavily on Jeffrey M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data* (Cambridge: MIT Press, 2002), pp. 265-284, 451-460, 482-493.
[5]*Ibid.*, pp. 484-485.
[6]*Ibid.*, pp. 490-492.
[7]*Ibid.*
[8]The marginal effect of an indicator covariate, given a logit/profit function F, is equal to $F(xb + a) - F(xb)$, where a is the coefficient on the indicator covariate. Because this sum is a linear function, the marginal effect is linear in the indicator covariate. In contrast, the marginal effect of a continuous covariate, dF/dx, is nonlinear in x for the logit/probit functions.
[9]Ibid., pp. 456-457.

In sum, the LPM avoids the need to numerically maximize a complex log-likelihood; avoids unrealistic exogeneity assumptions; and avoids the need to specify the entire distribution of the dependent variable for estimation, rather than just the first moment. Although the LPM is less realistic than logit or probit in many applications, it is an appropriate choice for the data at hand.

We specified the LPM models the same way as the continuous least-squares models.[10] Despite the fact that the covariates are not binary in the transformed data, the interpretation of the marginal effects is the same with or without fixed effects. The within-transformed indicator covariates still differ by one unit, and, therefore, the coefficient for each transformed covariate still represents the estimated difference between categories.

Results of Our Analyses

The fixed effects models require variation over time within states to estimate the difference-in-difference between Maine, Arizona, and their comparison states. As table 48 shows, our sample contains between 38 and 182 races per year for both the treatment and comparison states. Because Arizona has roughly one-quarter as many districts as Maine, our estimates for Arizona should be less precise and stable across model specifications. Pooling races across all of the comparison states helps avoid leveraging the smaller number of observations in South Dakota and Colorado.

Table 48: Number of Races with Observed Margin of Victory Data, by State and Availability of Public Financing Program

	States with public financing programs		States without public financing programs			
Year	**Maine**	**Arizona**	**Connecticut**	**Colorado**	**Montana**	**South Dakota**
1996	173	40	147	60	85	60
1998	147	32	145	70	73	51
2000	152	47	125	83	101	57
2002	163	41	144	72	98	47
2004	181	38	148	69	99	51
2006	182	50	141	69	108	65
2008	168	49	134	74	133	70
Total	**1,166**	**297**	**984**	**497**	**667**	**401**

Source: GAO analysis of state election results data.

Notes: Entries are the number of races with observed data on margin of victory. This approximates the amount of data available in each year and state for modeling. Our margin of

[10]With a binary dependent variable, $E(y_{it} \mid x_{it}, c_i)$ is now equal to $Pr(y_{it} = 1 \mid x_{it}, c_i)$. The within transformation subtracts the cross sectional mean of each covariate, or $Pr(x_i = 1)$, from x_{it}. When $x_{it} = 0$, the transformed covariate equals $-1 * Pr(x_i = 1)$, and when $x_{it} = 1$, the transformed covariate equals $Pr(x_i = 0)$. The fact that $Pr(x_i = 0) + Pr(x_i = 1) = 1$ implies that $- Pr(x_i = 1) - Pr(x_i = 0) = -1$. Thus, the absolute value of the difference between each transformed covariate equals 1.

victory measure accounts for multimember House districts in Arizona and South Dakota by focusing on the margin of victory between the second winner and first runner-up.

Results Show That Maine and Arizona Differed Statistically from Comparison States in Margin of Victory Measures

The results of our analyses provide evidence that the closeness of state legislative races in both Maine and Arizona differed from that in the comparison states. As shown in table 49, the margin of victory decreased by 5.7 to 6.0 percentage points in Maine under various modeling assumptions. The 95 percent upper bound confidence interval suggests that the maximum effect public financing could have had, if any, was to decrease the margin of victory by no less than three percentage points. The differences observed in Arizona were similar. The estimates vary from -3.5 to -6.2 percentage points, depending on model assumptions.

We also estimated models with logged margin of victory as the dependent variable, which allows us to analyze the proportional change in the margin of victory. The transformation does not substantially affect the conclusions. The logged margin of victory decreased by 30.1 percent to 42.0 percent, depending on the state and model specification, after the implementation of the public financing programs. The magnitude of the proportional changes should be interpreted with caution, however, given the relatively modest size of the effects in level units, as shown in the models that directly measure the change in margin of victory.

Table 49: Estimated Effects of Public Campaign Funding on State Legislative Election Margin of Victory for Contested Races, by Model and State

Model	Maine				Arizona			
	Lower 95% CI	Marginal effect	Upper 95% CI	N	Lower 95% CI	Marginal effect	Upper 95% CI	N
DV: Margin of victory, all districts[a]								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-9.2	-3.5	2.2	1,862
State-chamber fixed effects/clusters	-8.0	-5.7	-3.4	3,218	-7.8	-4.3	-0.9	1,862
Excluding Connecticut 2008	-8.4	-5.9	-3.3	3,084	n.a.	n.a.	n.a.	
DV: Logged margin of victory, all districts[b]								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-76.9	-42.0	-7.2	1,859
State-chamber fixed effects/clusters	-43.7	-25.4	-7.2	3,215	-52.3	-39.6	-26.9	1,859
Excluding Connecticut 2008	-44.1	-26.3	-8.5	3,081	n.a.	n.a.	n.a.	
DV: Margin of victory, single-member districts[1]								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-16.8	-4.5	7.7	1,490
State-chamber fixed effects/clusters	-8.3	-5.8	-3.4	3,010	-8.3	-6.2	-4.2	1,490
Excluding Connecticut 2008	-8.8	-6.0	-3.3	2,876	n.a.	n.a.	n.a.	
DV: Logged margin of victory, single-member districts[b]								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-71.6	-30.1	11.4	1,488
State-chamber fixed effects/clusters	-40.9	-23.3	-5.7	3,008	-50.2	-38.4	-26.5	1,488
Excluding Connecticut 2008	-41.3	-24.2	-7.0	2,874	n.a.	n.a.	n.a.	

Source: GAO analysis.

Notes:
CI = confidence interval
DV = dependent variable
n.a. = not applicable
Entries are the change in the indicated dependent variables before and after Maine and Arizona implemented public financing programs, as compared to similar states that did not have public financing programs. Marginal effects are estimated by least-squares regression models. Covariates include year fixed effects, state-chamber/race fixed effects, open seat status, and the interaction between a treatment-versus-comparison-state indicator and a pre/post 1999 indicator. The interaction coefficient for each model appears above. Confidence intervals (CI) are calculated using Arellano-White standard errors, clustered by race / state-chamber. The robust standard errors correct for the correlation within races / state-chambers over time as the number of cross-sectional units becomes large.
[a]Marginal effects are expressed in percentage points of vote share.
[b]Marginal effects are semi-elasticities, expressed in percentage points of percentage points of vote share.

Our models estimate that the probability of a close race increased and the probability of a landslide decreased in Maine and Arizona, relative to their comparison states, after the implementation of public financing. As shown in table 50, the chance of a close race increased by 7.2 to 8.0 percentage points in Maine and by 10.0 to 11.9 percentage points in Arizona after the implementation of the public financing programs. Similarly, the chance of a landslide was reduced by 7.5 to 9.4 percentage points in Maine and by 5.6 to 19.6 percentage points in Arizona after the implementation of the public financing programs.

Table 50: Estimated Effects of Public Campaign Funding on the Probability of Close Races (Margin of Victory less than 10 percent) and Landslides (Margin of Victory more than 20 percent) for Contested Races, by Model and State

	Maine				Arizona			
Model	**Lower 95% CI**	**Marginal effect**	**Upper 95% CI**	**N**	**Lower 95% CI**	**Marginal effect**	**Upper 95% CI**	**N**
DV: Close race, all districts								
District fixed effects/clusters	1.0	8.1	15.7	3,218	-3.0	11.5	26.1	1,862
State-chamber fixed effects/clusters	0	8.0	16.0	3,218	3.7	10	16.3	1,862
Excluding Connecticut 2008	0.5	8.0	16.0	3,084	n.a.	n.a.	n.a.	
DV: Close race, single-member districts								
District Fixed effects/clusters	0	7.5	15.0	3,010	-4.1	10.4	24.9	1,490
State-chamber fixed effects/clusters	-0.8	7.2	15.2	3,010	5.9	11.9	17.8	1,490
Excluding Connecticut 2008	-0.5	7.6	15.7	2,876	n.a.	n.a.	n.a.	
DV: Landslide race, all districts								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-26.0	-12.1	1.7	1,862
Including uncontested = 100%	n.a.	n.a.	n.a.	n.a.	-23.2	-10.8	1.7	2,377
State-chamber fixed effects/clusters	-13.9	-9.2	-4.5	3,218	-26.3	-14.6	-2.9	1,862
Including uncontested = 100%	-13.2	-8.1	-3.0	3,986	-16.6	-12.1	-7.6	2,377
Excluding Connecticut 2008	-14.7	-9.8	-4.9	3,084	n.a.	n.a.	n.a.	
Including uncontested = 100%	-13.4	-8.1	-2.9	3,799	n.a.	n.a.	n.a.	
DV: Landslide race, single-member districts								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-38.7	-16.1	6.4	1,490
Including uncontested = 100%	n.a.	n.a.	n.a.	n.a.	-19.9	-5.6	8.7	2,005
State-chamber fixed effects/clusters	-13.2	-8.5	-3.8	3,010	-27.5	-19.6	-11.8	1,490
Including uncontested = 100%	-12.7	-7.5	-2.3	3,778	-17.3	-7.3	2.7	2,005
Excluding Connecticut 2008	-14.5	-9.4	-4.3	2,876	n.a.	n.a.	n.a.	
Including uncontested = 100%	-13.5	-7.7	-1.9	3,591	n.a.	n.a.	n.a.	

Source: GAO analysis.

Notes:
CI = confidence interval
DV = dependent variable
n.a. = not applicable
Entries are the change in the indicated dependent variables before and after Maine and Arizona implemented public financing programs, as compared to similar states that did not have public financing programs. Marginal effects are estimated by linear probability regression models and expressed in percentage points. Samples exclude uncontested races, except as noted. Covariates include year fixed effects, state/race fixed effects, open seat status, and the interaction between a treatment-versus-comparison-state indicator and a pre/post 1999 indicator. The interaction coefficient for each model appears above. Confidence intervals (CI) are calculated using Arellano-White standard errors, clustered by race / state-chamber. Robust standard errors correct for the heteroskedasticity imposed by a linear regression function, in addition to the correlation within races / state-chambers over time, as the number of cross-sectional units becomes large.

Results Show That Change over Time in Contestedness of Races and Incumbent Victories Was Not Statistically Different in Maine and Arizona Than in Comparison States

The fixed effects models show that the change over time in race contestedness and rates of incumbent reelection did not differ between Maine or Arizona and their respective comparison states. Put alternatively, we do not find evidence that public financing programs influenced the probability that a race was contested or an incumbent won.

Tables 51 and 52 list the marginal effects of public financing, as estimated by the models described above under various assumptions. We estimated models that included all races and that excluded those few races in which multiple incumbents competed for each available seat. In the latter races, the probability of an incumbent winning was necessarily 100 percent. Both types of models produce similar substantive results. All of the estimated effects are small, often less than 1 percent. Although we cannot reject the null hypothesis of zero effect, the broad confidence intervals suggest that our estimates are moderately uncertain. We should be careful not to accept the null hypothesis—that public financing programs have no effect—given the modest sample size and large standard errors.

Table 51: Estimated Effects of Public Campaign Funding on the Probability of Contested Races, by Model and State

	Maine				Arizona			
Model	**Lower 95% CI**	**Marginal effect**	**Upper 95% CI**	**N**	**Lower 95% CI**	**Marginal effect**	**Upper 95% CI**	**N**
DV: Contested race, all districts								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-11.5	2.2	15.9	2,377
State-chamber fixed effects/clusters	-12.2	1.1	14.3	3,986	-6.0	3.3	12.6	2,377
Excluding Connecticut 2008	-12.3	0	12.3	3,799	n.a.	n.a.	n.a.	
DV: Contested race, not open seat								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-20.1	-1.6	16.9	1,662
State-chamber fixed effects/clusters	-12.7	1.9	16.6	3,086	-6.6	5.9	18.4	1,662
Excluding Connecticut 2008	-13.3	0.7	14.7	2,924	n.a.	n.a.	n.a.	

Source: GAO analysis.

Notes:
CI = confidence interval
DV = dependent variable
n.a. = not applicable
Entries are the change in the indicated dependent variables before and after Maine and Arizona implemented public financing programs, as compared to similar states that did not have public financing programs. Marginal effects are estimated by linear probability regression models and expressed in percentage points. Covariates include year fixed effects, state-chamber/race fixed effects, open seat status (except as noted), and the interaction between a treatment-versus-comparison-state indicator and a pre/post 1999 indicator. The interaction coefficient for each model appears above. Confidence intervals (CI) are calculated using Arellano-White standard errors, clustered by race/state-chamber. The robust standard errors correct for the heteroskedasticity imposed by a linear regression function, in addition to the correlation within races/state-chambers over time, as the number of cross-sectional units becomes large.

Table 52: Estimated Effects of Public Campaign Funding on the Probability of Incumbent Victory, by Model and State

	Maine				Arizona			
Model	Lower 95% CI	Marginal effect	Upper 95% CI	N	Lower 95% CI	Marginal effect	Upper 95% CI	N
DV: Incumbent reelected, all races								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-7.1	-1.2	4.7	1,662
State-chamber fixed effects/clusters	-4.0	0.9	5.7	3,086	-6.5	-0.1	6.3	1,662
Excluding Connecticut 2008	-4.1	0.7	5.5	2,924	n.a.	n.a.	n.a.	
DV: Incumbent reelected, excluding races with more incumbents than seats								
District fixed effects/clusters	n.a.	n.a.	n.a.	n.a.	-7.1	-1.2	4.7	1,660
State-chamber fixed effects/clusters	-4.0	0.8	5.7	3,080	-6.5	-0.1	6.3	1,660
Excluding Connecticut 2008	-4.2	0.7	5.5	2,918	n.a.	n.a.	n.a.	

Source: GAO analysis.

Notes:
CI = confidence interval
DV = dependent variable
n.a. = not applicable
Entries are the change in the indicated dependent variables before and after Maine and Arizona implemented public financing programs, as compared to similar states that did not have public financing programs. Marginal effects are estimated by linear probability regression models and expressed in percentage points. All models exclude races with no incumbents running for reelection. Covariates include year fixed effects, state-chamber/race fixed effects, \and the interaction between a treatment-versus-comparison-state indicator and a pre/post 1999 indicator. The interaction coefficient for each model appears above. Confidence intervals (CI) are calculated using Arellano-White standard errors, clustered by state-chamber/race. The robust standard errors correct for the heteroskedasticity imposed by a linear regression function, in addition to the correlation within state-chamber/districts over time, as the number of cross-sectional units becomes large.

The second set of results in table 6 includes only races with incumbents running against challengers (i.e., seats that were not open). By excluding open seats, we control for the possibility that term limits influenced contestedness by forcing incumbents to retire. The models provide little evidence of this effect, as the results do not meaningfully vary when excluding open seats.

Limitations of the Analysis

Our models have specific limitations in addition to the constraints imposed by the statistical assumptions described above. Our analysis does not control for a number of important factors that vary over time. These factors include changing economic conditions, incumbent accomplishments, challenger strength, campaign spending, and presidential and other top-ballot races. Our estimates will be biased to the extent that Maine and Arizona differed from the comparison states with respect to any of these factors.

Nevertheless, the multilevel nature of public financing may reduce the potential bias. Because public financing for campaigns was administered at the state level but applied at the local-district level, the most likely confounding variables are state-level factors that were correlated with the timing of the implementation of the programs. In contrast, many district-level variables are likely to have been correlated with competitiveness but uncorrelated with the decision to change policy at a particular time. For example, the citizens of Arizona may have passed public financing due to the trend in candidate quality throughout the state but not solely due to the trend in one legislative district. To the extent that this is true, our year and state fixed effects will control for some of the most plausible confounding factors that vary over time, such as incumbent accomplishments, local economic conditions, and other local political races.

Although we cannot rule out alternative explanations at the district-level, largely due to the lack of readily available data, our fixed effects models rule out differences between races or state-chamber groups in any particular election cycle.

Loglinear Analyses and Results

In this section, we describe the loglinear analyses we undertook to determine what changes occurred in the competitiveness of general elections in the different districts in Maine and Arizona before and after the public financing programs were implemented in 2000. We examined the same discrete and dichotomous outcomes that were examined using the fixed-effects models (i.e., whether elections were contested, whether the margins of victory in contested elections were close or landslides, and whether incumbent candidates were likely to be reelected in races that were contested). We were principally interested in whether elections in Maine and Arizona were more likely to be contested, more likely to be close, less likely to be landslides, and less likely to be won by incumbent candidates after the public financing programs were available than before they were available.

We measured contestedness by contrasting elections in which the number of candidates exceeded the number of positions available in the race with elections in which the number of candidates was equal to or less than the number of positions available. We measured the margin of victory in two ways, first by contrasting close elections (less than a 10 percentage point difference in votes between winning and losing candidates) with elections that were not close (a 10 percentage point or more difference), and by contrasting landslide elections (more than a 20 percentage point difference in votes between winning and losing candidates) with elections that were not landslides (20 percentage point or less difference). In looking at whether incumbents won or did not win, we contrasted contested elections in which the incumbent ran and won with elections in which the incumbent ran and lost.

We felt it was necessary in looking at these different outcomes in Maine and Arizona and changes in them over time to (1) distinguish elections to the state Senate from elections to the state House of Representatives, (2) take into account whether an incumbent was involved in the election, and (3) consider, for comparative purposes, whether the changes in these outcomes in these two states differed from changes in other states. We compared these different election outcomes in Maine with outcomes in Connecticut, Montana, and South Dakota and we compared the election outcomes in Arizona with outcomes in Colorado, Montana, and South Dakota. In our analyses, we grouped the three comparison states together, since they were alike with respect to not having public financing.

Loglinear Models

We used loglinear models to evaluate the changes in these outcomes in House and Senate elections in the different states. In our analyses of contestedness and margin of victory in close and landslide elections, we fit hierarchical models to the observed frequencies in the different five-way tables formed by cross-classifying each of those three outcomes by state (Maine versus the comparison states in three tables, and Arizona versus the comparison states in three different tables), chamber (Senate vs. House), period (before public financing and after public financing), and whether an incumbent

was or was not in the race.[11] Our analyses of whether an incumbent won was somewhat simpler, since we considered only races that included incumbents, and involved fitting models to the four-way table in which that outcome was cross-classified by state, chamber, and period, again looking separately at Maine versus its comparison states and at Arizona versus its comparison states. We followed procedures described by Goodman (1978)[12] and fit hierarchical models that placed varying constraints on the odds and odds ratios that are used to describe the associations of state, period, and chamber with each outcome, and ultimately chose from among these different models a "preferred" model that distilled the significant pattern in the data from the random fluctuations. In the modeling process we describe below, our particular interest was in whether there was any evidence of differential change in the outcomes by state. That is, we were especially interested in whether there was an interaction between state, period, and outcome, as that would suggest the possibility that the change in the different outcomes in Maine and Arizona was unlike the change in other states, possibly due to the availability of the public campaign financing programs. With respect to this interaction, what we found using these models was roughly comparable to what was found using the fixed effect models—no evidence of any differential change in the likelihood that elections were contested or that incumbents were reelected, but some evidence of differential change in the margin of victory.

For example, table 53 compares Arizona and its comparison states with respect to the contestedness of elections. In table 53, "contested" elections are those in which the number of candidates exceeds the number of positions available, while "not contested" elections are those in which the number of candidates is equal to or less than the number of positions available. The state variable contrasts Arizona with its three comparison states (Colorado, Montana, and South Dakota), contrasts elections that took place prior to 2000 (in 1996 and 1998) with those that took place in 2000 or after (in 2000, 2002, 2004, 2006, and 2008), and chamber refers to whether the election was for a Senate or House seat.

[11]We grouped the elections into before public financing (i.e., 1996 and 1998) and after public financing (i.e., 2000, 2002, 2004, 2006, and 2008) to contrast generally elections that took place before and after the public campaign financing programs were available. We deleted the 2008 elections in Connecticut because that state introduced public financing for legislative candidates in 2008.

[12]Leo A. Goodman, *Analyzing Qualitative/Categorical Data* (Abt Books: Lanham, Md.1978).

Table 53: Observed Frequencies in the 5-Way Table in Which the Contestedness of Races Is Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Arizona vs. Comparison States)

Observed frequencies

				Contestedness			Odds ratios indicating differences in the odds on being contested by -			
State	Period	Chamber	Incumbent in race	Contested	Not contested	Odds on contested	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	60	37	1.62	0.54	2.74	0.41	0.42
			No incumbent	42	11	3.82	0.78	0.51	0.42	
		House	Incumbent	96	24	4.00	0.80	2.30		0.44
			No incumbent	27	3	9.00	1.02	…		
	Before public financing	Senate	Incumbent	16	27	0.59	0.29		0.34	0.08
			No incumbent	15	2	7.50	1.97			
		House	Incumbent	33	19	1.74	0.84			
			No incumbent	8	0					
Comparison states[a]	After public financing	Senate	Incumbent	166	55	3.02		1.49	0.60	0.62
			No incumbent	142	29	4.90		1.29	0.56	
		House	Incumbent	594	119	4.99		2.41		0.57
			No incumbent	264	30	8.80		1.41		
	Before public financing	Senate	Incumbent	73	36	2.03			0.98	0.53
			No incumbent	38	10	3.80			0.61	
		House	Incumbent	207	100	2.07				0.33
			No incumbent	81	13	6.23				

Expected frequencies

				Contestedness			Odds ratios indicating differences in the odds on being contested by -			
State	Period	Chamber	Incumbent in race	Contested	Not contested	Odds on contested	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	65.05	31.95	2.04	0.68	2.17	0.60	0.56
			No incumbent	41.53	11.47	3.62	0.68	1.16	0.60	
		House	Incumbent	92.59	27.41	3.38	0.68	2.17		0.56
			No incumbent	25.72	4.28	6.01	0.68	1.16		
	Before public financing	Senate	Incumbent	20.84	22.16	0.94	0.68		0.60	0.30
			No incumbent	12.88	4.12	3.12	0.68		0.60	
		House	Incumbent	31.69	20.31	1.56	0.68			0.30
			No incumbent	6.71	1.29	5.18	0.68			
Comparison states[a]	After public financing	Senate	Incumbent	165.42	55.58	2.98		2.17	0.60	0.56
			No incumbent	143.82	27.18	5.29		1.16	0.60	
		House	Incumbent	592.93	120.07	4.94		2.17		0.56
			No incumbent	263.93	30.07	8.78		1.16		
	Before public financing	Senate	Incumbent	63.09	45.91	1.37			0.60	0.30
			No incumbent	39.38	8.62	4.57			0.60	
		House	Incumbent	213.39	93.61	2.28				0.30
			No incumbent	83.04	10.96	7.58				

Source: GAO analysis of state election data.

[a]Comparison states are Colorado, Montana, and South Dakota.

The observed frequencies in the top panel of table 53 show the number of elections that were and were not contested in the joint categories of state, period, chamber, and whether an incumbent was in the race. The numbers in the first row of the table indicate, for example, that 60 state Senate elections in Arizona after public financing that included incumbents were contested, while 37 were not contested. The numbers in the last row, by contrast, indicate that 81 of the elections for the state House of Representatives in Arizona's comparison states that took place before public financing and did not include incumbents were contested, while 13 were not.

We can estimate how likely it was for these elections to be contested by calculating, for each of the joint categories of state, period, chamber, and incumbent status, the odds on elections being contested. This is done by simply dividing the number of contested elections by the number of uncontested elections. In Arizona, the odds on Senate elections being contested after public financing when they included incumbents were 60/37 = 1.62, which indicates that slightly more than 1.6 elections were contested for every 1 that was not (or that 16 were contested for every 10 that were not). For House elections in comparison states before public financing that did not involve an incumbent the odds on being contested were decidedly higher, and equal to 81/13 = 6.23, which indicates that slightly more than 6 of those elections were contested for every 1 that was not. As shown in the full set of odds in the third column of numbers in table 53, the odds on elections being contested vary considerably in Arizona and the comparison states across the two periods and chambers and across the two categories indicating whether an incumbent was in the race.

To estimate, from these observed data, the differences in the odds on contestedness between states, periods, chambers, and races that did and did not include incumbents, we can calculate odds ratios, or various ratios of the odds just described. To estimate state differences in contestedness, for example, we calculate the eight odds ratios that compare the odds in Arizona to the corresponding odds in the comparison states within each of the joint categories of period, chamber, and incumbent status.[13] For example, after public financing in races for the Senate that included incumbents we obtain an observed odds ratio of 1.62/3.02 = 0.54, which indicates that the observed odds on contestedness in those races were lower by half in Arizona as in the comparison states. The odds on contestedness were also lower in Arizona than in the comparison states for most of the other types of races. Although, for House races in the period before public financing that did not involve an incumbent, the odds ratio was inestimable since the odds on contestedness for races of that sort in Arizona were undefined given the lack of any such races in that state that were not contested.

The difference between periods, or change over time, can be similarly estimated, by calculating the ratios of the odds on contested for the period after public financing relative to before public financing within each joint category of state, chamber, and incumbent status category, and differences between races in different chambers and with and without incumbents can be similarly calculated. The full set of observed odds

[13]For this table only seven of the eight odds ratios are actually estimable, since one of the underlying odds (for Arizona before public financing House elections without incumbents) was zero.

ratios, given in the final four columns of numbers in the upper panel of table 53, show that the observed odds on being contested

- tend to be lower in Arizona than in the comparison states (i.e., five of the seven ratios that can are estimable are less than 1);
- tend to be higher in the period after public financing (i.e., six of the seven estimable ratios are greater than 1);
- are always (where estimable) lower in the Senate than in the House; and,
- are always, and often decidedly, lower for races with incumbents than for races without.

In looking at the observed data, it is not readily apparent whether all of the ratios differ significantly from 1.0, which would indicate no difference between the groups they compare, nor whether the differences in the observed odds ratios describing the state, period, chamber, and incumbent status differences are of any significance (i.e., whether there are interactions implying, for example, that changes over time or differences across periods were not alike in Arizona versus its comparison states). To determine this, we compare different loglinear models that were fit to the observed data, which are shown in table 54.

Table 54: Models Fitted to the 5-Way Table in Which the Contestedness of Races Is Cross-Classified by Chamber, Period, State, and Incumbent in Race (Arizona vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF[b]	L^2[c]	P[d]
1	{SPCI} {O}	15	133.64	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	19.58	0.0514
3	{SPCI} {SO} {PO} {CO}	12	60.17	<.0001
4	{SPCI} {SO} {PO} {IO}	12	41.22	<.0001
5	{SPCI} {SO} {CO} {IO}	12	56.26	<.0001
6	{SPCI} {PO} {CO} {IO}	12	28.22	0.0051
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	19.58	0.0335
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	16.28	0.0918
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	17.05	0.0732
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	17.07	0.0728
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	14.34	0.1579
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	19.54	0.0339

Source: GAO analysis of state election data.
[a]S = state (Arizona vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table contestedness (contested vs. not contested). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

Model 1 in table 54 is a logit-specified model of independence, which specifies that the outcome (in this case contestedness) is independent of the joint categories of state,

period, chamber, and the presence of an incumbent. The expected frequencies under this model (not shown) would yield odds on elections being contested that are identical across the 16 joint categories of state, period, chamber, and incumbent status. The fact that a model as simple as that is not an appropriate model to describe the pattern in the observed data, however, is apparent from its poor fit to the data, which is indicated by the large value and low probability of the likelihood-ratio chi-square statistic associated with its goodness-of-fit ($L^2 = 133.6$; $P < .0001$). Model 2, by contrast, is a "main effects" model that allows contestedness to be directly related to all four of the factors in the table; the model implies that the odds on contestedness are different across states, periods, and chambers, and different when incumbent are and are not involved in the election. Model 2, unlike Model 1, fits the observed data acceptably (though only barely acceptably, given $L^2 = 19.6$; $P = .05$), and its significant improvement over Model 1 indicates that one or more of these pairwise associations of contestedness with the four different factors is a significant association.

To determine whether all, or only some, of these associations are significant, we compared Model 2 with each of Models 3 through 6, each of which omits one of these associations. The fact that each of these models fits significantly more poorly than Model 2 (i.e., the chi-square difference between Models 2 and 3, Models 2 and 4, Models 2 and 5, and Models 2 and 6 are all greater than 3.84, which is the critical difference at the .05 level with 1 degree of freedom) indicates that all of these pairwise associations are of consequence, and that all need to be included in a model to describe the significant patterns in the data.

The question then becomes, do these pairwise associations suffice to describe the data, or are there interactions between these variables such that, for example, the change over time in contestedness differs in Arizona relative to the comparison states (the most interesting interaction in this case), or the difference in contestedness in the Senate and House varies depending on whether an incumbent is in the race? To determine this, we compare Model 2 with each of the more complex Models 7 through 12, which add one interaction at a time to the "main effects" model. We find, in this case, that Model 11 improves significantly upon Model 2 (the chi-square difference between them exceeds the critical value of 3.84) while none of the other Models do. For that reason, and because Model 11 provides an acceptable fit to the data ($P = 0.16$), Model 11 is chosen as the preferred model to describe the observed data in the top panel of table 53. Model 11 indicates that, while there are simple pairwise associations between contestedness and state, and contestedness and chamber, the difference between periods (or the change over time) is different for elections that include incumbents than for those that do not.

In the bottom panel of table 53, we show the expected frequencies under this preferred model and the expected odds and odds ratios derived from them. The expected frequencies and odds in the lower panel are fairly close to the observed frequencies and odds in the upper panel. It is noteworthy too that the large number of different observed odds ratios describing the state, period, and chamber differences in the upper panel of the table have been reduced to a much smaller number of expected odds ratios in the lower panel. This is because the preferred model for this table (and the preferred model for the other tables considered), impose simplifying constraints on the odds ratios that

are consistent with the significant and insignificant effects in the table. Our results from fitting loglinear models to table 53, and from fitting similar models to the other seven tables in which contestedness, margin of victory, and the tendency for incumbents to be reelected were cross-classified by state, period, and chamber, first for Arizona and its comparison states and then for Maine and its comparison states, are summarized below.

Contestedness

The preferred model to describe the data in table 53 involving contestedness in Arizona and its comparison states is Model 11 (see table 54). The preferred model to describe the data in table 55 involving contestedness in Maine and its comparison states is Model 8 (see table 56). The expected frequencies associated with those models indicate the following:

- In Arizona, after public financing, the estimated odds on Senate elections involving incumbents being contested were 2.0 (see bottom panel, table 53). That is, two elections of that type were contested for every election that was not contested.

    1. In both periods, and with respect to both House and Senate elections with and without incumbents, the odds on elections being contested were lower in Arizona than in the other states, by a factor of 0.68.
    2. In both the House and Senate elections that included incumbents, in both Arizona and the other states alike, the odds on elections being contested were twice as great after 2000 than before 2000. In House and Senate elections that did not include incumbents, in Arizona and the other states, the odds on elections being contested only slightly greater after 2000 than before, or greater by a factor of 1.16.
    3. In both periods, and in the comparison states as well as Arizona, Senate races with and without incumbents were less likely than House races to be contested, by a factor of 0.6.
    4. Both Senate and House elections in Arizona and the comparison states were less likely to be contested when an incumbent was included in the race, and this difference was more pronounced before 2000 (when they were less likely by a factor of roughly 0.3) than after (when they were less likely by a factor of 0.6).

- In Maine, after public financing, the estimated odds on Senate elections involving incumbents being contested were roughly 16 (see bottom panel, table 55). That is, 16 Senate elections in Maine involving incumbents in that period were contested for every election that was not contested.

    1. Both before and after public financing the odds on elections being contested were higher in that state than in the three comparison states, by a factor of roughly 5 in the Senate and 2.2 in the House.
    2. Elections with and without incumbents were more likely (by a factor of 1.3) to be contested after public financing than before, in both the House and Senate and in both Maine and the comparison states.

3. In Maine, the odds on elections being contested were twice as high in the Senate as in the House, though there was no difference between chambers in the comparison states.
4. Both Senate and House elections in Maine and the comparison states were half as likely to be contested when an incumbent was included in the race

Table 55: Observed Frequencies in the 5-Way Table in Which the Contestedness of Races is Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Maine vs. Comparison States)

Observed frequencies										
				Contestedness			Odds ratios indicating differences in the odds on being contested by -			
State	Period	Chamber	Incumbent in race	Contested	Not contested	Odds on contested	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	117	6	19.50	6.31	2.44	2.46	0.38
			No incumbent	51	1	51.00	12.28	3.40	4.27	
		House	Incumbent	475	60	7.92	2.45	1.70		0.66
			No incumbent	203	17	11.94	1.51	1.04		
	Before public financing	Senate	Incumbent	48	6	8.00	2.76		1.72	0.53
			No incumbent	15	1	15.00	2.68		1.31	
		House	Incumbent	177	38	4.66	1.93			0.41
			No incumbent	80	7	11.43	2.40			
Comparison states[a]	After public financing	Senate	Incumbent	235	76	3.09		1.07	0.96	0.74
			No incumbent	108	26	4.15		0.74	0.53	
		House	Incumbent	785	243	3.23		1.34		0.41
			No incumbent	229	29	7.90		1.66		
	Before public financing	Senate	Incumbent	119	41	2.90			1.20	0.52
			No incumbent	28	5	5.60			1.17	
		House	Incumbent	352	146	2.41				0.51
			No incumbent	62	13	4.77				

				Expected frequencies						
				Contestedness			Odds ratios indicating differences in the odds on being contested by -			
State	Period	Chamber	Incumbent in race	Contested	Not contested	Odds on contested	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	115.62	7.38	15.67	4.98	1.34	2.18	0.53
			No incumbent	50.31	1.69	29.80	4.98	1.34	2.18	
		House	Incumbent	469.58	65.42	7.18	2.17	1.34		0.53
			No incumbent	204.98	15.02	13.65	2.17	1.34		
	Before public financing	Senate	Incumbent	49.75	4.25	11.71	4.98		2.18	0.53
			No incumbent	15.31	0.69	22.27	4.98		2.18	
		House	Incumbent	181.21	33.79	5.36	2.17			0.53
			No incumbent	79.23	7.77	10.20	2.17			
Comparison states[a]	After public financing	Senate	Incumbent	235.98	75.02	3.15		1.34	0.95	0.53
			No incumbent	114.80	19.20	5.98		1.34	0.95	
		House	Incumbent	789.16	238.84	3.30		1.34		0.53
			No incumbent	222.57	35.43	6.28		1.34		
	Before public financing	Senate	Incumbent	112.25	47.75	2.35			0.95	0.53
			No incumbent	26.97	6.03	4.47			0.95	
		House	Incumbent	354.45	143.55	2.47				0.53
			No incumbent	61.83	13.17	4.69				

Source: GAO analysis of state election data.

[a]Comparison states are Connecticut (excluding 2008 elections because public financing was offered to legislative candidates that year), Montana, and South Dakota.

Table 56: Models Fitted to the 5-Way Table in Which the Contestedness of Races Is Cross-Classified by Chamber, Period, State, and Incumbent in Race (Maine vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF[b]	L^2[c]	P[d]
1	{SPCI} {O}	15	161.60	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	16.84	0.1126
3	{SPCI} {SO} {PO} {CO}	12	48.56	<.0001
4	{SPCI} {SO} {PO} {IO}	12	17.44	0.1338
5	{SPCI} {SO} {CO} {IO}	12	27.30	0.0070
6	{SPCI} {PO} {CO} {IO}	12	104.17	<.0001
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	15.48	0.1156
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	8.76	0.5554*
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	16.80	0.0790
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	15.39	0.1186
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	16.66	0.0821
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	14.93	0.1347

Source: GAO analysis of state election data.

[a]S = state (Maine vs. comparison states); P = period (before public financing vs after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table, contestedness (contested vs. not contested). Shading designates the model chosen as preferred.

[b]DF = degrees of freedom.

[c]L^2 = likelihood ratio chi-square.

[d]P = probability.

Margin of Victory

Close Races

The preferred model to describe the data in table 57 involving the closeness of elections (or whether elections were decided by margins of less than 10 percentage points rather than 10 percentage points or more between the winning and losing candidates) in Arizona and its comparison states is Model 13 (see table 58). The preferred model to describe the data in the table 59 involving close races in Maine and its comparison states is Model 4 (see table 60).

- In Arizona, after public financing, the estimated odds on Senate elections involving incumbents being in close races were only 0.18 (see bottom panel, table 57). That is, only 1.8 Senate elections in Arizona in that period were close for every 10 elections that were not close.

    1. The odds on elections being close in the Senate were lower in Arizona than in the three comparison states, by a factor of roughly 0.6, while the odds on elections being close in the House were more than 2 times higher in Arizona than in its comparison states.
    2. The odds on elections being close in both Arizona and its comparison states were the same before and after public financing.

3. Elections were less likely to be close in the Senate than in the House in both periods, by a factor of 0.2 in Arizona and 0.8 in the comparison states.
4. Both Senate and House elections in Arizona and the comparison states were less likely to be close when an incumbent was included in the race, by a factor of roughly 0.8.

- In Maine, after public financing, the estimated odds on Senate elections involving incumbents being in close races were only 0.37 (see bottom panel, table 59). That is, only roughly 4 Senate elections in Arizona in that period were close for every 10 elections that were not close.

1. In both periods and in both chambers elections were more likely to be close in Maine than in the comparison states, by a factor of 1.4.
2. The odds on elections being close were higher after public financing than before, by a factor of 1.3 in both Maine and the comparison states.
3. The odds on elections being close were the same in both the Senate and the House.
4. All of the different elections in Maine and the comparison states were only half as likely to be close when they involved an incumbent.

Table 57: Observed Frequencies in the 5-Way Table in Which the Closeness of Races Is Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Arizona vs. Comparison States)

Observed frequencies										
				Closeness			Odds ratios indicating differences in the odds on being close by -			
State	Period	Chamber	Incumbent in race	Close	Not close	Odds on close	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	7	53	0.13	0.48		0.14	0.33
			No incumbent	12	30	0.40	0.92	1.60	0.32	
		House	Incumbent	46	50	0.92	2.41	0.98		0.74
			No incumbent	15	12	1.25	2.63	3.75		
	Before public financing	Senate	Incumbent	0	16	0.00	0.00		0.00	0.00
			No incumbent	3	12	0.25	0.70		0.75	
		House	Incumbent	16	17	0.94	1.92			2.82
			No incumbent	2	6	0.33	0.63			
Comparison states[a]	After public financing	Senate	Incumbent	36	130	0.28		0.91	0.73	0.64
			No incumbent	43	99	0.43		1.22	0.91	
		House	Incumbent	164	430	0.38		0.78		0.80
			No incumbent	85	179	0.47		0.90		
	Before public financing	Senate	Incumbent	17	56	0.30			0.62	0.85
			No incumbent	10	28	0.36			0.68	
		House	Incumbent	68	139	0.49				0.93
			No incumbent	28	53	0.53				

Expected frequencies										
				Closeness			Odds ratios indicating differences in the odds on being close by -			
State	Period	Chamber	Incumbent in race	Close	Not Close	Odds on close	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	8.96	51.04	0.18	0.58	1.00	0.20	0.76
			No incumbent	7.85	34.15	0.23	0.58	1.00	0.20	
		House	Incumbent	44.86	51.14	0.88	2.22	1.00		0.76
			No incumbent	14.44	12.56	1.15	2.22	1.00		
	Before public financing	Senate	Incumbent	2.39	13.61	0.18	0.58		0.20	0.76
			No incumbent	2.80	12.20	0.23	0.58		0.20	
		House	Incumbent	15.42	17.58	0.88	2.22			0.76
			No incumbent	4.28	3.72	1.15	2.22			
Comparison states[a]	After public financing	Senate	Incumbent	38.33	127.67	0.30		1.00	0.76	0.76
			No incumbent	40.08	101.92	0.39		1.00	0.76	
		House	Incumbent	168.47	425.53	0.40		1.00		0.76
			No incumbent	90.16	173.84	0.52		1.00		
	Before public financing	Senate	Incumbent	16.86	56.14	0.30			0.76	0.76
			No incumbent	10.73	27.27	0.39			0.76	
		House	Incumbent	58.71	148.29	0.40				0.76
			No incumbent	27.66	53.34	0.52				

Source: GAO analysis of state election data.

[a]Comparison states are Colorado, Montana, and South Dakota.

Table 58: Models Fitted to the 5-Way Table in Which the Closeness of Races Is Cross-Classified by Chamber, Period, State, and Incumbent in Race (Arizona vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF	L^2	P
1	{SPCI} {O}	15	61.21	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	33.61	0.0004
3	{SPCI} {SO} {PO} {CO}	12	39.00	0.0001
4	{SPCI} {SO} {PO} {IO}	12	54.96	<.0001
5	{SPCI} {SO} {CO} {IO}	12	34.03	0.0007
6	{SPCI} {PO} {CO} {IO}	12	39.89	<.0001
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	31.51	0.0005
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	13.77	0.1840
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	33.53	0.0002
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	32.56	0.0003
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	32.24	0.0004
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	30.75	0.0006
13	{SPCI} {SO} {CO} {IO} {SCO}	11	14.14	0.2255

Source: GAO analysis of state election data.

[a]S = state (Arizona vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table, closeness (close vs. not close). Shading designates the model chosen as preferred.

[b]DF = degrees of freedom.

[c]L^2 = likelihood ratio chi-square.

[d]P = probability.

Table 59: Observed Frequencies in the 5-Way Table in Which the Closeness of Races is Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Maine vs. Comparison States)

Observed frequencies										
				Closeness			Odds ratios indicating differences in the odds on being close by -			
State	Period	Chamber	Incumbent in race	Close	Not close	Odds on close	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	31	86	0.36	1.71	3.10	0.91	0.41
			No incumbent	24	27	0.89	1.85	1.78	1.23	
		House	Incumbent	135	340	0.40	1.48	1.50		0.55
			No incumbent	85	118	0.72	1.29	1.41		
	Before public financing	Senate	Incumbent	5	43	0.12	0.54		0.44	0.23
			No incumbent	5	10	0.50	4.17		0.98	
		House	Incumbent	37	140	0.26	1.03			0.52
			No incumbent	27	53	0.51	1.25			
Comparison states[a]	After public financing	Senate	Incumbent	41	194	0.21		0.99	0.79	0.44
			No incumbent	35	73	0.48		4.00	0.86	
		House	Incumbent	166	619	0.27		1.04		0.48
			No incumbent	82	147	0.56		1.36		
	Before public financing	Senate	Incumbent	21	98	0.21			0.83	1.79
			No incumbent	3	25	0.12			0.29	
		House	Incumbent	72	280	0.26				0.63
			No incumbent	18	44	0.41				

Expected frequencies										
				Closeness			Odds ratios indicating differences in the odds on being close by -			
State	Period	Chamber	Incumbent in race	Close	Not Close	Odds on close	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	31.78	85.22	0.37	1.37	1.32	1.00	0.52
			No incumbent	21.20	29.80	0.71	1.37	1.32	1.00	
		House	Incumbent	129.02	345.98	0.37	1.37	1.32		0.52
			No incumbent	84.38	118.62	0.71	1.37	1.32		
	Before public financing	Senate	Incumbent	10.55	37.45	0.28	1.37		1.00	0.52
			No incumbent	5.24	9.76	0.54	1.37		1.00	
		House	Incumbent	38.89	138.11	0.28	1.37			0.52
			No incumbent	27.95	52.05	0.54	1.37			
Comparison states[a]	After public financing	Senate	Incumbent	50.15	184.85	0.27		1.32	1.00	0.52
			No incumbent	36.83	71.17	0.52		1.32	1.00	
		House	Incumbent	167.54	617.46	0.27		1.32		0.52
			No incumbent	78.10	150.90	0.52		1.32		
	Before public financing	Senate	Incumbent	20.23	98.77	0.20			1.00	0.52
			No incumbent	7.87	20.13	0.39			1.00	
		House	Incumbent	59.85	292.15	0.20				0.52
			No incumbent	17.42	44.58	0.39				

Source: GAO analysis of state election data.

[a]Comparison states are Connecticut (excluding 2008 elections because public financing was offered to legislative candidates that year), Montana, and South Dakota.

Table 60: Models Fitted to the 5-Way Table in Which the Closeness of Races Is Cross-Classified by Chamber, Period, State, and Incumbent in Race (Maine vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF	L^2	P
1	{SPCI} {O}	15	95.67	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	12.68	0.3144
3	{SPCI} {SO} {PO} {CO}	12	63.09	<.0001
4	{SPCI} {SO} {PO} {IO}	12	16.25	0.1802
5	{SPCI} {SO} {CO} {IO}	12	21.37	0.0452
6	{SPCI} {PO} {CO} {IO}	12	25.47	0.0128
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	9.77	0.4607*
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	12.21	0.2714
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	12.59	0.2476
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	11.24	0.3390
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	11.19	0.3427
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	12.47	0.2549

Source: GAO analysis of state election data.

[a]S = state (Maine vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table closeness (close vs. not close). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

Landslide Races

The preferred model to describe the data in the table 61 involving whether elections were landslides (or whether elections were decided by margins of more than 20 percentage points rather than 20 percentage points or less between the winning and losing candidates) in Arizona and its comparison states is Model 14 (see table 62). The preferred model to describe the data in the table 63 involving landslide elections in Maine and its comparison states is Model 13 (see table 64). The expected frequencies associated with those models indicate the following:

- In Arizona, after public financing, the estimated odds on Senate elections that included incumbents being landslide elections were roughly 1.3 (see bottom panel, table 61). That is, 13 Senate elections in Arizona in that period were landslides for every 10 elections that were not landslides.

    1. The odds on elections being landslides in the Senate were slightly higher in Arizona than in the three comparison states, by factors of roughly 1.2 and 2.4 in the period before and after public financing, respectively, while the odds on elections being landslides in the House were much lower in Arizona than in its comparison states, by factor of 0.3 and 0.5 in the two periods.
    2. In Arizona, elections were only half as likely to be landslides after 2000 than before 2000, while in the comparison states they were slightly more likely to be landslides in the later period, by a factor of 1.08.
    3. Elections were more likely to be landslides in the Senate than in the House in both periods, by a factor of roughly 6.0 in Arizona and 1.3 in the comparison states.
    4. Finally, the odds on elections being landslides were the same in races with incumbents as in races without incumbents.

- In Maine, the odds on elections being landslides after public financing when they involved incumbents and were in the Senate were roughly 0.9 (see bottom panel, table 63).

    1. The odds on elections being landslides were lower in Maine than in its comparison states, by a factor of roughly 0.5 for Senate elections and a factor of 0.7 for House elections.
    2. There was no change over time in landslide elections in Maine or in the comparison states.
    3. Elections were slightly less likely (by a factor of 0.9) to be landslides in the Senate than in the House in Maine, but more likely (by a factor of 1.4) to be landslides in the Senate than in the House in the comparison states.
    4. In both chambers and periods and in both Maine and the comparison states elections were more than twice as likely to be landslides when an incumbent was involved in the race.

Table 61: Observed Frequencies in the 5-Way Table in Which Landslide Races Are Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Arizona vs. Comparison States)

				Observed frequencies						
				Landslides			Odds ratios indicating differences in the odds on being landslides by -			
State	Period	Chamber	Incumbent in race	Landslides	Not landslides	Odds on landslides	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	33	27	1.22	0.96	0.41	4.64	0.92
			No incumbent	24	18	1.33	1.54	0.48	10.67	
		House	Incumbent	20	76	0.26	0.30	0.82		2.11
			No incumbent	3	24	0.13	0.15	0.21		
	Before public financing	Senate	Incumbent	12	4	3.00	2.34		9.38	1.09
			No incumbent	11	4	2.75	3.06		4.58	
		House	Incumbent	8	25	0.32	0.42			0.53
			No incumbent	3	5	0.60	0.79			
Comparison states[a]	After public financing	Senate	Incumbent	93	73	1.27		0.99	1.46	1.47
			No incumbent	66	76	0.87		0.96	1.03	
		House	Incumbent	277	317	0.87		1.16		1.03
			No incumbent	121	143	0.85		1.11		
	Before public financing	Senate	Incumbent	41	32	1.28			1.70	1.42
			No incumbent	18	20	0.90			1.18	
		House	Incumbent	89	118	0.75				0.99
			No incumbent	35	46	0.76				

Expected frequencies										
				Landslides			Odds ratios indicating differences in the odds on being landslides by -			
State	Period	Chamber	Incumbent in race	Landslides	Not Landslides	Odds on landslides	State	Period	Chamber	Incumbent in race
Arizona	After public financing	Senate	Incumbent	34.08	25.92	1.31	1.19	0.53	6.01	1.00
			No incumbent	23.86	18.14	1.31	1.19	0.53	6.01	
		House	Incumbent	17.22	78.78	0.22	0.26	0.53		1.00
			No incumbent	4.84	22.16	0.22	0.26	0.53		
	Before public financing	Senate	Incumbent	11.39	4.61	2.47	2.42		6.01	1.00
			No incumbent	10.68	4.32	2.47	2.42		6.01	
		House	Incumbent	9.61	23.39	0.41	0.52			1.00
			No incumbent	2.33	5.67	0.41	0.52			
Comparison states[a]	After public financing	Senate	Incumbent	87.25	78.75	1.11		1.08	1.30	1.00
			No incumbent	74.64	67.36	1.11		1.08	1.30	
		House	Incumbent	273.54	320.46	0.85		1.08		1.00
			No incumbent	121.57	142.43	0.85		1.08		
	Before public financing	Senate	Incumbent	36.90	36.10	1.02			1.30	1.00
			No incumbent.	19.21	18.79	1.02			1.30	
		House	Incumbent	91.20	115.80	0.79				1.00
			No incumbent	35.69	45.31	0.79				

Source: GAO analysis of state election data.

[a]Comparison states are Colorado, Montana, and South Dakota.

Table 62: Models Fitted to the 5-Way Table in Which Landslide Races Are Cross-Classified by Chamber, Period, State, and Incumbent in Race (Arizona vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF	L^2	P
1	{SPCI} {O}	15	73.86	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	39.47	<.0001
3	{SPCI} {SO} {PO} {CO}	12	40.41	<.0001
4	{SPCI} {SO} {PO} {IO}	12	65.74	<.0001
5	{SPCI} {SO} {CO} {IO}	12	39.47	<.0001
6	{SPCI} {PO} {CO} {IO}	12	52.37	<.0001
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	35.55	0.0001
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	10.04	0.4369
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	37.39	<.0001
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	38.20	<.0001
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	39.05	<.0001
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	37.99	<.0001
13	{SPCI} {SO} {PO} {CO} {IO} {SPO} {SCO}	9	5.12	0.8235*
14	{SPCI} {SO} {PO} {CO} {SPO} {SCO}	10	6.56	0.7664*

Source: GAO analysis of state election data.

[a]S = state (Arizona vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table landslides (landslides vs. not landslides). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

Table 63: Observed Frequencies in the 5-Way Table in Which Landslide Races Are Cross-Classified by Chamber, Period, State, and Whether an Incumbent Was in the Race; Expected Frequencies under the Preferred Model for That Table; and Odds and Odds Ratios Derived from Them (Maine vs. Comparison States)

Observed frequencies										
				Landslides			Odds ratios indicating differences in the odds on being landslides by -			
State	Period	Chamber	Incumbent in race	Landslides	Not landslides	Odds on landslides	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	53	64	0.83	0.41	0.54	0.86	2.19
			No incumbent	14	37	0.38	0.47	2.46	0.99	
		House	Incumbent	233	242	0.96	0.69	0.85		2.53
			No incumbent	56	147	0.38	0.53	0.60		
	Before public financing	Senate	Incumbent	29	19	1.53	0.93		1.35	9.92
			No incumbent	2	13	0.15	0.10		0.24	
		House	Incumbent	94	83	1.13	0.80			1.79
			No incumbent	31	49	0.63	1.24			
Comparison states[a]	After public financing	Senate	Incumbent	157	78	2.01		1.22	1.45	2.52
			No incumbent	48	60	0.80		0.52	1.11	
		House	Incumbent	456	329	1.39		0.98		1.92
			No incumbent	96	133	0.72		1.41		
	Before public financing	Senate	Incumbent	74	45	1.64			1.17	1.06
			No incumbent	17	11	1.55			3.02	
		House	Incumbent	206	146	1.41				2.75
			No incumbent	21	41	0.51				

Expected frequencies										
				Landslides			Odds ratios indicating differences in the odds on being landslides by -			
State	Period	Chamber	Incumbent in race	Landslides	Not landslides	Odds on landslides	State	Period	Chamber	Incumbent in race
Maine	After public financing	Senate	Incumbent	55.77	61.23	0.91	0.48	1.00	0.91	2.19
			No incumbent	14.96	36.04	0.41	0.48	1.00	0.91	
		House	Incumbent	237.19	237.81	1.00	0.71	1.00		2.19
			No incumbent	63.43	139.57	0.45	0.71	1.00		
	Before public financing	Senate	Incumbent	22.88	25.12	0.91	0.48		0.91	2.19
			No incumbent	4.40	10.60	0.41	0.48		0.91	
		House	Incumbent	88.38	88.62	1.00	0.71			2.19
			No incumbent	25.00	55.00	0.45	0.71			
Comparison states[a]	After public financing	Senate	Incumbent	154.41	80.59	1.92		1.00	1.36	2.19
			No incumbent	50.34	57.66	0.87		1.00	1.36	
		House	Incumbent	459.25	325.75	1.41		1.00		2.19
			No incumbent	89.57	139.43	0.64		1.00		
	Before public financing	Senate	Incumbent	78.19	40.81	1.92			1.36	2.19
			No incumbent	13.05	14.95	0.87			1.36	
		House	Incumbent	205.93	146.07	1.41				2.19
			No incumbent	24.25	37.75	0.64				

Source: GAO analysis of state election data.

[a]Comparison states are Connecticut (excluding 2008 elections because public financing was offered to legislative candidates that year), Montana, and South Dakota.

Table 64: Models Fitted to the 5-Way Table in Which Landslide Races Are Cross-Classified by Chamber, Period, State, and Incumbent in the Race (Maine vs. Comparison States)

Model number	Marginals (effects) fitted[a]	DF	L^2	P
1	{SPCI} {O}	15	147.84	<.0001
2	{SPCI} {SO} {PO} {CO} {IO}	11	18.21	0.0769
3	{SPCI} {SO} {PO} {CO}	12	100.30	<.0001
4	{SPCI} {SO} {PO} {IO}	12	22.01	0.0374
5	{SPCI} {SO} {CO} {IO}	12	19.18	0.0842
6	{SPCI} {PO} {CO} {IO}	12	50.44	<.0001
7	{SPCI} {SO} {PO} {CO} {IO} {SPO}	10	14.84	0.1381
8	{SPCI} {SO} {PO} {CO} {IO} {SCO}	10	13.62	0.1911
9	{SPCI} {SO} {PO} {CO} {IO} {SIO}	10	17.30	0.0679
10	{SPCI} {SO} {PO} {CO} {IO} {PCO}	10	18.17	0.0521
11	{SPCI} {SO} {PO} {CO} {IO} {PIO}	10	18.08	0.0537
12	{SPCI} {SO} {PO} {CO} {IO} {CIO}	10	18.12	0.0530
13	{SPCI} {SO} {CO} {IO} {SCO}	11	14.57	0.2032

Source: GAO analysis of state election data.

[a]S = State (Maine vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); I = incumbent status (incumbent in race vs. incumbent not in race); O = outcome, in this table, landslides (landslide vs. not landslide). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

Incumbent Reelection

The preferred model to describe the data in tables 65 and 67 involving the likelihood of incumbents being reelected among those incumbents who ran in contested races is Model 9. The expected frequencies associated with that model for the two tables indicate the following:

- In Arizona, both before public financing and after public financing and in both the House and Senate, the odds on incumbents winning elections in which they ran were roughly 40 (see bottom panel, table 65). That is, 40 elections were won by incumbents for every one that was lost. The odds on elections being won by incumbents were higher in Arizona than in its comparison states, by a factor of nearly 4. There was no difference across the two periods or across the House and Senate in the odds on elections being won by incumbents.

- In Maine, both before public financing and after public financing and in both the House and Senate, the odds on incumbents winning elections in which they ran were roughly 8 (see bottom panel, table 67). That is, 8 elections were won by incumbents for every one that was lost. The odds on elections being won by incumbents were lower in Maine than in its comparison states, by a factor of roughly 0.6. There was no difference across the two periods or across the House and Senate in the odds on elections being won by incumbents.

Table 65: Observed Frequencies in the 4-Way Table in Which the Incumbent Status (Win/Lose) is Cross-Classified by Chamber, Period, and State, Expected Frequencies under the Preferred Model for That Table, and Odds and Odds Ratios Derived from Them (Arizona vs. Comparison States)

Observed data			Incumbent -			Odds ratios indicating differences in the odds on incumbents winning by -		
State	Period	Chamber	Won	Did not win	Odds on won	State differences	Before and after differences	Chamber differences
Arizona	After public financing	Senate	60	0				
		House	92	4	23.00	1.84		
	Before public financing	Senate	15	1	15.00	1.34		
		House	33	0				
Comparison states[a]	After public financing	Senate	149	17	8.76		0.78	0.70
		House	550	44	12.50		1.26	
	Before public financing	Senate	67	6	11.17			1.13
		House	188	19	9.89			

Expected data						Odds ratios indicating differences in the odds on incumbents winning by -		
			Incumbent					
State	Period	Chamber	Won	Did not win	Odds on won	State differences	Before and after differences	Chamber differences
Arizona	After public financing	Senate	58.54	1.46	40.00	3.61	1.00	1.00
		House	93.66	2.34	40.00	3.61	1.00	
	Before public financing	Senate	15.61	0.39	40.00	3.61		1.00
		House	32.20	0.80	40.00	3.61		
Comparison states[a]	After public financing	Senate	152.27	13.73	11.09		1.00	1.00
		House	544.88	49.12	11.09		1.00	
	Before public financing	Senate	66.96	6.04	11.09			1.00
		House	189.88	17.12	11.09			

Source: GAO analysis of state election data.

[a]Comparison states are Colorado, Montana, and South Dakota.

Table 66: Models Fitted to the 4-Way Table in Which Incumbent Status (Win/Lose) is Cross-Classified by Chamber, Period, and State (Arizona vs. Comparison States)

Model number	Marginals (effects) fitted	DF	L^2	P
1	{SPC} {O}	7	18.76	0.009
2	{SPC} {SO} {PO} {CO}	4	7.38	0.1172
3	{SPC} {SO} {PO}	5	7.73	0.1719
4	{SPC} {SO} {CO}	5	7.52	0.1845
5	{SPC} {PO} {CO}	5	18.48	0.0024
6	{SPC} {SO} {PO} {CO} {SPO}	3	7.29	0.0632
7	{SPC} {SO} {PO} {CO} {SCO}	3	6.34	0.0964
8	{SPC} {SO} {PO} {CO} {PCO}	3	7.28	0.0634
9	{SPC} {SO}	6	7.89	0.2461

Source: GAO analysis of state election data.

[a]S = state (Arizona vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); O = outcome, in this table incumbent winning (win vs. lose). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

Table 67: Observed Frequencies in the 4-Way Table in Which the Incumbent Status (Win/Lose) is Cross-Classified by Chamber, Period, and State, Expected Frequencies under the Preferred Model for That Table, and Odds and Odds Ratios Derived from Them (Maine vs. Comparison States)

Observed data			Incumbent			Odds ratios indicating differences in the odds on incumbents winning by -		
State	Period	Chamber	Won	Did Not win	Odds on won	State differences	Before and after differences	Chamber differences
Maine	After public financing	Senate	105	12	8.75	0.73	0.38	1.03
		House	425	50	8.50	0.54	1.40	
	Before public financing	Senate	46	2	23.00	1.44		3.78
		House	152	25	6.08	0.46		
Comparison states[a]	After public financing	Senate	217	18	12.06		0.75	0.77
		House	738	47	15.70		1.20	
	Before public financing	Senate	112	7	16.00			1.22
		House	327	25	13.08			
Expected data			**Incumbent**			**Odds ratios indicating differences in the odds on incumbents winning by -**		
State	Period	Chamber	Won	Did Not win	Odds on won	State differences	Before and after differences	Chamber differences
Maine	After public financing	Senate	104.25	12.75	8.18	0.57	1.00	1.00
		House	423.26	51.74	8.18	0.57	1.00	
	Before public financing	Senate	42.77	5.23	8.18	0.57		1.00
		House	157.72	19.28	8.18	0.57		
Comparison states[a]	After public financing	Senate	219.71	15.29	14.37		1.00	1.00
		House	733.93	51.07	14.37		1.00	
	Before public financing	Senate	111.26	7.74	14.37			1.00
		House	329.10	22.90	14.37			

Source: GAO analysis of state election data.

[a]Comparison states are Connecticut (excluding 2008 elections because public financing was offered to legislative candidates that year), Montana, and South Dakota.

Table 68: Models Fitted to the 4-Way Table in Which Incumbent Status (Win/Lose) is Cross-Classified by Chamber, Period, and State (Maine vs. Comparison States)

Model number	Marginals (effects) fitted	DF	L^2	P
1	{SPC} {O}	7	19.07	0.008
2	{SPC} {SO} {PO} {CO}	4	5.29	0.2591
3	{SPC} {SO} {PO}	5	5.44	0.3649
4	{SPC} {SO} {CO}	5	5.71	0.3354
5	{SPC} {PO} {CO}	5	18.55	0.0023
6	{SPC} {SO} {PO} {CO} {SPO}	3	5.22	0.1562
7	{SPC} {SO} {PO} {CO} {SCO}	3	3.9	0.273
8	{SPC} {SO} {PO} {CO} {PCO}	3	2.36	0.5008
9	{SPC} {SO}	6	5.85	0.4402

Source: GAO analysis of state election data.

[a]S = state (Maine vs. comparison states); P = period (before public financing vs. after public financing); C = chamber (Senate vs. House); O = outcome, in this table incumbent winning (win vs. lose). Shading designates the model chosen as preferred.
[b]DF = degrees of freedom.
[c]L^2 = likelihood ratio chi-square.
[d]P = probability.

ADDITIONAL FACTORS WE ASSESSED IN EVALUATING MAINE'S AND ARIZONA'S PUBLIC FINANCING PROGRAMS

We conducted extensive research on many factors that could affect our assessment of changes in measures of electoral competition and outcomes for Maine and Arizona. This section provides a brief overview of issues related to three of these factors: margin of victory calculations for multimember districts, redistricting and incumbent reelection rates, and voter turnout and participation data.

Calculating Multimember District Victory Margins and Electoral Competition

Political scientists have long struggled with how to calculate margins of victory in a multimember setting. The margin of victory in a single-member district can be calculated by subtracting the proportion of votes going to the runner-up from the proportion of votes going to the winner. However, because multimember districts allow for more than one winner, the question of which margin(s) of victory matters persists (e.g., in a two-member district, that between the two winners, the first winner and first runner-up, the second winner and first runner up, or all margins).

For purposes of computing a measure of margin of victory, the primary multimember House state of interest in our analysis, Arizona, as well as its multimember counterpart South Dakota, only contain two-member districts rather than multimember districts of three winners or more. We seek a measure that is intuitive, insensitive to party or the number of candidates in the race, and ideally can be compared with the margin of victory for a simple single-member district.

Prior to selecting the measure described below, we examined a series of measures proposed by academics. This includes, for example, a "psuedo-pairing" methodology proposed by Richard Niemi, Simon Jackman and Laura Winsky.[14] This measure calculates two margins of victory for each two-seat district, effectively treating each pairing as if it were as a single member district. The first margin of victory is that between the highest winning Republican (or Democrat) and the member of the opposing party with the lowest vote, and the second is the margin of victory between the second winning Republican (or Democrat) and the member of the opposing party with the second lowest vote. One advantage of this method is that it accounts for the fact that major state parties in South Dakota and Arizona often nominate two candidates from each party, making such a calculation possible. However, because multimember districts in Arizona and South Dakota place no restrictions on the distribution of winning candidates by party, and because public financing was expected to increase the participation of third party candidates, we decided against placing partisan constraints on our measure of margin of victory for a multimember district.

An alternative approach to calculating a multimember margin of victory is that proposed by William Berry, Michael Berkman and Stuart Schneiderman. They consider their

[14]Richard G. Niemi, Simon Jackman, and Laura R. Winsky, "Candidacies and Competitiveness in Multimember Districts," *Legislative Studies Quarterly, vol.* XVI, No. I (February 1991), pp. 91-109.

measure – a comparison of the number of votes going to a winning legislator minus votes to the top runner up, relative to the average number of votes cast for a seat in the district – to be a measure of how close a legislator came to losing an election.[15] This measure provides an assessment of how each specific candidate performed when facing multiple candidates, but is not designed as a means of characterizing the overall level of competition in a multimember district. In contrast, Neil Malhotra proposes a calculation of electoral competition based on an economic indicator of market share, which provides a means of accounting for the distribution of votes across candidates.[16] Unfortunately, because of its sensitivity to the number of candidates in an election, Malhotra's measure cannot be generalized across elections with different numbers of candidates.[17]

We limited our final consideration of multimember margin of victory to three potential measures. The first, Method A, computes an "average" margin of victory across the winners in a multimember district race.[18] The second, Method B, averages the margin of victory between the first and second winner with those margins between the first winner and first runner-up and the second winner and first runner-up. Method C considers the margin of victory between the second winner and first runner-up, and excludes the number of votes going to the first winner from the denominator. Specifically, for each of the three methods:

Method A. To calculate the numerator, we average the number of votes from the top winner and second winner, and subtract the number of votes to the first runner up. The denominator is the total number of votes cast. This is mathematically equivalent to calculating the margin of victory of the first winner relative to the runner up, separately calculating the margin of victory between the second winner and the first runner up, and averaging the two margins. This measure has the advantage of accounting for both winners' spreads of victory relative to the first runner up. The disadvantages are that, from the perspective of the top runner up, the relevant margin of victory is that between the second winner and top runner up. Votes that went to the top winner are, in a sense, irrelevant because it is a higher threshold than needed to change the outcome of which candidates take the winning seats.

Method B. To the average above, we add in the margin of victory between the first and second winner. This has the advantage of narrowing the calculation of margin of victory if the race between the first and second winner was also quite close.

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[15]William D. Berry, Michael B. Berkman and Stuart Schneiderman, "Legislative Professionalism and Incumbent Reelection: The Development of Institutional Boundaries," *The American Political Science Review*, vol. 94, no. 4 (December 2000), pp. 859-874.

[16]Niel Malhotra, "The Impact of Public Financing on Electoral Competition: Evidence from Arizona and Maine," *State Politics and Policy Quarterly*, vol. 8, no. 3 (Fall 2008), pp. 263-281.

[17]Although Malhotra limits his analysis to the Maine and Arizona Senate races (and thus single districts), his measure could be expanded to account for competition in multimember districts with the same number of candidates.

[18]According to one researcher we corresponded with, a separate calculation of each margin of victory between the runner-up and either winner is a generalization of the single-member margin of victory because it considers how many votes the winner could have given away and, all things equal, still have won.

Method C. We take the top winner as "given" and focus instead on competition between the second winner and first runner up. The measure takes the difference in the number of votes between the second winner and first runner up, and excludes the number of votes that went to the first winner from the denominator of the calculation. Theoretically, this measure treats the first winner as irrelevant, because from the perspective of the runner up, it is the difference in votes between the runner up and second winner that cost the runner up the seat. However, it discards as uninformative any element of competition that exists between the top winner and the second winner.

Table 69 illustrates how these different measures would play out in the context of different types of elections among three candidates in a two-seat district with an electorate of 50,000 voters each casting two votes. The table illustrates that these measures do not behave in a monotonic fashion, but vary depending on the nature of the vote distribution in a race. For example, Methods A and B make a wide distinction between a race that is fully competitive race across all three candidates and a race that is highly competitive among the second winner and first runner-up, while Method C makes much less of a distinction. We found Method C preferable to A and B because it prioritizes competition between the second winner and first runner up over competition between the two winners but not the runner up. However, we acknowledge that Method C may not be the best measure of the three to represent the overall competitiveness of a race or to illustrate the distribution of votes across all candidates.

Table 69: Sensitivity of Multimember Victory Margin Alternatives to Different Vote Distributions in a Three-Candidate Race

Type of race	Top winner number of votes	Second winner number of votes	Runner-up number of votes	Total votes cast	Method A – winners relative to runner-up (percent)	Method B – all margins relevant (percent)	Method C – top winner irrelevant (percent)
Three-way tight race between winner, second winner and runner up	33,700	33,500	32,800	100,000	0.8%	0.6%	1.1%
Top winner far ahead, second winner and runner up far behind	50,000	26,000	24,000	100,000	14.0	17.3	4.0
Top winner and second winner close, runner up far behind	38,000	37,000	25,000	100,000	12.5	8.7	19.4
Wide distance between all candidates	50,000	35,000	15,000	100,000	27.5	23.3	40.0

Source: GAO analysis.

Overall, given the lack of academic consensus on the topic, we were unable to identify criteria to suggest that any of the three measures we tested were "better" than the others at mapping to a single-member margin of victory. Depending on the research objective, scholars might prefer to use a different measure than the one we selected. Recognizing that our particular choice of measure might have an influence on the interpretation of our results of whether a race was competitive, we also ran our multivariate analyses

based on margin of victory (including close and landslide elections in addition to the direct measure) excluding the multimember district calculations. We confirmed that the results from analyses excluding multimember districts were substantively similar to those that included them, and we are confident that our conclusions with respect to these aspects of electoral competition are not driven by our selection of a particular measure for multimember margin of victory.

Redistricting and Incumbent Reelection Rates

Several scholars critiqued our 2003 report for failure to account for the influence of redistricting.[19] Scholars also criticized our decision not to consider incumbent losses in the primary when calculating incumbent reelection rates. We examined the potential effect of redistricting and alternative incumbent reelection rate calculations on our methods for assessing electoral competition in several ways.

First, we confirmed that our analyses of incumbency reelection rates were not sensitive to an arbitrary assignment decision on our behalf, or to a decision to exclude incumbent losses in the primary from our calculation.[20] One descriptive measure of incumbent reelection presented in our report—GAO-10-390—considers the number of incumbents that won, relative to the number of incumbents who ran. Because it is focused on candidates rather than races, we need not assign a race with more incumbents than available seats to a status of either incumbent "loss" or "win" when both outcomes have occurred.

Nevertheless, we also calculated the incumbent reelection rate excluding incumbents in general election races with more incumbents than seats from both the numerator and denominator of calculations. This resulted in minor increases in our estimates of incumbent reelection rates because we excluded more candidates from the denominator than from the numerator.[21] The increase for overall general elections estimates of incumbent reelection races was less than 1/3 of a percentage point in any of the states we looked at, and less than 2 percentage points for any specific state in the year the pairing occurred.[22]

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[19]GAO, *Campaign Finance Reform: Early Experiences of Two States That Offer Full Public Funding for Political Candidates*, GAO-03-453 (Washington, D.C.: May 9, 2003).

[20]We considered candidates to be incumbents if they were running for the same seat as they had held in a previous term. We did not consider a candidate to be an incumbent if he or she vied for a seat in a different chamber than the one in which he/she previously held office.

[21]In general election races, this exclusion involved three sets of paired incumbents in Maine in 2004 (two House and one Senate); one set of paired incumbents each in Montana and Connecticut House races in 2004 and 2002 respectively; and one set of three incumbents vying for one seat in South Dakota House races in 2002. Colorado had no races with more incumbents than seats between 1996 and 2008, and Arizona had no general election races with more incumbents than seats.

[22]We did not run a sensitivity analysis of the potential effects of redistricting on incumbency reelection rates in primaries. Instances of paired incumbents (or a greater number of incumbents than seats) were infrequent in primaries, affecting two of Montana's House primary races in 2004, three of Arizona's House primary elections in 2002, one primary race in Connecticut in 2002, and one each South Dakota House primary in 2000 and 2002. Colorado experienced no cases of multiple incumbents in a race from 1996 to 2008.

Incumbents may choose to run (or not to run) in a general election regardless of whether they won a primary election, and in some states primaries are not held when a party's candidate for a seat is running uncontested by any challengers. Because of this, we did not calculate a conditional incumbent reelection rate for those general election incumbents who also ran in primaries. Instead, we examined whether accounting for incumbents who lost at the primary stage would change the overall individual incumbent reelection rate notably in Maine or Arizona.[23] Tables with these data are available in this e-supplement in the section on Maine and Arizona data. In Maine, incumbent reelection rates in primary elections from 1996 through 2008 met or exceeded that for general elections in both the House and the Senate. As a result, the combined incumbent reelection rate across both primary and general elections met or exceeded the rate for general elections graphed in our report. In Arizona, the incumbent reelection rate for primary elections was not consistently higher or lower than that for general elections across all years; it ranged from approximately 4 percentage points higher than the general election rate in 1998 to nearly 19 percentage points lower in 2002. Overall, the combined incumbent reelection rate across all Arizona primary and general elections averaged lower than the overall general election rate in each election from 2002 to 2008. However, it still exceeded 84 percent in 2002, 92 percent in 2004, and 96 percent in 2006 and 2008.

In contrast to the descriptive measures described above, the measure of incumbency used in statistical models of general election outcomes did assign a value of "incumbent won" to elections in which more incumbents vied against each other than seats were available, or multimember district races where one of two incumbents running was reelected.[24] In addition to the multivariate analyses presented in the report, we tested our statistical models of incumbent reelection excluding races with more incumbents than seats and confirmed that the exclusion did not affect the substantive interpretation of the modeling results. We did not estimate the influence of reclassifying as losses those multimember House races in Arizona and South Dakota where only one of two incumbent contenders won. However, given that these types of House races occurred less frequently in Arizona House elections than in Arizona's multimember counterpart, the South Dakota House, we do not have reason to believe that either excluding these cases or reclassifying these cases as incumbent losses would affect the substantive interpretation of our modeling results.

In addition to confirming the robustness of our incumbency measures, we also considered the geographic influence of redistricting in the four states in our analysis for which state legislative district boundary files were available from the Census Bureau following both the 1990 and 2000 decennial Census. This includes Arizona, Colorado

[23]Primary processes vary dramatically across states and parties. For example, a large proportion of incumbents in general elections in Connecticut and South Dakota did not participate in primaries. In contrast, the vast majority of incumbent candidates in general elections in our other comparison states participated in primary races.

[24]In addition to those few races with more incumbents running than seats available, Arizona had between one and two House general election races each year with only one incumbent winner out of two running in each multimember district, and South Dakota had between zero and four House general races with only one incumbent winner out of two running in each multimember district.

Connecticut, and South Dakota.[25] This analysis revealed that, relative to comparison states, Arizona districts experienced the greatest geographic change as a result of redistricting. New Arizona districts tended to be comprised of land from a greater number of old districts than new districts in other states. Also, new Arizona districts were less likely to overlap the old district of the same name; and among those that did overlap a smaller percentage of land mass appeared in the new district of the same name than in other states. Although the three other states experienced some redistricting, the new districts in these states contained, on average, the majority of the land area of the old district with the same name.

Our analysis does not account for various potential influences of redistricting. For example, our definition of incumbent does not encompass politicians who (prior to redistricting) held a seat in one chamber but sought election in a different chamber subsequent to redistricting, and thus does not capture the potential influence of redistricting on incumbents who switch chambers. Additionally, redistricting has the potential to affect electoral outcomes in many other ways, such as by changing the demographic or political characteristics of a district's constituents or the economic base of a district. We did not try to quantify the influence of these or other potential issues related to redistricting on electoral outcomes. However, our analysis confirmed that our descriptive estimates of incumbent reelection rates are not sensitive to assignment rules for winners and losers or to the inclusion of incumbents at the primary stage. Additionally, our geographic analysis showed that Arizona experienced a much greater change in district boundaries relative to three other states in our analysis.

Voter Turnout and Participation Data

While political participation encompasses many activities, proponents of state legislative campaign finance reform have in Maine and Arizona expected that such programs would have a specific influence on voter turnout.[26] Longitudinal sources of voter turnout information include the U.S. Census Bureau's series on registration and turnout, based on self-reports collected in the Current Population Survey's Voting and Registration Supplement (CPS); Congressional Research Service reports on Voter Registration and Turnout; Congressional Quarterly's series *America Votes*; the office of the Clerk of the House of Representatives; American National Election Studies (ANES); the Federal Election Commission (FEC); and, in more recent years, the Election Assistance Commission (EAC) created by the Help America Vote Act (HAVA) of 2002. Other resources, such as George Mason University's United States Election Project and American University's Center for the Study of the American Electorate, also report on and compile turnout information.

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[25]The boundary files for Arizona use the current districts, which were instituted in 2004 pursuant to a court challenge to the original redistricting plan used in the 2002 state legislative elections.

[26]These other forms of political participation include, but are not limited to canvassing, contacting media, participating in political protests, working for campaigns or issue groups, fundraising, donating money, and contacting representatives on issues of concern. See, for example, Rosenstone and Hansen, *Mobilization, Participation and Democracy in America*, (New York: MacMillan Publishing Company, 1993) and Verba, Schlozman and Brady, *Voice and Equality*, (Cambridge, MA: Harvard University Press, 1995).

Calculation of changes in voter turnout over time depends less on the specific data for the numerator and denominator than it does on the consistency of these numbers over time and use of comparable time frames and types of elections.[27] However, data availability, data-reporting issues, and other factors require researchers to make multiple assumptions about the consistency or applicability of the data they choose when calculating turnout estimates. These issues, particularly those related to which count of ballots to use in the numerator of estimates, hinder comparisons of estimates of turnout in Maine and Arizona in recent years to turnout in elections in 2000 and before.

Many turnout estimates, such as those reported by the Census and EAC, have used as a denominator the voting age population (VAP), which includes those U.S. residents age 18 and up. The VAP reported regularly by EAC is based on state-level population estimates from the Census Bureau as of July 1 of any given year, which may not account for population changes that may have occurred between July and Election Day in November.[28] Further, state-level population estimates are adjusted retroactively following each decennial Census, so the main component of VAP has the potential to change over time until Census estimates are finalized.[29] The estimates that have the most potential to deviate from the intercensal adjustments are those for smaller jurisdictions, and those made longer after a decennial Census.

In contrast to VAP, researchers have greatly advanced the concept and use of the "voting eligible population" (VEP) in the denominator of turnout estimates.[30] This figure adjusts VAP estimates to account for citizenship, state felony disenfranchisement laws, overseas voting, and other factors that determine which U.S. citizens and residents can vote. Adjustments to account for voter eligibility are likely to produce more accurate estimates of turnout than estimates based on VAP alone. However, adequate estimation of the VEP requires use of multiple data sources and assumptions about the distribution of population, citizens and disqualified felons across states and over time.[31]

One potential source of VEP estimates is voter registration rolls. However, researchers have questioned the accuracy of state registration files for estimating voter eligibility, often because these rolls include individuals who have moved to another state but have not yet been removed from registration lists. Additionally, states have different rules for who is included or purged from such rolls in a given year, or whether or not nonregistered voters are allowed to register on the same day that they vote.

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[27]While turnout fluctuates widely depending on local races and circumstances, it is generally much higher in presidential years than in other election years.

[28]Lacking July 1 data on the 2004 VAP, EAC used Census estimates of population to project the growth measured from 2002 to 2003 through to November of 2004.

[29]Finalized Census population estimates for the post-2000 time period will not be completed until sometime after the 2010 census.

[30]For a detailed discussion of the differences between the two measures, as well as information on how to make eligibility adjustments, see http://elections.gmu.edu/FAQ.html.

[31]According to EAC, after accounting for citizenship "the true number of eligible voters is reduced further by variation in State laws such as the eligibility of those convicted of felony crimes and those judged to be mentally incapacitated, and there is little reliable data on the impact of such laws."

Those making adjustments for noncitizenship in particular face challenges relating to how information on citizenship has been collected and changes in data sources over time. For years, the CPS has collected information on citizenship for those U.S. residents within its sampling frame, but not for all U.S. residents. Similarly, the recently instituted American Community Survey (ACS) collects information on citizenship. While both CPS and ACS have been designed to allow for state-level estimates, the data are survey-based, subject to sampling and nonsampling errors, and can be projected only to the population covered by their respective sampling frames, which differ from each other.[32] Researchers seeking to avoid the limited frame of surveys like CPS or ACS could instead use interpolation between decennial Censuses, or projections from the most recent decennial Census, to estimate citizenship at the state level. However, researchers must be careful that such interpolation and projections adequately capture differential growth rates in the noncitizen population over time and across states.

Since 1994, the U.S. Census Bureau Current Population Reports publications on voter turnout have included national and regional-level calculations of VAP and citizen voting-age population (CVAP) based on population estimates from the CPS November Voting and Registration Supplement. Since 2004, EAC has also reported estimates of CVAP based on Census Bureau population estimates. However, the source of the specific Census information used to calculate CVAP in EAC biennial reports has changed over time. In 2004, this EAC constructed its CVAP measure by projecting the proportion of noncitizens from Census 2000 population estimates to its estimate of the November 2004 VAP. In 2006 and 2008, EAC's VAP measure was based on Census population estimates for July 1 of each respective year, but its CVAP measure was based on data from the ACS. The CVAP measures reported by EAC do not account for the statutory eligibility of specific individuals to vote based on other factors such as state felony disenfranchisement laws, and thus likely overestimate the population eligible to vote. Nevertheless, according to EAC, noncitizens are the largest ineligible population and thus the most important adjustment in constructing VEP.

Although it is possible to use information from a variety of sources to generate VEP estimates over time, these estimates require researchers to choose from multiple imperfect and variable, or both, sources of information, to decide whether estimates require interpolation or projection, and to make assumptions about the applicability of such data across states and over time.

As with selection of a voting population base (VAP or VEP), the choice of a numerator for turnout calculations can also be challenging. Historically, surveys that collect self-reports of voting behavior are notoriously subject to overreporting bias, often attributed to social desirability. In recent years, advancements in question phrasing and the ability to validate self-reports of voting against local voting records have helped researchers quantify the influence of self-reporting bias on turnout calculations. However, supplementary data, such as voter validation files, can require expensive and resource-

[32]The CPS sample is based on households and provides estimates for the noninstitutionalized population in the United States; it excludes individuals living abroad, in correctional institutions, and nursing homes. The ACS sample is based on U.S. housing units and includes adults living in group quarters such as nursing homes, prisons, and college dormitories.

intensive research, and differences in methodologies—and in the quality or existence of state registration data—can lead to different conclusions as to the magnitude of overreporting.

Presumably more reliable than individuals' reports are state reports of turnout information that are collected from election officials at the state, county, and local level. Official turnout data on federal elections, including vote tallies for specific federal offices, have historically been compiled by the office of the Clerk of the House and are also published by the Federal Election Commission. Organizations and researchers have used data such as these to construct state-level measures of the vote for highest office, usually President or Senate. However, many individuals who cast ballots do not cast a vote for the highest office, and the specific office used in constructing a measure of highest vote count has varied within and across states. One prominent researcher has suggested that the figure that is most comparable across states is total ballots cast, regardless of whether these ballots included votes for all races on the ticket or were counted. Even in recent years, however, some states have failed to report total ballots cast to organizations collecting turnout information, reporting instead only the number of votes for the highest office on the ballot.

Since 2004, EAC has administered surveys to elections officials to assess turnout, registration levels, absentee and provisional voting, access to polling places, and other issues. However, states have different policies for how to collect and report such statistics. For example, states' reported number of total voters participating is not always equivalent to—or even similar to—the number of ballots counted or the vote for highest office. According to EAC's report on voting in the 2008 elections:

> "Election data collection varied significantly in the 55 States and territories that responded to the 2008 survey. Most States rely at least to some degree on centralized voter registration databases (VRDs) and voter history databases, which allow State election officials to respond to the survey at the local level for many questions. Other States, conversely, collect relatively little election data at the State level, and instead relied on cooperation from county election officials to complete the survey. States and local offices vary widely in the amount of resources devoted to data collection, and in the emphasis placed on data collection. Some States did not collect data in all the categories requested in the survey, and others did not have data for all their local jurisdictions for all variables…. ***Caution is necessary when interpreting these survey data, particularly when comparing these data from year to year or State to State, because of changes to the survey, changes in State tracking of data across time, and the varying levels of completeness in many States' responses.***" [emphasis added]

For the purposes of our report, the vote count reported by EAC and other researchers for Maine and Arizona is not consistent over the time period of interest (i.e., 1996 through 2008), and thus the comparability of estimates based on these data before and after the implementation of public financing in these states is questionable. EAC data covering 1996 through 2002 report as turnout the vote for highest office in each state; the

total ballots counted or total turnout figure is not reported. Beginning in 2004, EAC has reported total ballots cast, total ballots counted or total voters participating for Maine and Arizona, but has not consistently reported the vote for highest office for these states. Similarly, turnout data available from the George Mason University United States Elections project lack information on total turnout prior to 2004 for Maine.

Alternative resources for longitudinal or cross-state estimates of turnout include ANES, CPS, and other surveys, which are subject to significant overreporting bias when compared with official turnout statistics published by FEC and EAC. Also, estimates of the numerator from surveys may be subject to variation resulting from changes in question wording and sampling methods over time. For example, ANES recently used a randomized experiment to test a question revision and found that it reduced overreporting by an estimated 8 percentage points.[33] However, as we have noted, improvements in measurement such as these often come at the expense of being able to generate consistent longitudinal data, because one cannot tell if changes reflect a new trend or the new question wording. Additionally, surveys that are designed specifically to be nationally representative, such as ANES and other institutional surveys like the General Social Survey, may not be suitable for state level estimates (particularly for small states). Some private polling companies conduct exit polls and other data that can be used in generating turnout estimates; however, these data may be proprietary and their nature and accuracy also depend on survey design and data collection procedures.

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[33]ANES tested the question in 2002 using randomized experiments to assign respondents to either the original or revised question, and based its estimate of reduction in overreporting on "official returns from the Federal Election Commission with the Voting Age Population (VAP) as a base."