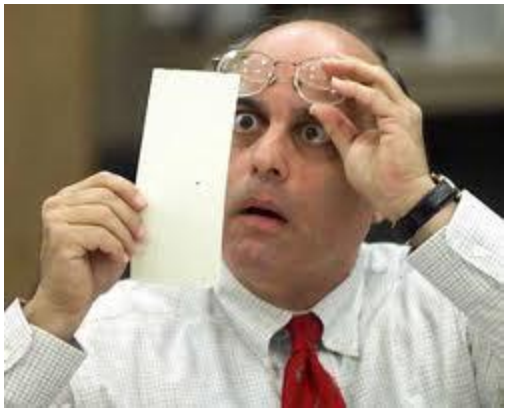
Do Voting Machine Cause Lost Votes?

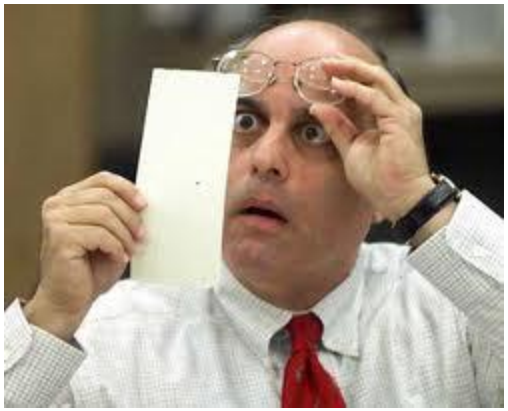
17.871

Spring 2014

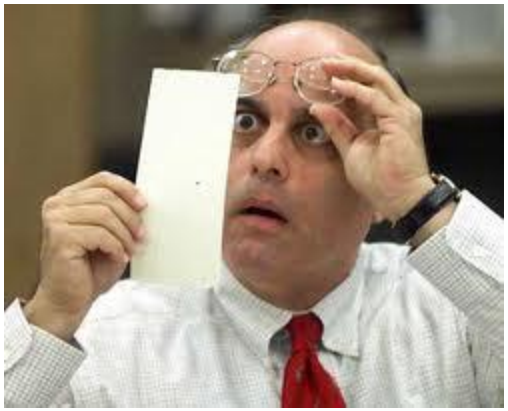
2000 Presidential Election



2000 Presidential Election



2000 Presidential Election



How do we know if some voting machines are more prone to “lost votes” than others?

If some are prone to more lost votes than others, how big of a problem is it?

How do we know if some voting machines are more prone to losing votes than others?

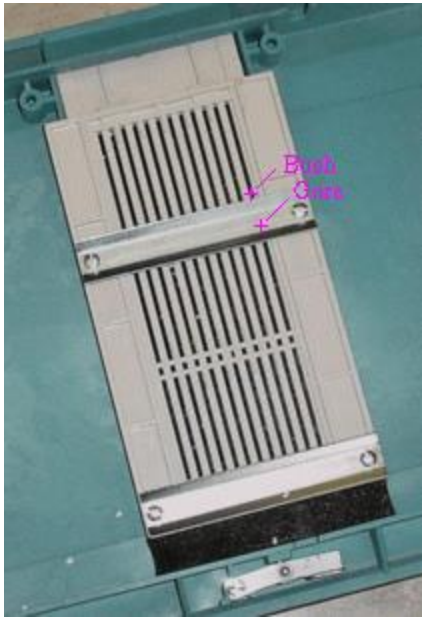
How do we know if some voting machines are more prone to losing votes than others?

Law

How do we know if some voting machines are more prone to losing votes than others?

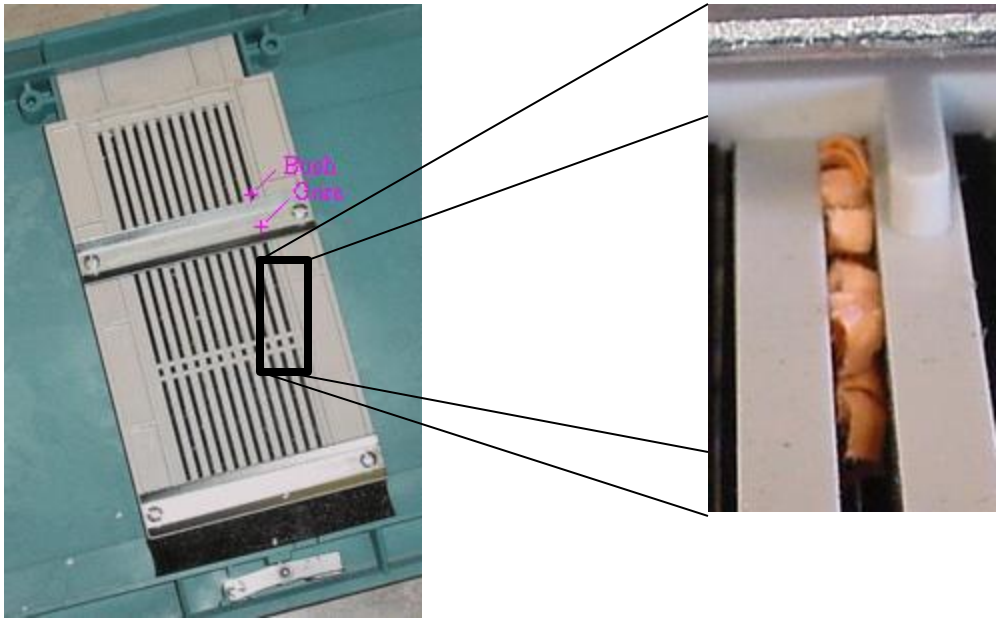
Engineering

How do we know if some voting machines are more prone to losing votes than others?



Engineering

How do we know if some voting machines are more prone to losing votes than others?



Engineering

How do we know if some voting machines are more prone to losing votes than others?

Tech.	Under-vote pct.	Over-vote pct.	Lost vote pct.	Number of counties
Datavote (punch)	0.83%	6.10%	6.93%	9
Hand-count	0.65%	6.09%	6.74%	1
Lever	0.29%	0.09%	0.38%	1
Optical scan	0.31%	1.05%	1.36%	41
Votomatic (punch)	1.52%	2.42%	3.94%	15
Statewide	1.03%	1.91%	2.94%	67

Statistics, correlational

Data sources:
Election returns: Florida Division of Elections
Over- under-vote counts: NORC recount project

How do we know if some voting machines are more prone to losing votes than others?

	Machine in 2000				
Machine in 1996:	Votomatic	Lever	Opscan	DRE	Total
Votomatic	-0.52% (171)		-1.96% (179)		-0.98% (365)
Lever		-0.08% (114)	-0.24% (65)	0.66% (111)	0.03% (294)
Opscan			-1.42% (74)		-1.33% (75)
DRE				-1.92% (35)	
Total	-0.92% (215)	-0.08% (119)	-1.29% (616)	-0.94% (165)	-0.81% (1,402)

(Quasi-) Experimental

Note: the table isn't complete, although the totals in the columns and rows reflect the entire table

Some points relevant to 17.871

- Political science can provide a service to society by framing questions causally, and reducing complicated matters to clear observables.
- Addressing important questions of public policy requires creative combinations of insight, data, and method.

Relevant to the Syllabus (to come)

- Statistics

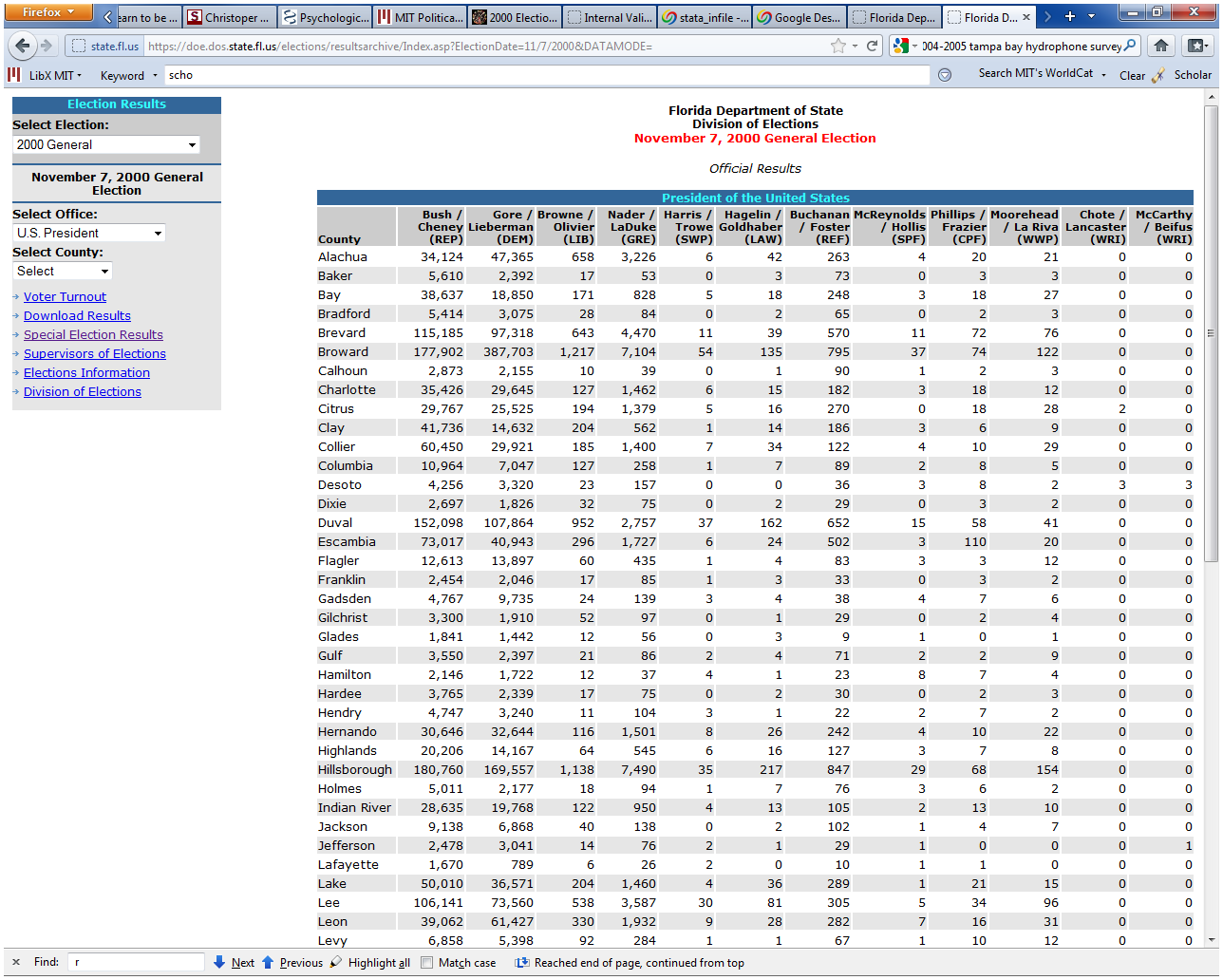
TABLE 3

Residual Vote Multivariate Analysis, Presidential, Gubernatorial, and Senatorial Elections, 1988–2000

	Fixed-effects estimates		No fixed effects, explicit controls	
	President	Gov. & senator	President	Gov. & senator
Equipment effects:				
Punch card	.0082	−.0030	.0077	−.021
	(.0015)	(.0018)	(.0005)	(.001)
Lever machine	Excluded equip. category	Excluded equip. category	Excluded equip. category	Excluded equip. category
Paper	−.014	−.014	−.0012	−.022
	(.002)	(.003)	(.0014)	(.002)
Optical scan	−.0045	−.014	.00071	−.032
	(.0014)	(.002)	(.00070)	(.001)
Electronic (DRE)	.0022	−.012	.0080	−.0097
	(.0015)	(.002)	(.0010)	(.0013)
Shift in tech.	.0010	−.0004	.00005	−.0021
	(.0007)	(.0010)	(.00067)	(.0013)
Log (turnout)	.0095	.031	−.0004	.0005
	(.0026)	(.003)	(.0001)	(.0002)
Gov. or Sen. on ballot	−.0011	−.004	−.003	.005
	(.0007)	(.001)	(.001)	(.001)
Senator	—	.008	—	.009
		(.001)		(.001)
Percent Over 65	—	—	.047	.104
			(.008)	(.009)
Percent 18–24	—	—	−.012	.027
			(.009)	(.010)
Percent White	—	—	−.030	−.045
			(.002)	(.003)
Percent Hispanic	—	—	.011	.005
			(.004)	(.005)
Median Income (10,000s)	—	—	−.002	−.001
			(.001)	(.001)
Constant	−.11	−.29	.025	.027
	(.03)	(.03)	(.002)	(.016)
N	8,982	11,625	8,982	11,625
R^2	.79	.74	.14	.43
Fixed effect: (not shown)	Year × State County	Year × State County	Year × State	Year × State
Number of categories	3,346	2,245	—	—
F test	F(3345,5572) = 2.971 ($p < .0001$)	F(2244,9318) = 3.705 ($p < .0001$)	—	—

Relevant to the Syllabus (to come)

- Statistics
- Mechanics



Election Results

Select Election: 2000 General

November 7, 2000 General Election

Select Office: U.S. President

Select County: Select

- Voter Turnout
- Download Results
- Special Election Results
- Supervisors of Elections
- Elections Information
- Division of Elections

Florida Department of State
Division of Elections
November 7, 2000 General Election

Official Results

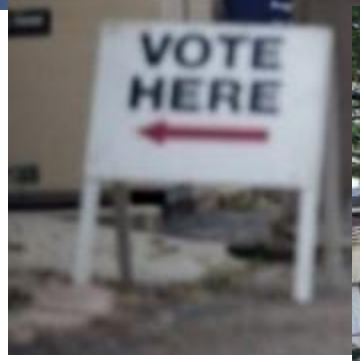
President of the United States

County	Bush / Cheney (REP)	Gore / Lieberman (DEM)	Browne / Olivier (LIB)	Nader / LaDuke (GRE)	Harris / Trowe (SWP)	Hagelin / Goldhaber (LAW)	Buchanan / Foster (REF)	McReynolds / Hollis (SPF)	Phillips / Frazier (CPF)	Moorehead / La Riva (WWP)	Chote / Lancaster (WRI)	McCarthy / Beifus (WRI)
Alachua	34,124	47,365	658	3,226	6	42	263	4	20	21	0	0
Baker	5,610	2,392	17	53	0	3	73	0	3	3	0	0
Bay	38,637	18,850	171	828	5	18	248	3	18	27	0	0
Bradford	5,414	3,075	28	84	0	2	65	0	2	3	0	0
Brevard	115,185	97,318	643	4,470	11	39	570	11	72	76	0	0
Broward	177,902	387,703	1,217	7,104	54	135	795	37	74	122	0	0
Calhoun	2,873	2,155	10	39	0	1	90	1	2	3	0	0
Charlotte	35,426	29,645	127	1,462	6	15	182	3	18	12	0	0
Citrus	29,767	25,525	194	1,379	5	16	270	0	18	28	2	0
Clay	41,736	14,632	204	562	1	14	186	3	6	9	0	0
Collier	60,450	29,921	185	1,400	7	34	122	4	10	29	0	0
Columbia	10,964	7,047	127	258	1	7	89	2	8	5	0	0
Desoto	4,256	3,320	23	157	0	0	36	3	8	2	3	3
Dixie	2,697	1,826	32	75	0	2	29	0	3	2	0	0
Duval	152,098	107,864	952	2,757	37	162	652	15	58	41	0	0
Escambia	73,017	40,943	296	1,727	6	24	502	3	110	20	0	0
Flagler	12,613	13,897	60	435	1	4	83	3	3	12	0	0
Franklin	2,454	2,046	17	85	1	3	33	0	3	2	0	0
Gadsden	4,767	9,735	24	139	3	4	38	4	7	6	0	0
Gilchrist	3,300	1,910	52	97	0	1	29	0	2	4	0	0
Glades	1,841	1,442	12	56	0	3	9	1	0	1	0	0
Gulf	3,550	2,397	21	86	2	4	71	2	2	9	0	0
Hamilton	2,146	1,722	12	37	4	1	23	8	7	4	0	0
Hardee	3,765	2,339	17	75	0	2	30	0	2	3	0	0
Hendry	4,747	3,240	11	104	3	1	22	2	7	2	0	0
Hernando	30,646	32,644	116	1,501	8	26	242	4	10	22	0	0
Highlands	20,206	14,167	64	545	6	16	127	3	7	8	0	0
Hillsborough	180,760	169,557	1,138	7,490	35	217	847	29	68	154	0	0
Holmes	5,011	2,177	18	94	1	7	76	3	6	2	0	0
Indian River	28,635	19,768	122	950	4	13	105	2	13	10	0	0
Jackson	9,138	6,868	40	138	0	2	102	1	4	7	0	0
Jefferson	2,478	3,041	14	76	2	1	29	1	0	0	0	1
Lafayette	1,670	789	6	26	2	0	10	1	1	0	0	0
Lake	50,010	36,571	204	1,460	4	36	289	1	21	15	0	0
Lee	106,141	73,560	538	3,587	30	81	305	5	34	96	0	0
Leon	39,062	61,427	330	1,932	9	28	282	7	16	31	0	0
Levy	6,858	5,398	92	284	1	1	67	1	10	12	0	0

Relevant to the Syllabus (to come)

- Statistics
- Mechanics
- Project

Postlude



Postlude

Postlude

Postlude

"All the News That's Fit to Print"

The New York Times

Late Edition

VOL. CLXII . . . No. 56,038 NEW YORK, TUESDAY, FEBRUARY 5, 2013 $2.50

A Farewell to Knox, Who Led Before Them

Mike on Michael R. Bloomberg, Rudolph W. Giuliani and David N. Dinkins at Mayor Edward I. Koch's funeral Monday. Page A16.

Waiting Times At Ballot Boxes Draw Scrutiny

Democrats Seeking to Make Voting Easier

By JEREMY W. PETERS

U.S. ACCUSES S.&P. OF FRAUD IN SUIT ON LOAN BUNDLES

HIGH RATINGS FAULTED

First Big Federal Action Against Industry on Sour Mortgages

By MARY WILLIAMS WALSH and ANDREW ROSS SORKIN

Hand of U.S. Is Seen in Halting a General's Rise

Action in Mexico Is a Sign of Mistrust Amid Close Ties

In 2 Trailers, The Neighbors Nobody Wants

By MICHAEL SCHWIRTZ

Backbone of a King

For Raven, a Glorious Return (To Hometown and End Zone)

By JERE LONGMAN

Afghans Find a Refuge Hard and Cold

Postlude

"All the News That's Fit to Print"

The New York Times

Late Edition

Waiting Times At Ballot Boxes Draw Scrutiny

Democrats Seeking to Make Voting Easier

A Farewell to Kock, Who Led Before Them

Hand of U.S. Is Seen in Halting a General's Rise

Action in Mexico Is a Sign of Mistrust Amid Close Ties

In 2 Trailers, The Neighbors Nobody Wants

For Raven, a Glorious Return (To Hometown and End Zone)

Backbone of a King

Afghans Find a Refuge Hard and Cold

Follow your dream. Watch your back.

SMASH

TONIGHT 9/8c

Postlude

A Massachusetts Institute of Technology analysis determined that blacks and Hispanics waited nearly twice as long in line to vote on average than whites. Florida had the nation's longest lines, at 45 minutes, followed by the District of Columbia, Maryland, South Carolina and Virginia, according to Charles Stewart III, the political science professor who conducted the analysis.

http://www.nytimes.com/interactive/2013/02/05/us/politics/how-long-it-took-groups-to-vote.html

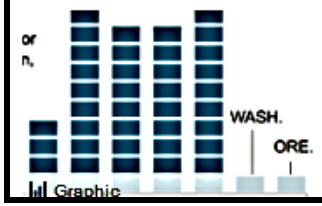
Postlude II

http://www.nytimes.com/interactive/2013/02/05/us/politics/how-states-performed-in-the-2008-election.html?ref=politics

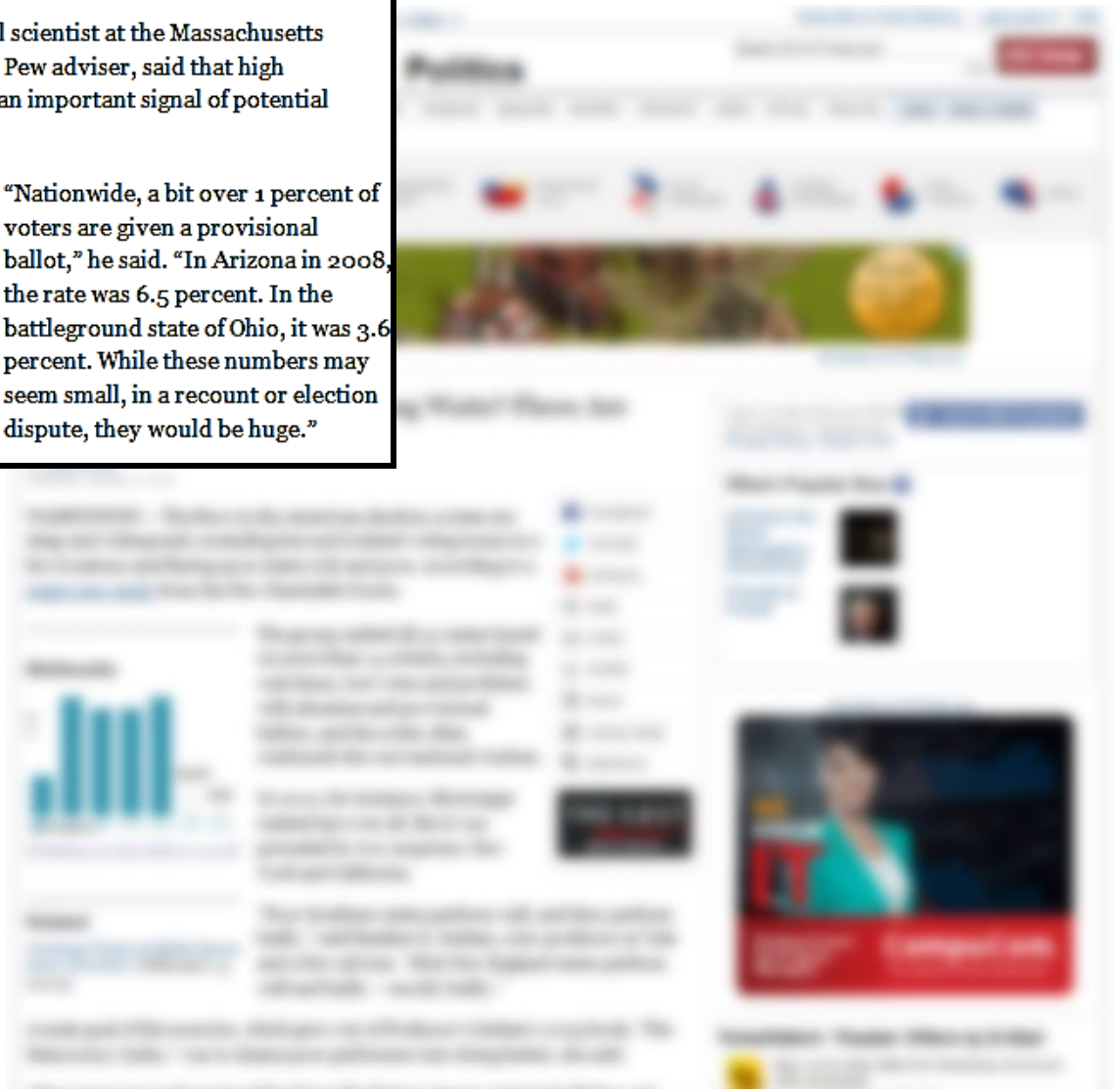
Postlude II

Charles Stewart III, a political scientist at the Massachusetts Institute of Technology and a Pew adviser, said that high provisional ballot rates were an important signal of potential trouble.

Multimedia



"Nationwide, a bit over 1 percent of voters are given a provisional ballot," he said. "In Arizona in 2008, the rate was 6.5 percent. In the battleground state of Ohio, it was 3.6 percent. While these numbers may seem small, in a recount or election dispute, they would be huge."



http://www.nytimes.com/interactive/2013/02/05/us/politics/how-states-performed-in-the-2008-election.html?ref=politics

The American Voting Experience:

Report and Recommendations of the Presidential Commission on Election Administration

January 2014

hour.[19] In some jurisdictions, the problem has recurred for several presidential elections,[20] while in others, a particular confluence of factors led to unprecedented lines in

sible ensures that their problems will not result in congestion at the check-in station where research suggests most election lines develop.[103]

voting process, then lines can form. Research shows that voters in a small number of states (or localities within states) persistently endure long lines.[111] In these states, a top-to-bottom review of resource allocation and standard operating procedures may be in order. However, for the most part, the problem of long lines usually only afflicts a limited share of the polling places within a county.[112] This suggests that more often, it is the

states must plan for increased turnout. Although voters appear to have a greater tolerance for waiting in line during the early voting period (since they chose to come at that particular time), wait times, on average, were higher in 2012 during early voting than they were on Election Day.[121] Therefore, election officials not only must plan for

hour.[19] In some jurisdictions, the problem has recurred for several presidential elections,[20] while in others, a particular confluence of factors led to unprecedented lines in

sible ensures that their problems will not result in congestion at the check-in station where research suggests most election lines develop.[103]

voting process, then lines can form. Research shows that voters in a small number of states (or localities within states) persistently endure long lines.[111] In these states, a top-to-bottom review of resource allocation and standard operating procedures may be in order. However, for the most part, the problem of long lines usually only afflicts a limited share of the polling places within a county.[112] This suggests that more often, it is the

states must plan for increased turnout. Although voters appear to have a greater tolerance for waiting in line during the early voting period (since they chose to come at that particular time), wait times, on average, were higher in 2012 during early voting than they were on Election Day.[121] Therefore, election officials not only must plan for

20 See Donald Palmer, Secretary, Virginia State Board of Elections, PCEA Hearing Testimony, Philadelphia, PA, at 3 (Sept. 4, 2013); Susan Bucher, Palm Beach County Supervisor of Elections, PCEA Hearing Testimony, Miami, FL, at 14 (June 28, 2013); Charles Stewart III, Waiting to Vote in 2012, 28 Journal of Law & Politics 439 (2013).

103 See Charles Stewart III, Waiting to Vote in 2012, 28 Journal of Law & Politics 439, n.37 (2013) (noting that 68% of early voters and 60% of Election Day voters reported waiting in line primarily at the check-in phase, as opposed to waiting for an available machine).

111 Charles Stewart III, Waiting to Vote in 2012, 28 Journal of Law & Politics 439, 455 (2013).

112 Id. at 452-55.

121 Charles Stewart III, Waiting to Vote in 2012, 28 Journal of Law & Politics 439, 460 (2013).