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Estimating the Electoral Consequences of Legislative Redistricting in France

How does the electoral map influence elections? We propose a definition of *diversity* to capture the gerrymandering potential of a set of legal electoral maps. For a specific choice of electoral map within the set, we propose a definition of outliers (*positive outlier* or *negative outlier* with respect to a given political party), to identify where the electoral map ought to be audited.

We apply this approach to the French system. Its legal constraints are very different from the U.S., much more granular and much less balanced. We show that despite the legal constraints, there is some large diversity of maps, and thus it is possible to choose maps so as to favor one particular political party in the aggregate. We show that many states are positive or negative outliers, with a large imbalance between different parties. This calls for a specific audit of redistricting in those states, to examine whether the current map is indeed drawn in a way to advantage or disadvantage some party.

This is joint work with Evripidis Bampis, Thomas Ehrhard, Bruno Escoffier, Claire Mathieu and Fanny Pascual