Transparency, automated redistricting, and partisan strategic interaction in Mexico

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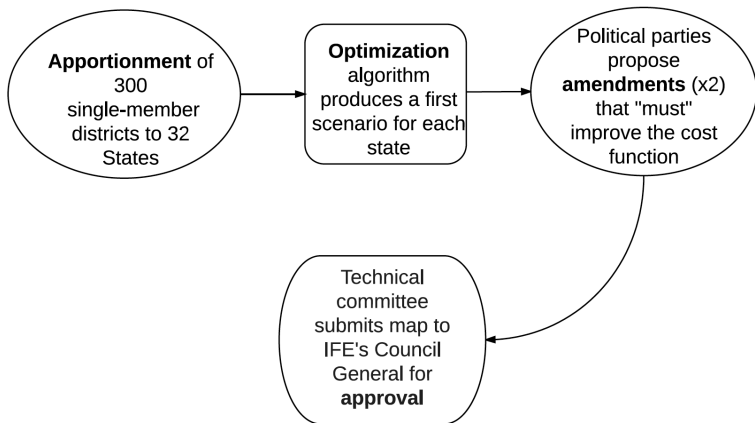
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Electoral Integrity Project, San Francisco
9/2/15

Redistricting by independent commission

1. Taking politicians out of map drawing ensures a fair result?
2. Can parties influence district boundaries? How?
3. How can the redistricting process be made more transparent?

Paper inspects the case of Mexico since 1997

Background on Mexico

- 32 states
- Democratic since 1997
- Lower chamber of Congress elected every 3 years
- Mixed system: 300 SMD + 200 PR seats
- Single-term limits removed in 2018
- Independent board (IFE) organizes elections and redistricting

Apportionment of 300 single-member districts to 32 States

Optimization algorithm produces a first scenario for each state

Political parties propose amendments (x2) that "must" improve the cost function

Technical committee submits map to IFE's Council General for approval

Hamilton method used:

- The quota (or price of a seat) is $Q = \frac{\text{nation's population}}{300}$
- First allocation is $\frac{\text{state's population}}{Q}$, rounded down
- Every state gets 2 seats min
- Unallocated seats, if any, awarded to states with largest fractional remainders

Most recent decennial census must be used

- ... but no obligation to redistrict as soon as available
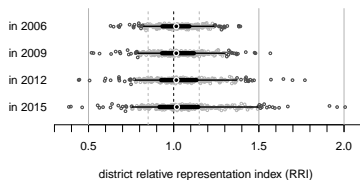- 6-year lag on average: 199**7**, 200**6**, 201**5**
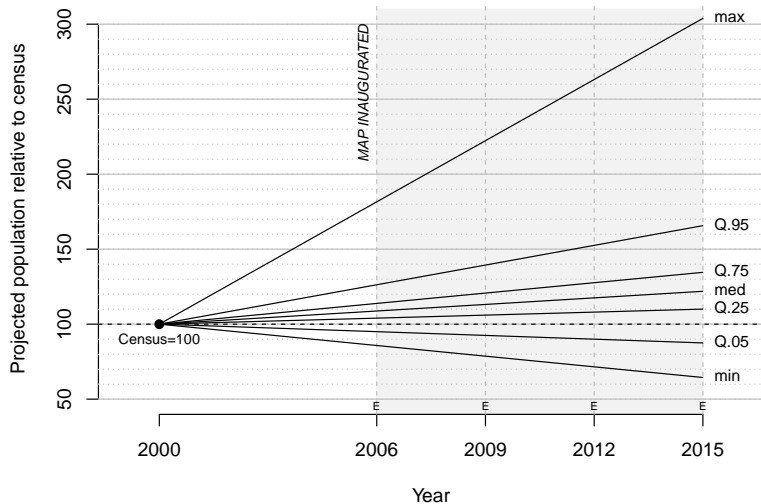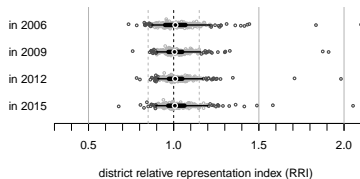
Plus: bureaucratic leeway in new district sizes

Malapportionment is substantial

$$RRI = \frac{nat.pop./300}{\text{district size}}$$

2006 map (drawn with 2000 census)

district relative representation index (RRI)

2015 map (drawn with 2010 census)

district relative representation index (RRI)

Automated redistricting

Redistricting by experts since 1997

1. no district crosses state boundaries
2. optimization algorithm $\rightarrow$ proposal
3. parties propose amendments ("must" improve score)
4. repeat 2 and 3 once
5. board approves new map

$$\texttt{Score} = .4 \times \texttt{PopBalance} + .3 \times \texttt{MunicBoundaries}$$
$$+ .2 \times \texttt{TravelTime} + .1 \times \texttt{Compactness}$$

$\pm 15\%$ imbalance considered legal (!)

Proposals and counterproposals

Parties protect strongholds?
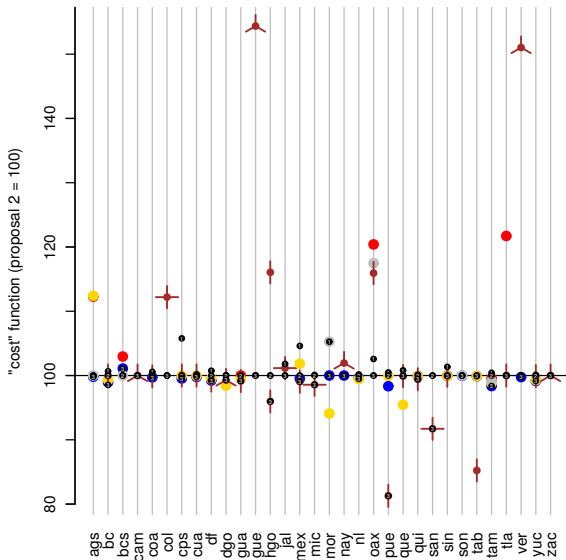
District similarity index = share common population
(Cox&Katz 2002)

Similarity between	min	25 %	median	75 %	max
initial proposal and SQ	0.128	0.419	0.584	0.755	1
final proposal and SQ	0.125	0.437	0.643	0.805	1
final and initial proposals	0.174	0.705	0.967	1	1

Draw Mexico project = offspring of *Public Mapping Project in U.S.*

Remove opaqueness from redistricting process

`DistrictBuilder` is open-source, web-based software

- enables widespread DIY redistricting thru cloud computing
- internet lets anyone draw/inspect maps: crowdsourcing
- redistricting contests in 6 US states $\rightarrow$ hundreds of legal plans

Application to Mexico ▸ Link: MexDemo (Donations anyone?)

- Transparency in commission's work is a must for accountability
- Mexico case study:
    1. Explicit rules violated
    2. Ad-hoc operationalization
    3. Parties acting as if implicit rules operational
- None can be assessed from publicly available information

Thank you!

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Thank you!