

TESTIMONY



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Summary

In the aftermath of the 2000 Presidential election and the disputed vote in Florida, a widespread perception emerged among politicians and in the media that the use of punch cards, and of antiquated voting machinery more generally, is more common in counties with a greater percentage of minorities and poor people. Vice-President Gore stated that "the old and cheap, outdated machinery is usually found in areas with populations that are of lower income people, minorities, and seniors on fixed incomes." Senator Lieberman suggested that antiquated voting equipment "may be widening the electoral rights of many poor and minority citizens." A series of editorials and op-ed articles in the Washington Post stated as fact that "it is mainly affluent counties that have switched" from punch cards to more modern equipment while "poor and minority voters tend to be stuck with less accurate machines," that African Americans "were far more likely to be stuck with the lousy machines than were affluent whites," that "voters in predominantly minority communities had to vote using antiquated machines," and that "the most error-prone machines tend to be in the poorest counties.

Only very limited and selective analyses underlie these assertions, however. A New York Times study reported that in the 2000 election in Florida, 64% of African American voters but only 56% of whites lived in punch card counties. A Washington Post article concluded from an examination of the Atlanta and Chicago metropolitan areas that the problem of racial differences in invalidated ballots caused by gaps in voting technology "extended well beyond Florida."

With Professor Martha Kropf of the University of Missouri-Kansas City, I have conducted a comprehensive statistical analysis of this issue, in a study titled "Who Uses Inferior voting Technology?" Our study analyzes the incidence of punch card and other voting equipment by ethnicity, income and other variables, combining county-level demographic data from the Census Bureau with county-level data on voting equipment. We found little support for the view that resource constraints cause poorer counties with large minority populations to retain antiquated or inferior voting equipment. Nationally, there is very little difference between whites and blacks, between the poor and non-poor, and between Democratic and Republican voters, in the likelihood of living in a punch-card county.

In a majority of states in which some but not all counties use punch card technology, whites, the non-poor and Republican voters are actually more likely than African Americans, the poor and Democratic voters to live in punch card counties. Moreover, counties with punch card systems on average have higher personal incomes, higher tax revenues per capita, and larger populations than do counties with more modern voting technology.

Data and Methodology

Following the general election in November of each even-numbered year, Election Data Services, Inc. surveys states and counties to obtain data on voter registration, vote totals, and voting equipment in use, with complete

results available the following spring or summer. Our study uses data from 1998, the most recent year for which the voting equipment data were available. Each county is classified in the Voting Equipment Data File as either using paper ballots, lever machines, Votomatic-style punch cards, Datavote, optical scanning, electronic, or mixed.

We merged the Voting Equipment File with demographic data from USA Counties 1998, a data file available from the U.S. Census Bureau. This file provides estimates of the number of whites, African Americans, and Hispanics (who may be of any race) residing in each county in 1996, and of the number of poor and non-poor persons as of 1993. Personal income per capita and property tax revenues per capita are available for 1994 and 1992 respectively. Data are available in USA Counties on the number of votes cast for the Democratic and Republican candidates (Clinton and Dole) in the 1996 presidential election, which can be used to approximate the partisan distribution within counties.

Detailed Findings

For the U.S. overall, black-white differences in punch card use are negligible: 31.9% for whites and 31.4% of African Americans live in counties using this voting technology. Hispanics are much more likely to live in punch card counties than either whites or blacks. However, this difference is entirely attributable to Los Angeles County, where nearly one in seven Hispanics in the country reside. Whites (27.7%) are more likely than blacks (21.8%) to live in optical scanning counties, but blacks (37.8%) are much more likely than whites (26%) to live in counties using either of the technologies for which overvoting is nearly impossible if machines are programmed correctly: electronic voting and lever machines.

Differences in voting equipment associated with poverty status are very minor- The poor are slightly more likely than the non-poor to live in punch card counties, but also slightly more likely to live in counties with electronic voting.

Based on presidential voting patterns in 1996, Democratic and Republican votes were equally likely to live in punch card counties. Democrats were somewhat more likely to live in counties with "antiquated" equipment, but in the form of lever machines that produce very few invalidated ballots, not punch cards. Republicans were somewhat more likely than Democrats to live in optical scan and electronic voting counties.

In practical terms, these nationwide comparisons are relevant only for the popular vote in the presidential election. Equity in voting technology is better addressed by examining differences across counties within states. The Electoral College system grants a state a fixed number of electoral votes, regardless of the number of valid votes cast in the state. Therefore, differences in voting technology that are purely cross-state cannot disadvantage a state's voters relative to other states. For this reason, it is important to examine differences across counties within states, to exclude purely cross-state differences that can have no electoral impact. Accordingly) we considered separately each of the 29 states in which some but not all counties use punch card technology.

The conventional wisdom regarding racial disparities in voting equipment is contradicted by the state-level comparisons: in 18 of the 29 states whites were more likely than African Americans to live in punch card counties. The 11 states in which blacks were more likely to live in punch card counties tend to

be larger, however, accounting for 191 electoral votes, compared to 162 for the 18 states in which whites were more likely to live in punch card counties.

A similar comparison between whites and Hispanics shows that the former were more likely to live in punch card counties in 21 states (representing 235 electoral votes), while the latter were more likely to live in punch card counties in only 8 states (representing 118 electoral votes).

The conventional view that the poor live disproportionately in punch card counties also turns out to be incorrect for the majority of states. In 21 states, representing 203 electoral votes, it is the non-poor who are more likely to reside in counties using this type of voting equipment. In only 8 states, representing 150 electoral votes, are the poor more likely to live in punch card counties.

Party differences, as measured by voting in the 1996 presidential election also contradict popular belief. A greater share of Dole voters than Clinton voters lived in punch card counties in 16 of 28 states. However, the states in which Democratic voters were more likely to live in punch card counties account for slightly more electoral votes (183 to 167).

Economic Factors

The belief that minorities, the poor and Democrats tend to reside in areas using more error-prone voting equipment rests in large part on the reasonable presumption that cost matters. Electronic voting systems are more expensive than punch card systems, and counties with a lower poverty rate (and thereby a smaller share of minorities and Democratic voters in general) may be better able to afford the newer, more expensive technology. On the other hand, larger counties - where minorities and Democratic voters disproportionately reside may benefit from economies of scale in purchasing and implementing newer systems such as electronic voting.

Our results found little evidence that the retention of punch card systems, or the adoption of less error-prone optical scanning or electronic alternatives is heavily influenced by considerations of affordability. Punch card counties in Florida are much larger, wealthier, and more revenue-rich than any other group of counties. It is exactly those counties which should be best able to bear the expense of modern equipment which are the most likely to retain punch cards.

For the U.S. as a whole, punch card and Datavote counties are larger and wealthier on average than those using any other voting system. Paradoxically, counties using electronic voting constitute the group with the lowest incomes on average, and -- by a wide margin -- the lowest property tax revenues per capita.

Similar findings are produced by comparisons across counties for each state separately. For each state in which some counties use punch cards while others use modern (optical scanning or electronic voting) equipment, we calculated simple averages of county size, income, and taxes across the relevant group of counties. For example, we found that in Arkansas, punch card counties on average are larger (mean population of 63,594) than counties with modern equipment (34,139). Similarly, they are wealthier (mean personal income per capita of \$16,597 vs. \$14,982) and have higher tax revenues per capita. (mean of \$239 vs. \$209 per year).

In 17 of 28 states, punch card counties tend to be larger than counties with

modern equipment. Similarly, in 17 of 28 states punch card counties tend to have higher incomes, and higher property tax revenues per capita.

Conclusions

Results from our study contradict the widespread belief that African Americans, the poor, and Democratic voters are more likely to reside in counties using punch card technology, and that the choice of voting systems is largely determined by affordability. Evidence reported in the media on ethnic and party disparities in Florida and in selected metropolitan areas such as Atlanta and Chicago is inconsistent with evidence from most other states and the country as a whole. In fact, in the majority of states with some counties using punch cards and others using alternative systems, whites, the non-poor, and Republican voters are more likely than African Americans, the poor, and Democratic voters to reside in punch card counties. Moreover, there is little evidence that the choice between punch cards and more modern, less error-prone systems is influenced by economic factors. To the contrary, in Florida and elsewhere larger, wealthier and more tax-rich counties are more likely to use punch card technology, and less likely to use electronic voting systems.

Several caveats to our study should be noted. First, there are potentially important variations in the age of equipment and in the way it is operated that we are unable to control for due to a lack of data. Second, we address only the question of who uses punch card and other voting systems, and do not explore the question of whether minorities and the poor (perhaps due to greater illiteracy or lower quality of education) might make more mistakes than other voters when using punch card technology. Finally, we do not claim that the 2000 presidential election outcome was unaffected by the geographic distribution of punch card voting in the 2000 election. Unluckily for Vice-President Gore, the crucial state in the election happened to be one of the few in which Democratic voters were substantially more likely than Republicans to vote using punch card technology. Finally, the study is intended solely to investigate the consensus that rapidly emerged in the aftermath of Florida regarding who was more likely to confront antiquated voting technology, and should not be interpreted as taking a position on any of the political or legal controversies that arose in Florida following the 2000 election.

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