Regulating Elections: Districts

17.251
Fall 2004
Major ways that congressional elections are regulated

• The Constitution
  – Basic stuff (age, apportionment, states given lots of autonomy)
  – Federalism key

• Districting

• Campaign finance
An aside about the states: Run-off vs. plurality rule

• The South
• Interest in “instant runoff”
An Aside about Direct Elections

- 17th Amendment: 1914
- Indirect election didn’t make senators tools of the state legislatures… quite the opposite
- Direct election effects? Who knows
Districting

• Apportionment
  – Method of equal proportions
• Required in House races since 1820s
• Effects
  – Possible “malapportionment”
  – Responsiveness
Apportionment methods

• 1790 to 1830--The "Jefferson method" of greatest divisors
  – Fixed “ratio of representation” with rejected fractional remainders
  – Size of House can vary

• 1840--The "Webster method" of major fractions
  – Fixed “ratio of representation” with retained major fractional remainders
  – Size of House can vary

• 1850-1900--The "Vinton" or "Hamilton" method
  – Predetermined # of reps
  – Seats for state = Population of State/(Population of US/N of Seats)
  – Remaining seats assigned one at a time according to “largest remainder”
    – “Alabama paradox”

• 1940-2000--The method of equal proportions
Method of equal proportions

• “Results in a listing of the states according to a priority value--calculated by dividing the population of each state by the geometric mean of its current and next seats—that assigns seats 51 through 435.”

• Practically: This method assigns seats in the House of Representatives according to a ‘priority’ value. The priority value is determined by multiplying the population of a state by a ‘multiplier.’ For example, following the 1990 census, each of the 50 states was given one seat out of the current total of 435. The next, or 51st seat, went to the state with the highest priority value and thus became that state's second seat.

Source: http://www.census.gov/population/www/censusdata/apportionment.html
# Priority values after 2000

<table>
<thead>
<tr>
<th>Seat #</th>
<th>State</th>
<th>State seat</th>
<th>Priority #</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>CA</td>
<td>2</td>
<td>23992697</td>
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<td>52</td>
<td>TX</td>
<td>2</td>
<td>14781356</td>
</tr>
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<td>53</td>
<td>CA</td>
<td>3</td>
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<td>54</td>
<td>NY</td>
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<td>13438545</td>
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<tr>
<td>55</td>
<td>FL</td>
<td>2</td>
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<td></td>
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<td>431</td>
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<td>5</td>
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<td>432</td>
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<td>OH</td>
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<td>NC</td>
<td>13</td>
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<td>436</td>
<td>UT</td>
<td>4</td>
<td>645684</td>
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<tr>
<td>437</td>
<td>NY</td>
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<td>644329</td>
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<td>438</td>
<td>TX</td>
<td>33</td>
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<td>439</td>
<td>MI</td>
<td>16</td>
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<tr>
<td>440</td>
<td>IN</td>
<td>10</td>
<td>642025</td>
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</table>
Reapportionment Change in 2000

Figure 3. Apportionment of the U.S. House of Representatives for the 108th Congress

Change from 1990 to 2000:
- State gaining 2 seats in the House
- State gaining 1 seat in the House
- No change
- State losing 1 seat in the House
- State losing 2 seats in the House

Total U.S. Representatives: 435
Numbers represent reapportioned totals of U.S. Representatives.
Reapportionment Court Challenges

• *Department of Commerce v. United States House of Representatives*, 525 U.S. 316 (1999)
  – The Census Bureau can’t sample

• *Utah v. Evans*
  – “Hot deck” imputation challenged
  – Mormon missionaries miscounted
Districting principles

• Compactness and contiguity
• Equal population
• Respect existing political communities
• Partisan (or other) fairness
Compactness

• General idea: $\text{min}(\text{border/area})$
Compactness in the real world: Nebraska 2000

(Districts take effect September 1, 2001)
Compactness in the real world
Ohio 2000
Compactness in the real world: Florida
Florida 3rd district
Contiguity

• General idea: keep the district together
Contiguity in the real world: NC 1990
An aside: “Machine politics” in *The American Scientist*

Cake-cutting algorithm

Greedy algorithm

Simulated annealing

Contiguity in Mass. 4th CD, 2000
Equal population

• Implied by having districts
• Bad: Many states before 1960s
  – Illinois in 1940s (112k-914k)
  – Georgia in 1960s (272k-824k)
• Good: equality?
## Equality in 2000

<table>
<thead>
<tr>
<th>State</th>
<th>Ideal District Size</th>
<th>Percent Overall Range</th>
<th>Overall Range (# of people)</th>
<th>State</th>
<th>Ideal District Size</th>
<th>Percent Overall Range</th>
<th>Overall Range (# of people)</th>
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</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>636,300</td>
<td>0.00%</td>
<td>-</td>
<td>Montana</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Alaska</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Nebraska</td>
<td>570,421</td>
<td>0.00%</td>
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<tr>
<td>Arizona</td>
<td>641,329</td>
<td>0.00%</td>
<td>0</td>
<td>Nevada</td>
<td>666,086</td>
<td>0.00%</td>
<td>6</td>
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<tr>
<td>Arkansas</td>
<td>668,350</td>
<td>0.04%</td>
<td>303</td>
<td>New Hampshire</td>
<td>617,893</td>
<td>0.10%</td>
<td>636</td>
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<td>0.00%</td>
<td>1</td>
<td>New Jersey</td>
<td>647,257</td>
<td>0.00%</td>
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<td>Colorado</td>
<td>614,465</td>
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<td>New Mexico</td>
<td>606,349</td>
<td>0.03%</td>
<td>166</td>
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<tr>
<td>Connecticut</td>
<td>681,113</td>
<td>0.00%</td>
<td>0</td>
<td>New York</td>
<td>654,360</td>
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<tr>
<td>Delaware</td>
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<td>N/A</td>
<td>N/A</td>
<td>North Carolina</td>
<td>619,178</td>
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<td>Florida</td>
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<td>North Dakota</td>
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<td>N/A</td>
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<tr>
<td>Georgia</td>
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<td>Ohio</td>
<td>630,730</td>
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<td>Hawaii</td>
<td>582,234</td>
<td>-</td>
<td>-</td>
<td>Oklahoma</td>
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<td>Oregon</td>
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<td>Indiana</td>
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<tr>
<td>Iowa</td>
<td>585,265</td>
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<td>South Carolina</td>
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<td>Vermont</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td>Massachusetts</td>
<td>634,910</td>
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<td>-</td>
<td>Virginia</td>
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<td>Washington</td>
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<tr>
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<td>Wyoming</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: National Conf. of State Leg.
Respect for existing political communities

- Iowa
- Politicians like it
- May be better for citizens
- Getting more difficult with computer drafting of districts and (nearly) equal populations
But, the Assembly’s another matter
Partisan Fairness

- Results should be symmetrical
- Results should be unbiased
Partisan Fairness

- What is the right responsiveness?
Swing ratio

• Measure of responsiveness
• Concept:
  – Swing ratio = \( \frac{\text{Seats}_p}{\text{Votes}_p} \)
• Various ways to measure
Why the swing ratio is rarely 1

% Dem vote  % Dem vote
Empirical swing ratio
(with data from 2000)

With 2002:
Swing ratio = 1.85:1
Mayhew Diagram, 2002
Racial fairness

• From 15th amendment
  – “The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.”

• Voting Rights Act of 1965
  – Prevented dilution
    • S.C. says you have to show intent
  – 1982: VRA extension allows effect
  – 1990: Justice dept. moved to requiring maximizing minority representation through pre-clearance
Some Court Cases

- Equal population
  - Colgrave v. Green (1946): “political question”
  - Baker v. Carr (1962): Tennessee state districts
  - Gray v. Sanders (1963): Ga. unit rule
  - Wesberry v. Sanders (1964): “one person, one vote” doctrine
VRA Cases

- 1965: Dilution outlawed
- 1982: Extension + Republican DOJ = Racial gerrymanders
- 1993: Shaw v. Reno
  - Race must be narrowly tailored to serve a compelling gov’t interest, or….
  - Sandra is the law
  - Non-retrogression doctrine
  - Districting overturned in GA, NC, VA, FL, TX, LA, NY (but not IL)
- Page v. Bartels (2001): incumbency protection OK, even if it’s only minority incumbents
A Word about Massachusetts