Voting lines and early voting check-in times in Florida

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(Top Left) Columbus, OH during early voting in 2012 General

(Bottom Left) Miami, FL on Election Day in 2012

(Top Right) Scottsdale, AZ during primary on March 22, 2016

Most voters vote in person (75% in 2016).

The existence of voting lines is a major concern . . .

- 1. Opportunity costs essentially a time tax (Mukherjee 2009)
- 2. Downstream consequences (Pettigrew 2017)

What we want to know ...

- 1. Who bears the burden of this tax? Is it fairly distributed?
- 2. Does waiting in line discourage future participation?

▶ Need to identify those who waited in line AND link them to future behavior data availability.

- Election Day exit polls or post-election surveys (SPAE, CCES) (Stewart 2013 and 2015)
 - ▶ 10% of voters waited longer than 30 minutes in 2012
 - Limitation: self-reporting and social desirability bias
- Closing times of polling location and aggregate demographic data (Herron and Smith 2014; Pettigrew 2016)
 - ▶ Waiting in line reduced voter turnout by 1%
 - ▶ Limitation: aggregate data and ecological fallacy



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To overcome this challenge, we turn to a unique data source produced by Electronic Voter iDentification (EViD) machines during the early voting period for Florida's general election.

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- EViD machines allow pollworkers to check-in and verify registration statuses electronically, then synchronize across locations
- Used to thwart double voting

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EViD data:

- ► Time-stamps of individual votes during early voting period in general election in 2012 and 2016
- ▶ 6 counties in Florida: Alachua, Broward, Hillsborough, Miami-Dade, Orange, Palm Beach.
- ▶ 8 days, 78 locations, and 942,194 early voters in 2012
- ▶ 14 days, 104 locations, and 1,687,304 early voters in 2016

Polls start at 7am and end at 7pm. Anyone in line before 7pm can vote.

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Pros

- 1. We can leverage closing times to identify individuals who waited in line to vote during early voting in 2012.
- Individual voters can be linked to the Florida voter file, including
 - demographic characteristics (voter extract).
 - prior and subsequent voting behavior (voter history).

Cons

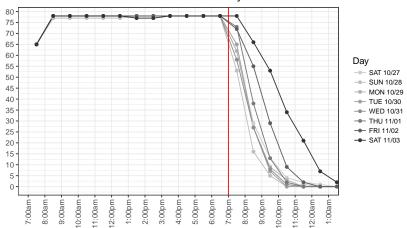
- 1. does not identify arrival time for those who voted
- does not identify individuals who left before voting

I will proceed as follows . . .

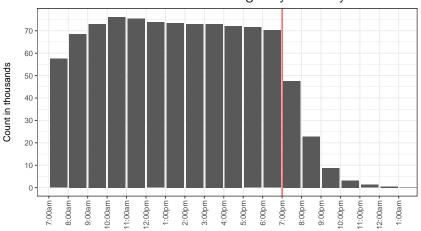
- 1. 2012 data
- 2. How things changed in 2016
- 3. Estimate the effect of waiting in line on future turnout

2012

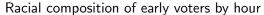
Number of locations where early votes were cast

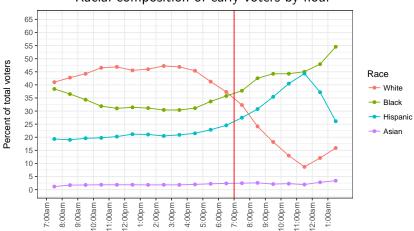






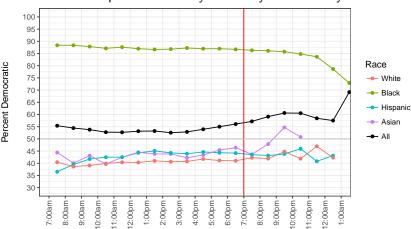
Lines tend to affect minority voters . . .





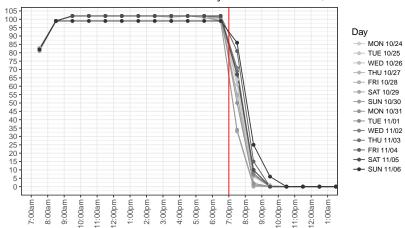
Lines tend to affect Democrats ...

Partisan composition of early voters by hour and by race

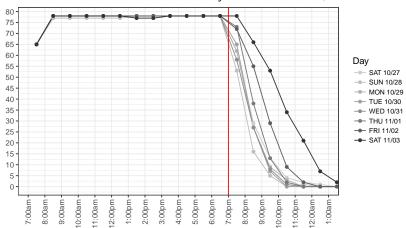


2016

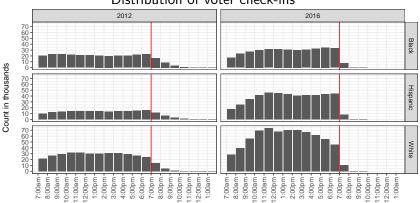
Number of locations where early votes were cast, 2016



Number of locations where early votes were cast, 2012



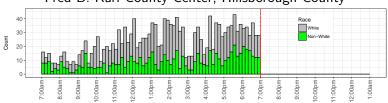
Distribution of voter check-ins



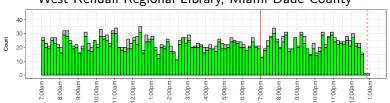
Background Data Results Conclusion

Does waiting in line to vote in the current election reduce one's propensity to vote in the future?

Fred B. Karl County Center, Hillsborough County

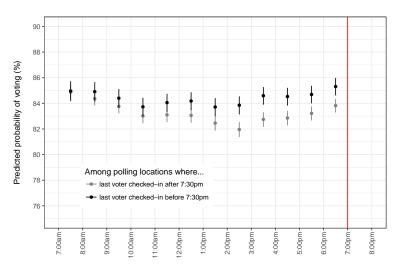


West Kendall Regional Library, Miami Dade County



$$\Pr\left(\text{Voted16}_{i} = yes\right) = \text{logit}^{-1}(\beta + \alpha_{Over} + \gamma_{Hour} + \sigma_{Over \times Hour} + \upsilon_{Gender} + \rho_{Race} + \tau_{AgeGroup} + \psi_{Party} + \pi_{Voted08}\right)$$

Probability of voting in 2016, given 2012 check-in time



Conclusion

- 1. Voting lines were in some location in Florida were severe in 2012. Line length improved in 2016.
- 2. Certain voters (specifically minorities and Democrats) are more likely to be affected by long wait times.
- 3. Holding all else constant, waiting in line results in about a 1% decrease in turnout.

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