

Negative Advertising and Political Competition: Online
Appendix

Amit Gandhi
University of Wisconsin-Madison

Daniela Iorio
UAB and Barcelona GSE

Carly Urban
University of Wisconsin-Madison

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Table 1.A: Election-level Effects Using Regression Framework, Ballot N (Negative1)

	Dependent Variable = Percent of Ads that EVER Attacked							
Year	2004	2004	2004	2004	2008	2008	2008	2008
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Ballot N)	-0.245*** (0.0359)	-0.184*** (0.0398)			-0.107* (0.0579)	-0.0856 (0.0633)		
Duopoly			0.208*** (0.0506)	0.110** (0.0518)			0.0838 (0.0584)	0.0403 (0.0662)
Incumbent in Election		0.211*** (0.0544)		0.219*** (0.0602)		0.0667 (0.0712)		0.0781 (0.0729)
NoTermLimits		-0.105*** (0.0356)		-0.143*** (0.0373)		0.0149 (0.0651)		-0.00779 (0.0629)
HHI Opposing Party		-0.00460 (0.0710)		0.0980 (0.0716)		0.0943 (0.0841)		0.104 (0.0888)
Observations	104	104	104	104	118	118	118	118

Standard errors in parentheses. OLS Regressions weighted by total ad volume in election.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.A: Election-level Effects Using Regression Framework, Ballot N (Negative4)

	Dependent Variable = Percent of Ads that ONLY Attacked							
Year	2004	2004	2004	2004	2008	2008	2008	2008
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Ballot N)	-0.134*** (0.0223)	-0.102*** (0.0246)			-0.0982** (0.0430)	-0.112** (0.0445)		
Duopoly			0.119*** (0.0306)	0.0738** (0.0313)			0.100** (0.0431)	0.0976** (0.0466)
Incumbent in Election		0.119*** (0.0336)		0.119*** (0.0364)		0.115** (0.0501)		0.114** (0.0514)
No Term Limits		-0.0781*** (0.0220)		-0.0996*** (0.0226)		0.0765* (0.0458)		0.0498 (0.0443)
HHI Opposing Party		-0.0153 (0.0439)		0.0365 (0.0433)		-0.0858 (0.0591)		-0.0975 (0.0626)
Observations	104	104	104	104	118	118	118	118

Standard errors in parentheses. OLS Regressions weighted by total ad volume in election.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3.A: Ad Level Effects Using Regression Framework, Ballot N (Negative1)

Year	Dependent Variable: Negative1 = 1 if the ad EVER attacked an opponent							
	2004 (1)	2004 (2)	2004 (3)	2004 (4)	2008 (5)	2008 (6)	2008 (7)	2008 (8)
log(Ballot N)	-0.245*** (0.0728)	-0.189*** (0.0404)			-0.108 (0.0933)	-0.148* (0.0757)		
Duopoly			0.208 (0.128)	0.116 (0.0697)			0.0843 (0.0898)	0.111 (0.0851)
Incumbent in Election		0.171** (0.0721)		0.174** (0.0821)		0.0927 (0.0829)		0.0950 (0.0861)
HHI Opposing Party		0.0175 (0.0949)		0.117 (0.103)		0.180 (0.111)		0.167 (0.113)
No Term Limits		-0.0514 (0.0609)		-0.0903 (0.0760)		0.287*** (0.0974)		0.248*** (0.0907)
Days Until Election		-0.407*** (0.0638)		-0.404*** (0.0646)		-0.358*** (0.0641)		-0.356*** (0.0642)
Total Ad Volume		0.0546*** (0.0202)		0.0511** (0.0232)		0.165*** (0.0275)		0.159*** (0.0266)
Republican		0.0463 (0.0393)		0.0459 (0.0488)		0.0902 (0.0699)		0.0857 (0.0715)
Political Experience		0.0533 (0.0520)		0.0692 (0.0541)		0.0364 (0.0613)		0.0603 (0.0608)
Observations	242461	242363	242461	242363	188957	169362	188957	169362

Notes: Robust standard errors clustered at the election level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Ballot N and duopoly measure created by only including all candidates on the ballot.

Political Experience equals one if the candidate who ran the advertisement has held an office of state Congress or greater.

Days until election is continuous on (0,1), it equals 1 at the farthest day from the election and 0 at election day.

Total Ad Volume is equal to the logged number of total ads run in the election.

Table 4.A: Ad Level Effects Using Regression Framework, Ballot N (Negative1)

	Dependent Variable: Negative1 = 1 if the ad ONLY attacked an opponent							
Year	2004	2004	2004	2004	2008	2008	2008	2008
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Ballot N)	-0.134*** (0.0490)	-0.109*** (0.0320)			-0.0981 (0.0921)	-0.163** (0.0679)		
Duopoly			0.119 (0.0798)	0.0858** (0.0432)			0.1000 (0.101)	0.164** (0.0773)
Incumbent in Election	0.0831 (0.0624)			0.0771 (0.0662)		0.145* (0.0775)		0.134* (0.0726)
HHI Opposing Party	0.0179 (0.0620)			0.0698 (0.0606)		-0.0196 (0.0733)		-0.0479 (0.0772)
No Term Limits	-0.0351 (0.0391)			-0.0568 (0.0445)		0.254*** (0.0772)		0.217*** (0.0653)
Days Until Election	-0.151*** (0.0361)			-0.150*** (0.0366)		-0.0916* (0.0463)		-0.0894* (0.0464)
Total Ad Volume	0.0411*** (0.0138)			0.0397** (0.0151)		0.113*** (0.0306)		0.112*** (0.0290)
Republican	0.00947 (0.0282)			0.00659 (0.0312)		0.0308 (0.0457)		0.0312 (0.0451)
Political Experience	0.0386 (0.0282)			0.0480* (0.0284)		0.00576 (0.0480)		0.0279 (0.0467)
Observations	242461	242363	242461	242363	188957	169362	188957	169362

Notes: Robust standard errors clustered at the election level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Ballot N and duopoly measure created by only including all candidates on the ballot.

Political Experience equals one if the candidate who ran the advertisement has held an office of state Congress or greater.

Days until election is continuous on (0,1), it equals 1 at the farthest day from the election and 0 at election day.

Total Ad Volume is equal to the logged number of total ads run in the election.

Table 5.A: Candidate-level Effects Using Regression Framework, Ballot N (Negative1)

Dependent Variable = Percent of Ads EVER Attacking by each Advertising Candidate	2004		2004		2008		2008		2008	
	Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
log(Ballot N)	-0.245*** (0.0308)	-0.173*** (0.0356)				-0.109** (0.0470)	-0.0462 (0.0589)			
Duopoly			0.208*** (0.0419)	0.101** (0.0453)				0.0868* (0.0473)	0.0206 (0.0605)	
Incumbent in Election		0.195*** (0.0504)		0.197*** (0.0545)			0.0676 (0.0651)		0.0741 (0.0665)	
NoTermLimits		-0.0967*** (0.0324)		-0.130*** (0.0331)			0.0392 (0.0625)		0.0304 (0.0617)	
HHI Opposing Party		-0.0262 (0.0664)		0.0693 (0.0653)			0.132 (0.0813)		0.134 (0.0838)	
Republican		0.0335 (0.0325)		0.0348 (0.0344)			0.0219 (0.0483)		0.0199 (0.0484)	
Political Experience		0.0608* (0.0317)		0.0763** (0.0330)			0.0869 (0.0588)		0.0954* (0.0576)	
Observations	211	208	211	208	214	214	183	214	183	183

Standard errors in parentheses. OLS Regressions weighted by total ad volume of each candidate.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6.A: Candidate-level Effects Using Regression Framework, Ballot N (Negative4)

Dependent Variable = Percent of Ads ONLY Attacking by each Advertising Candidate	2004		2004		2004		2008		2008		2008	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)				
log(Ballot N)	-0.134*** (0.0181)	-0.0981*** (0.0207)			-0.0989*** (0.0335)	-0.0930** (0.0404)						
Duopoly			0.119*** (0.0243)	0.0744*** (0.0260)			0.101*** (0.0335)	0.0985** (0.0414)				
Incumbent in Election		0.105*** (0.0293)		0.0996*** (0.0314)		0.131*** (0.0446)			0.124*** (0.0455)			
No Term Limits		-0.0709*** (0.0189)		-0.0895*** (0.0190)		0.0822* (0.0428)			0.0621 (0.0422)			
HHI Opposing Party		-0.0149 (0.0386)		0.0341 (0.0376)		-0.0519 (0.0557)			-0.0696 (0.0573)			
Republican		-0.000190 (0.0189)		-0.00202 (0.0198)		-0.0153 (0.0331)			-0.0144 (0.0331)			
Political Experience		0.0351* (0.0184)		0.0440** (0.0190)		0.0368 (0.0403)			0.0486 (0.0394)			
Observations	211	208	211	208	214	183	214	183	214	183		

Standard errors in parentheses. OLS Regressions weighted by total ad volume of each candidate.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7.A: Candidate-level Effects Using Regression Framework Negative1

Dependent Variable = Percent of Ads EVER Attacking by each Advertising Candidate	2004		2004		2008		2008		2008	
	Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
log(Effective N)	-0.421*** (0.0477)	-0.313*** (0.0758)				-0.222*** (0.0596)	-0.214*** (0.0791)			
Duopoly			0.238*** (0.0319)	0.146*** (0.0548)				0.116*** (0.0411)	0.114** (0.0540)	
Incumbent in Election		0.200*** (0.0639)		0.210*** (0.0721)			-0.0892 (0.0658)		-0.0739 (0.0657)	
No Term Limits		-0.0859 (0.0606)		-0.118* (0.0616)			0.0703 (0.0636)		0.0699 (0.0673)	
HHI Opposing Party		0.0566 (0.0690)		0.0875 (0.0702)			0.184** (0.0797)		0.205** (0.0794)	
Republican		0.102*** (0.0391)		0.0986** (0.0404)			0.0512 (0.0488)		0.0340 (0.0481)	
Political Experience		0.0259 (0.0381)		0.0563 (0.0379)			0.0495 (0.0540)		0.0682 (0.0548)	
Observations	210	177	210	177	211	180	211	180	211	180

Standard errors in parentheses. OLS Regressions weighted by total ad volume of each candidate.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8.A: Candidate-level Effects Using Regression Framework Negative4

Dependent Variable = Percent of Ads ONLY Attacking by each Advertising Candidate	2004		2004		2008		2008		2008	
	Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
log(Effective N)	-0.235*** (0.0280)	-0.126*** (0.0405)		0.134*** (0.0186)	0.0334 (0.0292)	-0.0674* (0.0370)	-0.102** (0.0495)		0.0243 (0.0253)	0.0534 (0.0337)
Duopoly										
Incumbent in Election		0.181*** (0.0341)			0.204*** (0.0384)		-0.0424 (0.0412)			-0.0350 (0.0410)
No Term Limits		-0.0625* (0.0324)			-0.0764** (0.0328)		0.0798** (0.0398)			0.0793* (0.0420)
HHI Opposing Party		0.0217 (0.0369)			0.0387 (0.0374)		0.0453 (0.0499)			0.0553 (0.0496)
Republican		0.0436** (0.0209)			0.0392* (0.0215)		0.000414 (0.0306)			-0.00785 (0.0300)
Political Experience		0.0129 (0.0203)			0.0273 (0.0202)		0.0217 (0.0339)			0.0305 (0.0342)
Observations	210	177	210	177	211	180	211	180	211	180

Standard errors in parentheses. OLS Regressions weighted by total ad volume of each candidate.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9.A: Ad Level Effects Using Regression Framework, Controlling for Demographics

	Negative1								Negative4			
	2004 (1)	2004 (2)	2008 (3)	2008 (4)	2004 (5)	2004 (6)	2008 (7)	2008 (8)				
log(Effective N)	-0.312*** (0.0674)		-0.263** (0.101)		-0.160*** (0.0503)		-0.172** (0.0685)					
Duopoly		0.171*** (0.0525)		0.178** (0.0781)		0.0838** (0.0354)		0.134** (0.0518)				
Incumbent in Election	0.129 (0.0813)	0.121 (0.0856)	0.00650 (0.102)	0.0196 (0.104)	0.0612 (0.0684)	0.0591 (0.0715)	0.0423 (0.0705)	0.0457 (0.0700)				
HHI Opposing Party	0.0608 (0.0956)	0.0869 (0.0960)	0.179 (0.116)	0.193* (0.110)	0.0544 (0.0619)	0.0691 (0.0601)	0.00953 (0.0675)	0.0133 (0.0654)				
No Term Limits	-0.0132 (0.0612)	-0.0281 (0.0700)	0.244*** (0.0807)	0.269*** (0.0863)	-0.0149 (0.0407)	-0.0240 (0.0427)	0.149*** (0.0493)	0.175*** (0.0541)				
Days Until Election	-0.404*** (0.0622)	-0.400*** (0.0627)	-0.383*** (0.0631)	-0.381*** (0.0631)	-0.148*** (0.0352)	-0.146*** (0.0355)	-0.122*** (0.0449)	-0.121*** (0.0447)				
Total Ad Volume	0.0545*** (0.0193)	0.0557*** (0.0207)	0.123*** (0.0216)	0.126*** (0.0214)	0.0392*** (0.0131)	0.0397*** (0.0140)	0.0514*** (0.0175)	0.0530*** (0.0162)				
Republican	0.0726* (0.0390)	0.0815* (0.0416)	0.121 (0.0743)	0.107 (0.0742)	0.0228 (0.0306)	0.0269 (0.0323)	0.0551 (0.0413)	0.0488 (0.0404)				
Male	-0.000830 (0.0434)	-0.0133 (0.0467)	0.0643 (0.0892)	0.0704 (0.0877)	0.0297 (0.0374)	0.0239 (0.0371)	0.0535* (0.0302)	0.0594** (0.0291)				
White	-0.0375 (0.112)	-0.0632 (0.122)	-0.0470 (0.139)	-0.0294 (0.142)	-0.0582 (0.105)	-0.0712 (0.110)	0.0723 (0.0497)	0.0797 (0.0508)				
College	-0.159 (0.187)	-0.189 (0.180)	0.244*** (0.0561)	0.281*** (0.0634)	0.0218 (0.0241)	0.00657 (0.0221)	0.128*** (0.0404)	0.162*** (0.0435)				
Political Experience	0.0639 (0.0502)	0.0812 (0.0513)	0.0418 (0.0585)	0.0670 (0.0581)	0.0504* (0.0263)	0.0590** (0.0263)	-0.00299 (0.0419)	0.0150 (0.0395)				
Observations	241689	241689	155243	155243	241689	241689	155243	155243				

Notes: Robust standard errors clustered at the election level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Effective N and duopoly measure created by only including “viable candidates” who received more than 5% of final vote share. Political Experience equals one if the candidate who ran the advertisement has held an office of state Congress or greater. Days until election is continuous on (0,1), it equals 1 at the farthest day from the election and 0 at election day.

Table 10.A: Ad Level Effects Using Regression Framework, Controlling for Own-Candidate Incumbency and Candidate Ad Volume

	Negative1								Negative4							
	2004 (1)	2004 (2)	2008 (3)	2008 (4)	2004 (5)	2004 (6)	2008 (7)	2008 (8)	2004 (5)	2004 (6)	2008 (7)	2008 (8)	2004 (5)	2004 (6)	2008 (7)	2008 (8)
log(Effective N)	-0.327*** (0.0896)		-0.228** (0.0899)		-0.151** (0.0594)											
Duopoly		0.186*** (0.0677)		0.149* (0.0759)						0.0792* (0.0423)						0.108** (0.0420)
Incumbent	0.0430 (0.0628)	0.0413 (0.0695)	-0.140 (0.113)	-0.135 (0.117)	0.0544* (0.0306)	0.00620 (0.0906)										0.00105 (0.0895)
HHI Opposing Party	0.0995 (0.119)	0.122 (0.116)	0.121 (0.109)	0.134 (0.105)	0.0630 (0.0751)	0.0767 (0.0737)	-0.0222 (0.0642)									-0.0211 (0.0627)
NoTermLimits	-0.0148 (0.0696)	-0.0283 (0.0776)	0.232*** (0.0665)	0.246*** (0.0693)	-0.0244 (0.0447)	0.163*** (0.0490)										0.180*** (0.0490)
Days Until Election	-0.414*** (0.0622)	-0.412*** (0.0626)	-0.408*** (0.0595)	-0.407*** (0.0597)	-0.153*** (0.0356)	-0.152*** (0.0360)	-0.129*** (0.0438)									-0.128*** (0.0437)
Total Cand Volume	0.0577*** (0.0218)	0.0639*** (0.0238)	0.121*** (0.0207)	0.124*** (0.0206)	0.0369** (0.0143)	0.0397** (0.0153)	0.0632*** (0.0207)									0.0630*** (0.0189)
Republican	0.0702* (0.0397)	0.0834* (0.0455)	0.126* (0.0695)	0.116 (0.0707)	0.0255 (0.0298)	0.0310 (0.0332)	0.0572 (0.0421)									0.0533 (0.0412)
Male	-0.0305 (0.0490)	-0.0519 (0.0493)	0.0347 (0.0929)	0.0358 (0.0918)	0.00615 (0.0388)	-0.00322 (0.0372)	0.0399 (0.0289)									
White	-0.0908 (0.0990)	-0.126 (0.106)	-0.0949 (0.117)	-0.0774 (0.118)	-0.0963 (0.0981)	-0.113 (0.101)	0.0417 (0.0433)									
College	-0.152 (0.171)	-0.191 (0.159)	0.285*** (0.0711)	0.320*** (0.0638)	0.0216 (0.0267)	0.00493 (0.0249)	0.166*** (0.0388)									
Observations	241689	241689	155243	155243	241689	241689	155243	155243	241689	241689	155243	155243	241689	241689	155243	155243

Notes: Robust standard errors clustered at the election level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.
 Effective N and duopoly measure created by only including “viable candidates” who received more than 5% of final vote share.
 Political Experience equals one if the candidate who ran the advertisement has held an office of state Congress or greater.
 Days until election is continuous on (0,1), it equals 1 at the farthest day from the election and 0 at election day.
 Total Candid Volume is equal to the logged number of total ads run by the advertiser in the election.