

# The Impact of Primaries on Elections and Representation

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## Introduction

- Political scientists and reformers have debated whether the top-two open and associated primary systems lead to greater moderation among individual legislators and candidates.
- Current literature does not consider the impact of primary institutional reforms on the aggregate ideological portfolio of parties in legislatures.
- Research question: Does a top-two electoral system increase ideological heterogeneity among members of the legislature?
- Theory: Top-two open primary systems lead to increased ideological diversity in state legislative parties due to voters choosing more diverse candidates.
- Why? Lack of party cues encourage more diverse candidates to run and it causes voters to make choices based on nonpartisan factors.

## Design

- Goal: causally estimate the effect of the top-two primary implementation in California (2010) on party heterogeneity w/ Difference-in-differences (DID).
- Design Requirements: suitable state or pool of states to compare CA to that did not pass or implement a top-two open primary, did not have open primaries previously, and had similar trends in aggregate chamber ideology prior to when CA passed their top-two.
- In the absence of comparison units, we can create one that successfully resembles CA by constructing a counterfactual CA that did not adopt a top-two open primary system using the Synthetic Control Method and applying a DID estimator.

## Data

- Study | Treatment Period: 1997 - 2020 | 2010.
- Unit of analysis: State legislature party caucuses.
- Treated | Control Units: California | 38 states w/o open primary systems.
- Outcome Variables: Shor-McCarty Ideological heterogeneity scores for each chamber and party (Dem/lower upper; GOP/lower upper).
- Controls: Seven additional predictor variables.

## Method

- Construction of CA counterfactual possible by applying synthetic control method (SCM) (Abadie and Gardeazabal 2003; Abadie et al. 2010).
- SCM uses data to create comparable counterfactual by selecting other states (controls) whose characteristics, when combined, can closely resemble CA just before the passing of top-two primary system.
- The estimator, then, uses this pre-treatment data to impute treatment-free observations for the counterfactual unit to compare against CA.

$$\hat{\tau}_{1t} = Y_{1t} - \sum_{j=2}^{j+1} w_j^* Y_{jt} \quad (1)$$

Where  $Y_{1t}$  is defined as the observed outcome for a unit exposed with a treatment (CA) and  $\sum_{j=2}^{j+1} w_j^* Y_{jt}$  is the weighted sum of the counterfactual outcome for a unit that does not get exposed with a treatment (synthetic CA). The vector of weights ( $W^* = (w_2^*, \dots, w_{j+1}^*)$ ) are chosen to optimally minimize  $\|X_1 - X_0 W\|$ , which is the difference between the treated and untreated counterfactual control groups prior to treatment. This can be defined as:

$$\|X_1 - X_0 W\| = \left( \sum_{h=1}^k v_h (X_{h1} - w_2 X_{h2} - \dots - w_{j+1} X_{hj+1})^2 \right)^{1/2} \quad (2)$$

Where  $v_1, \dots, v_k$  is chosen using data-driven methods.

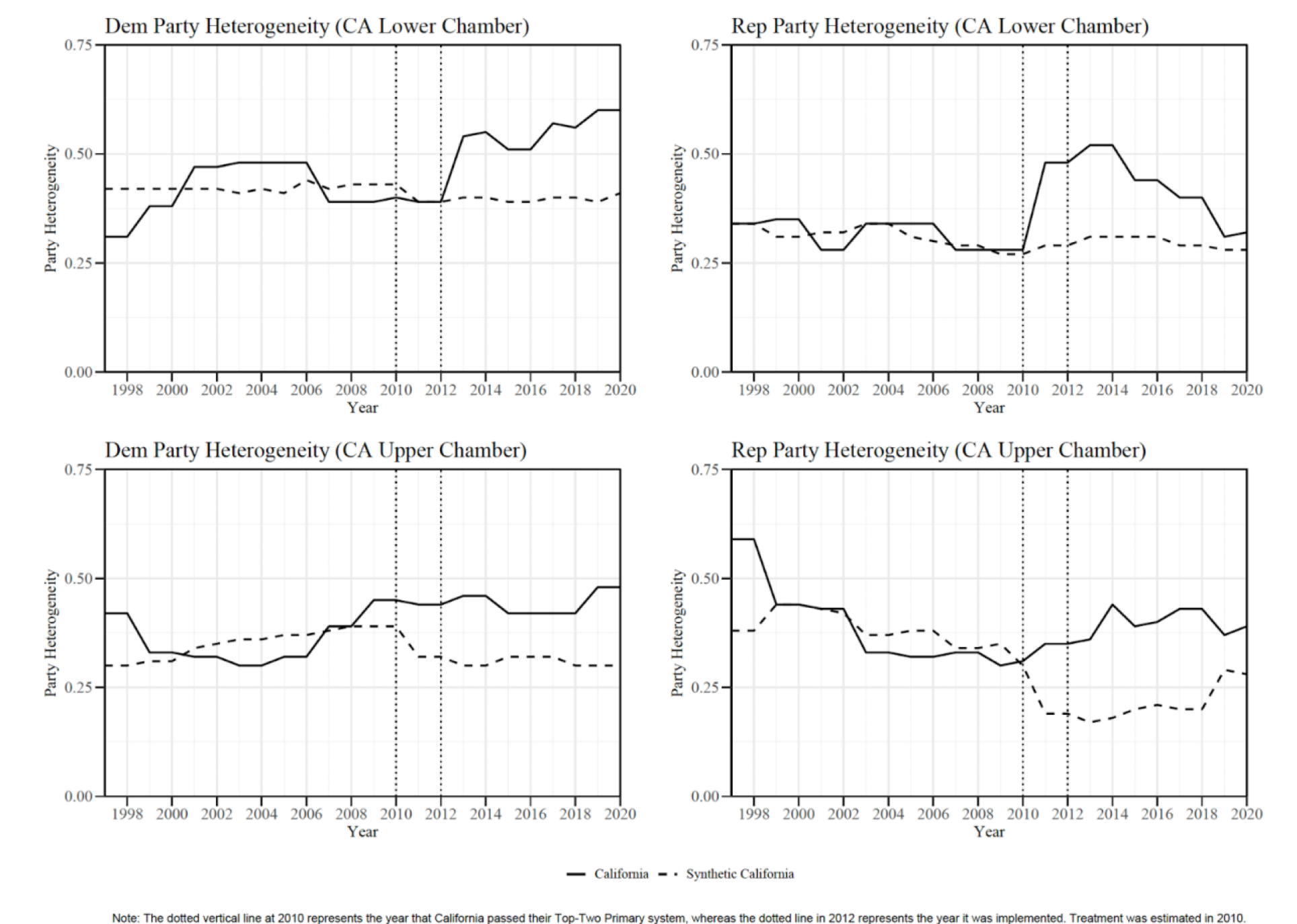
## References

Abadie, A., and Gardeazabal, J. (2003). "The Economic Costs of Conflict: A Case Study of the Basque Country." *American Economic Review* 93(1): 113–32.

Abadie, A., Diamond, A., and Hainmueller, J. (2010). "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105 (490):493–505.

## Results

- Figure shows CA ideological trends per chamber (solid line) and its synthetically generated counterfactual (dashed line).
- Persistent treatment effect of top-two primary in Democratic party.
- Treatment effect of top-two primary in Republican party with some decay over time.



## Conclusion

- Top-two primary causes increased ideological heterogeneity in Democratic party (both House and Senate)---with only significant effects in the House.
- Top-two primary caused short-term GOP party ideological heterogeneity in both chambers, with ideological diversity declining several years after top-two is implemented.
- Like with Democrats, effects were only significant in the Republican House.
- Electoral systems causally affect party caucuses.