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WHAT, ME VOTE?

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I have benefitted from discussion with Dan Devroye and comments by Christopher Jencks, Lawrence Mead, and Larry Bartel. The views expressed herein are those of the authors and not necessarily those of the National Bureau of Economic Research.

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ABSTRACT

This paper examines the pattern of change in turnout in elections and in the rate of voting of different socioeconomic groups in the US. It shows that while the changing education and income structure of the population and changes in laws and regulations that make it easier to register and to vote should have raised turnout, the proportion of the voting age population that votes has fallen. This is partly due to the increased proportion of voting age persons who are ineligible to vote, but it is hard to pin down the magnitude of that effect due to problems with data. It also finds that turnout has become much more unequal by age, education, and income.

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Voting turnout, measured by the number of persons voting relative to the population of voting age, is lower in the US than in other advanced democracies, including the US's nearest neighbor, Canada. From 1945 to the late 1990s, the US averaged 48.3% turnout of the voting age population while Canada averaged a 68.4% turnout relative to the voting age population. In the 2000 Presidential election, 51.4% of the voting age population in the US cast ballots. On a world scale, the US ranks 138th in turnout among countries that hold elections -- far below every other advanced democracy save for Switzerland (in 137th position).¹ Turnout in 2000 was eight percentage points lower than it was in 1960, when President Kennedy appointed a commission to study the "low" turnout then.

What explains low and declining turnout?

Does low turnout skew the voting population toward more advantaged social groups, defined by education, income, age, or occupation?

What institutional features of the electoral process affect turnout?

In this paper I examine what social science knows about these questions. Most studies that examine voting rely on the National Election Studies (NES, www.umich.edu/~nes/), which conducts surveys of the American electorate in presidential and midterm election years, before and after elections; the November voting supplement to the Current Population Survey (CPS, www.census.gov/population/www/socdemo/voting.html), which asks respondents their registration and voting status in national elections; and administrative counts of votes divided by the voting age population, as published by the Census Bureau and the Congressional Quarterly.² Some of the studies rely on other sources as well: tabulations of votes in particular areas, experiments with get out the vote campaigns, exit polls, and so on.

The NES and CPS record the answers of individuals to questions about whether or not

they voted in the most recent election. Both data sets record higher turnout than does the administrative vote counts. One reason for the discrepancy between the self-reported and administrative data is that some people report casting ballots when they did not do so³. Another reason is that the surveys, particularly the NES, disproportionately undercount low turnout groups. Burden (2000) reports that this problem has grown over time in the NES for Presidential elections⁴, in part due to declining response rates of those surveyed. The level and trend in the discrepancy between the NES and administrative counts is also affected by differences in the populations covered: the administrative turnout figures are based on voting age population, while the NES sample is limited to eligible voters, and to the greater impact of measurement error at lower levels of turnout⁵. But rates of turnout based on administrative data are themselves imperfect. The number of votes counted differs from votes cast due to technical difficulties relating to voting machines, voter errors in recording their vote, and so on⁶. Most important for assessing turnout, administrative turnout figures relate the number of votes to the voting age population, which exceeds the population eligible to vote. Given available data it is difficult to estimate the proportion of eligible voters in the voting age population over time.

This review has four major findings regarding turnout and the level and trend in inequality in turnout in the US.

1. No single factor explains why Americans in such low proportions. Turnout in the US is low in part because the country has a large population of non citizen immigrants who cannot legally vote; in part because many states disenfranchises ex-felons from voting; in part because increased family or time demands deter some potential voters from going to the polls; and in part because of changes in political mobilization.

2. The level and trend in turnout is related to socioeconomic status. Persons having higher income, occupational standing, education, and age are more likely to vote than otherwise comparable persons with lower income, occupational standing, education, and age. From the 1960s to the present, inequality in the rate of voting by socioeconomic group has increased.

3. Policies that make it easier to register, such as increasing the venues for registering, reducing the time between registration and voting, allowing voters to register on voting day; and policies that make it easier to vote, such as mail balloting, opening polling booths for more hours, or for more days have modest positive impacts on turnout. Get out the vote campaigns, particularly face to face canvassing, have a somewhat larger impact on turnout.

4. In contrast to the US proper, one part of the country, Puerto Rico, has an extremely high rate of turnout. In the 1990s, Puerto Rico had a 78 percentage point turnout in Presidential election years, compared to just over 50% turnout in the 50 states. An important reason for this high turnout is that the island makes Tuesday elections a holiday and the political parties mobilize voters extensively on that day.

I. MAGNITUDE OF TURNOUT

As noted, turnout in the US for elections is low by international standards. Advanced democracies average a 73% rate of turnout, so that even the highest turnout rates in the US in post-World War II years, on the order of 60%, fall short of the rates in comparable countries.⁷ As in other countries, turnout in the US varies by socioeconomic group. Better educated, higher paid, and older citizens invariably have higher turnout rates than others⁸. This means that differences in turnout rates across countries and changes in turnout in the same country over time

occur largely because of variation in the voting rates of the less advantaged part of the population.⁹ The low turnout of lower income persons in the US than in other democracies means that the median voter is higher in the social strata in the US than elsewhere.¹⁰

Cross-country comparisons suggest three reasons for low turnout in the bottom parts of the US distribution. The first is the weakness of trade unions in the US compared to other countries – unions usually organize lower income workers to vote, often for labor-oriented parties, so that countries with greater union density tend to have higher turnouts.¹¹ The second reason is that US has a first past the post two party system, which elicits smaller turnouts than proportional representation systems of voting, where minority opinions vote so that they can have a voice in legislatures. The third is the congressional/presidential system, which elicits smaller turnouts than parliamentary systems.¹²

Historically, institutional features of the US voting process made it harder for Americans to vote than citizens in most other democracies. The U.S. is almost alone among major democracies in requiring citizen-initiated registration to vote. In most countries, citizens have the right to vote without going through a special registration system.¹³ The US has never mandated voting, say by fining those who fail to vote, as some countries do (Lijphart, 1997). The US has never introduced voting on weekends or made weekday voting days holidays, as some countries (and Puerto Rico) do. Finally, rather than having a national voting procedure, each of the US states determines its own regulations, which creates variation in registration rules and in determination of eligible voters. The close 2000 Presidential election highlighted differences in state regulations of voting by ex-felons, as well as the ability of local officials to bend rules in ways that affect turnout.

Turnout in the US relative to the voting age population fell noticeably in the latter part of the 20th century, despite diverse policy and regulatory changes that have made it easier for citizens to vote. Exhibit 1 shows that since the 1950s the turnout rate based on administrative data has declined in both congressional and presidential election years. The numerator in this statistic is the number of persons who vote for the highest office in each year; while the denominator is the voting age population – the population aged 21 and above until 1972 when the franchise was extended to 18-20 year olds. The drop in turnout in 1972 is partially due to the change in the voting age population in that year. Because a larger proportion of the population votes in years when the nation selects a President than in years when it does not, the exhibit differentiates between Presidential year and non Presidential year elections. Because more people vote for President than for Congress in the same election, it also differentiates between the voting rate for the two types of offices.

The proportion of the population that votes varies from election to election. It was low in the 1948 election, when presumably everyone thought Dewey was a sure winner. It was higher in the 1992 campaign when Ross Perot ran than in surrounding years and was a bit higher in 2000 than in 1996. But these variations occur around a general downward trend. From the 1950s to the 1990s the proportion of Americans who vote has declined. Wattenberg's (2002) analysis of turnout in other advanced democracies shows a similar pattern throughout the West: falls in density in the United Kingdom, continental Europe, and in other advanced OECD countries.¹⁴ Country-specific factors might explain the reduction in turnout country by country, but the broad pattern suggests the operation of similar factors across all advanced countries.

The downward trend in density in the US occurred despite government efforts to make it easier for citizens to register and vote. The most important franchise-increasing law was

the 1965 Voting Rights Act, which helped re-enfranchise blacks in the US South, many of whom had effectively lost the ballot due to the actions of politically dominant whites. Another important act was the National Voter Registration Act of 1993 (so-called motor voter act), which increased the venues through which they could register, including state car registration offices. Many states enacted other laws or regulations that reduced the burden of registering and voting. That turnout fell during a period when the country made it easier for citizens to vote rules out any institutional or legal explanation of the trend.

Analysts have examined the impact on turnout of a variety of factors: changes in proportion of the voting age population eligible to vote; changes in family status; changes in mobilization by political groups, and changes in legal and administrative regulations that influence the burden of voting. While research has greatly illuminated the factors that affect voting, it has not turned up a simple clear reason for the decline in turnout.

The role of demography

As noted, the fact that the US population has become more educated, works in higher status occupations, and has higher family income than in the past operates to raise turnout. One important demographic factor, however, works in the opposite direction. This is the rising proportion of the adult population that cannot legally vote. The vast majority of this group consists of immigrant non-citizens. In the 1950s non-citizens made up about 2% of the voting age population. In 2000, they made up about 8 % of the voting age population. In addition, the number of incarcerated persons, who generally cannot vote, and ex-felons, who cannot vote in many states, has risen sharply enough to become a political issue. On the order of 1% of the voting age population cannot vote due to their being ex-felons.¹⁵

In an important study McDonald and Popkin (M&P) (2002) calculated the turnout rate for eligible citizens by replacing the population of voting age by an estimate of the number of citizens with the franchise. In the 1990s their turnout rate of voters divided by eligible voters was some 4 percentage points higher than the reported turnout. Casper and Bass (1998) and Burden (2000) provide comparable estimates for 1996.¹⁶ Since 1972 (when 18-20 year olds became eligible to vote), M&P estimate that the number of voters divided by the number of eligible voters barely fell in Presidential years and increased modestly in Congressional elections.

If data on the non-citizen population were perfect, these calculations would go a long way to resolving the question of why turnout fell after 1972, while still leaving a pre-1972 decline in turnout to be explained by other factors. But estimates of the non-citizen population are highly imperfect. One reason is that from 1966 to 1993, the Current Population Survey (CPS) did not ask respondents directly if they were citizens but allowed for the response “not a citizen” to a question about why they were not registered to vote. From 1994 on the CPS asked directly “what is your citizenship status”. Thus, we do not have the same data over time to calculate the number of non-citizens and citizens in the adult population. Equally important, the CPS figures show considerable year to year variability in the estimated number of non-citizens – the signature of considerable measurement error. Table 1 of the M&P article, which records their adjustments for turnout, shows a surprising 4.6 million person drop in the number of non-citizens from 1992 to 1994 (see Appendix Table A for the key non-citizens series). This drop presumably reflects changes in the way the CPS posed the question about citizen status between the two years, not a genuine fall in the number of non-citizens. The data also shows large jumps in the numbers of non-citizens between 1980 and 1984 and between 1998 and 1990. In addition,

there are measurement problems in estimating the number of citizens who lack the franchise because of criminal behavior. We have accurate counts of the prison and jail populations but do not have survey data on the number of ex-felons who are legally ineligible to vote, and must make various assumptions to make this adjustment.

To see how well the rising proportion of non-citizens in the voting age population can explain declining turnout, I estimate a small time series model that links the number of voters and the population of voting age to the estimated number of persons eligible to vote for the period, 1948 to 1998. My analysis shows that the measurement problem with non-citizens of voting age makes it difficult to determine their contribution to the trend decline in turnout.

Model of the trend in turnout

Let P be the population of voting age; V be the number of voters; E be the estimated population eligible to vote; D be a dummy variable for whether the election is in a Presidential year and let T be a trend counter. Then V/P is the standard turnout rate; V/E is the turnout rate relative to eligible voters; and E/P is the proportion of the voting age population eligible to vote. To estimate the trend in turnout for the voting age population, I regress the log of the ratio of the number of voters to the voting age population on a trend term and whether the election is a presidential contest or not. The coefficient b on the trend term measures the magnitude of the drop in turnout:

$$(1) \ln (V/P) = a + b T + c D.$$

Line 1 of table 1 presents estimates of this equation for the period, 1948 to 2000. The estimated coefficient ($\times 100$) on trend is -0.81 , which translates roughly into 0.8 percentage

points in turnout per year (i.e. a drop in turnout from a 0.500 to 0.492 in the next year). This implies a 4 percentage point drop in turnout per decade, given five elections in a decade.

Next, I estimate a turnout equation using the estimated population legally eligible to vote as the denominator (V/E). The coefficient b' on the trend term in this equation measures the magnitude of the drop in turnout relative to the new population base, E. To the extent that the drop in turnout is due to the changing proportion of the voting age population eligible to vote, the coefficient b' should be smaller in absolute terms than the coefficient b.

$$2) \ln (V/E) = a' + b'D + c'T$$

Line 2 of table 1 gives the estimate of this equation. Adjusting for the eligible population in the denominator produces a coefficient on trend (x 100) of -0.48. Changing the base for the turnout statistic to persons eligible to vote thus reduces the downward trend in turnout from 0.81 to 0.48, a reduction of 41% (= .81-.48/.81). By this calculation, 41% of the trend decline in turnout appears due to rising proportion of persons without the franchise.

But there is an alternative, less restrictive, way to examine the effect of the proportion of the voting age population eligible to vote on the trend. Rather than replacing the voting age population P with the estimated population eligible to vote, E, in the denominator of the measure of turnout, I add a new term to equation (1) – the ratio of eligible voters to the voting age population (E/P). This gives the equation:

$$3) \ln (V/P) = a'' + b''D + c''T + d \ln (E/P)$$

If the number of eligible voters is measured accurately and the model (2) regression is correct, the coefficient d on $\ln E/P$ will be 1. This effectively turns the dependent variable in equation 3 into $\ln V/E$ as in equation 2 (since we can move $\ln E/P$ to the left hand side of the equation, where the $\ln Ps$ cancel) But if E/P is poorly measured or if it is related to other factors that affect

turnout, the coefficient d may vary from 1. This will give a different estimate of the impact of the rising proportion of ineligible voters on the trend. Line 3 of exhibit 2 shows that the trend in the turnout drops to -0.27 and is insignificant. But the estimated coefficient on the $\ln E/P$ term is considerably above the coefficient of 1 that we would expect from a correctly specified and measured model, which raises some doubt about the correction procedure.

The strongest claim by M&P is that the rising proportion of non-citizens explains **all** of the drop in turnout from 1972 on. Adjusted for the number of non-eligible persons of voting age, they find that the drop in turnout was small and statistically insignificant for Presidential year elections and positive in Congressional year elections. To examine this claim, I estimated equations (1)-(3) for the period 1972-2000. These results are given in lines 4-6 of table 1. The coefficient on trend in line 4 is smaller than the trend coefficient in line 1. The drop in the turnover post-1972 was half as large as that over the 1950-1998 period. Consistent with the M&P analysis, when I replace the voting age population with the estimated number of citizens eligible to vote in the denominator of the turnout measure in line 5, the negative trend disappears completely. When I enter the ratio of eligible persons to persons of voting age in line 6, however, the coefficient on the eligible proportion of the voting age population is negative and significantly different from unity; and the coefficient on trend jumps to -0.85. The problem is that the estimated number of non-citizens fluctuates oddly both before and after the Census change in definition, as can be seen in Appendix A, with odd effects in this small time series.

From these calculations, I conclude that measurement error in estimating the proportion of the voting age population eligible to vote weakens the claim that the rising proportion of ineligibles accounts for the entire drop in turnout post 1972 and makes it unclear what proportion of the longer term downward trend can in fact be attributed to the changing proportion of

eligibles. The rising proportion of ineligible persons of voting age must have reduced the turnout rate, but the measurement problem does not allow us to determine its contribution to the trend with any confidence. That depends on the model we use, with the more flexible model giving the worst results for the 1972-2000 period. But even if we chose to ignore the measurement problem and accept regressions 2 and 5 as the appropriate ones, the turnout puzzle would not disappear. The increased education, occupational status, and income of citizens operated to increase turnout, whereas it fell. The puzzle becomes more severe when we recognize that throughout the period the US made it easier for citizens to register to vote and for registered voters to vote, exclusive of ex-felons.

Changing institutional determinants

Both the federal government and individual states have adopted policies to make it easier for persons to vote. In 1965 the federal government enacted the Voting Rights Act to help black citizens overcome discriminatory practices in access to voting in the South. In 1993 the National Voter Registration Act enabled citizens to register simultaneous with motor vehicle driver's license application or renewal, to register at diverse government offices that provide public assistance and services and to register by mail.¹⁷ Going further, many states have reduced the time before elections when citizens must register, with seven states (Idaho, Maine, Minnesota, New Hampshire, Wisconsin, and Wyoming, and North Dakota) allowing voters to register on election day. Most states have made absentee ballots easier to obtain, particularly for elderly citizens, and in the case of Oregon, have created a mail only ballot. Some states open polling stations before elections, so that there is an election week rather than day. Because different

states have initiated policies at various times, researchers are able to infer the institutional determinants of turnout by comparing turnout in states with different policies in a given year and comparing changes in turnout between states that changed policies and states that did not change policies.

Studies of the effect of legal and administrative policies show that easing registration regulations affects turnout, but only modestly. While early cross section comparisons found that states with easier forms of registration had considerably higher turnout than other states¹⁸, analyses that relate changes in state laws and changes in turnout show much smaller positive effects of the form of registration on turnout. Knack's (1995) analysis of differences in state registration laws prior to the motor voter act suggest an impact of perhaps 21 to 22 percentage points, staggered over time.¹⁹ The larger cross section difference in turnout between states with harder/easier forms of registration presumably reflects omitted characteristics of the state that determines both the policy and the turnout.

The motor voter act changed the way people register to vote. Thirty-five percent of persons who registered to vote after January 1, 1995 registered through motor vehicle offices, 2% at a public assistance office, 6% at a school, hospital, or campus, 11% by mail, and 6% at the polls on election day (CPS, 2002, table 14). Some experts (Piven and Cloward) anticipated that this would greatly raise registration and turnout. Others experts thought it would have no effect as motor voter registrants would register but not show up on election day. Overall, the motor voter act seems to have raised turnout modestly. Wolfinger and Hoffman (2001) found that people who registered at motor vehicle offices were about 14 percentage less likely to vote than people who registered in other ways, but that they still voted in sizable numbers that "greatly

exceeds the expectations of scholars who thought that motor voter registrants would be largely abstainers”.²⁰

Another important changes in state regulations of voting has been liberalizing rules for absentee balloting. Making it easier for persons to cast absentee ballots has increased the proportion of the electorate choosing that way to vote. In 2000 some 14% of voters either cast an absentee ballot or voted at a polling station before election day. Many of the absentee voters would have voted in any case, but some presumably would not have voted without the absentee option. The use of absentee ballots varies considerably among states, depending on the states’ election law. California, Texas, and other western states rely extensively on the postal ballot. In 2000, approximately 25% of Californians voted absentee ballots. In his study of the effect of absentee ballots on turnout, Oliver (1996) notes that both the use of the absentee ballot and its effect on overall turnout varies with the policies of the state political parties, some of whom seek to mobilize absentee voters while others do not. He uses a logistic model to relate voting to the individual characteristics of the respondent and various measures of state laws and the activity of the political parties in the state. The results show that voting is more likely in states that have more open primaries, that expanded eligibility for absentee ballots, and that have final registration dates close to the voting day. His bottom line estimate is that provisions that make absentee balloting easier increase turnout by 1-2 percentage points.

Local jurisdictions throughout the US have conducted thousands of elections by mail rather than by having polling booths. This is done largely in small areas, special districts, and school districts. Hamilton’s 1988 review of mail only balloting shows that this innovation has raised turnout and lowered the cost of holding elections. After experimenting with voting by mail Oregon became the first state to adopt this method of voting as its sole way to conduct

elections. Surveys of Oregon voters show that they strongly prefer all mail voting to voting at polling places, while the state saves millions of dollars in costs. Berinsky, Burns and Traugott (2001) estimated that voting by mail increased turnout in Oregon's 1996 election by 4-6 percentage points compared to previous elections in the state. They also found that voting by mail worked by keeping existing voters in the group that voted rather than by attracting new voters. Traugott and Hammer (2001) find that the high turnout persisted through 2000.

But not all of the evidence supports the claim that mail balloting raises turnout in larger elections. Comparing Oregon elections that used polling place voting with elections under the vote only by mail procedure, Banducci and Karp (2002) found that higher turnout from mail balloting was slight in major elections, far below the effect of postal balloting on turnout in local races (table 1). Analyzing voting data in three California counties, Mullin and Kousser (2002) report little difference between turnout in precincts that used mail-only ballots because the precincts were too small to have polling places and precincts that had voting by poll and absentee ballot.

Finally, comparing turnout in the 2000 election in states that opened their polling booths earlier and kept them open longer with other states. Wolfinger, Highton, and Mullin (2002b) found modest effects on the turnout of registered voters.

In sum, diverse analyses show that easing administrative requirements to vote raises turnout in sensible but modest ways. If these analyses are right, turnout has been increased by 3-4 points as a result of the diverse changes in registration and voting laws and procedures. This adds to the mystery of why turnout has fallen.

Time and family commitments

One factor that could have reduced turnout is the increased time constraints people have as a result of work and family commitments. In contrast to the 1950s, when most families had two adults, one of whose job was full-time caretaker in the household and the other a full-time worker, in the 1990s, the majority of married families have two earners, and upwards of 25% of families were lone parent families. The result is that the average American devotes more time to work than in the past, making it harder to find time to non-market activities. The time cost of voting has presumably risen most for persons with children, since they now have both time and work commitments.

There is some evidence supporting a “rising time cost” hypothesis. In 1980, 1996, 1998, and 2000, the Bureau of the Census asked the non-voting registered population why they had not voted. Table 2 summarizes what non-voters told the CPS in these years. In 1980 7.6% volunteered that the reason was that they had “no time off from work or school or /were too busy”. In 1998, 34.9% percent reported that the reason they had not voted was that they had “no time off from work or school or /were too busy.” In 2000, 20.9% gave the too busy because of school or work answer. Contrast these responses to the proportion of persons who reported lack of interest as the reason for not voting. In 1980, 11.2% said they were not interested or did not care about elections, which is 3.6 percentage points more than the 7.6% who said they were too busy. In 2000, 12.2% said they were not interested, a modest one percentage point rise. The increase in the proportion of registrants who cited a time constraint for not voting dwarfs the increase in the proportion of registrants not voting who gave the lack of interest answer.

If people are giving their true reason for not voting, one would expect groups facing especially heavy demands on their time to disproportionately report that they did not vote because they had no time off or were too busy. Parents— particularly lone parents — are more

likely to cite this reason than others; and persons with children are less likely to be registered and vote than others. NES data analyzed by Texiera and summarized in table 3 shows that the difference in turnout rates by parents and non-parents has risen from 1956 through 1996 (exclusive of 1992). His analysis of the CPS files for 1992 further suggests that the parent/no-parent gap differs greatly by the position of parents: the gap is huge among the least educated and low income families while non-existent among college graduates and higher income families. Wolfinger, Highton, and Mullin (2002b), however, report that voting rates of employed persons does not vary with the time polling booths are open nor with state laws that require employers to give workers time off to vote. Since employed persons are more likely to be time constrained than others, these results are inconsistent with costs of time having a large impact on turnout.

Overall, I conclude that rising time cost/family commitment explains at most a minor part of the trend in turnout. If time commitments were a major factor, voters in states such as Texas and Tennessee which allowed voters to cast their ballot before election day or by absentee ballot would have had exceptionally high rates of voting from registered voters, as would Oregon, which had voting by mail. But the rate of voting by registered voters in these states did not diverge greatly from the US average in the 2000 election.

Mobilization

Analysts have examined how factors endogenous to the political process affect voting, including political mobilization, partisan attitudes, campaign spending, prospective voters' views of political efficacy and the expected closeness of elections. Since politicians determine some of these factors in response to how a campaign is progressing, it is hard to infer their causal

impact on turnout. If candidate X thinks she can win an election by mobilizing voters through canvassing or media expenditures, she will do so and possibly increase turnout of her supporters. If candidate Y thinks that campaign mobilization will not work in his race because voters are too turned off, he will canvas or spend less. In the 2000 Presidential election, both Bush and Gore spent much of their budgets on a set of “battleground states” that each felt they had to win to gain an electoral college majority. McKee (2002) estimates that turnout was 1-2 percentage points higher in the battleground states than in other states (table 6). But by mobilizing in some states and ignoring others, this targeting could just as easily have reduced national turnout as increased it. Why bother to vote in Massachusetts or Texas when neither candidate is seeking votes there on the assumption that the results are impervious to efforts? To infer the effects of spending and other campaign policy variables broadly, one needs a good instrument for the policy or random assignment of policies.

Gerber and Green (2000), and Green, Gerber, and Nickerson (2003) have used an experimental design to examine the effect of get-out-the-vote campaigns on turnout. They organized nonpartisan student and community organizations to canvass a randomly assigned group of registered voters in several cities to induce them to vote in local elections. The results of these experiments show that face to face canvassing significantly increased turnout, with persons contacted by the organizations having on the order of 7 percentage points higher voting rates than persons not contacted by the groups. However, the canvassers could not contact two-thirds or so of those assigned to treatment groups, so that the effect of the mobilization campaign on aggregate turnout were more modest. In a related study, Michelson (2002) reports larger increases in voting and high rates of contacting the treatment group in a mobilization drive focused on Latino Democrats in California. Focusing on young voters, whose turnout falls short

of that of other voters, Nickerson (2002) has found that get out the vote drives raise the turnout of contacted youths as much as similar campaigns raise the turnout of contacted adults, but that youths are much harder to reach. The implication is that political parties and nonpartisan organizations can mobilize young persons (and speculatively other low turnout groups) to vote if they can locate and speak with them. Examining another mode of galvanizing voters, Wolfinger, Highton, and Mullin (2002b) have found that states that send sample ballots to registered voters – a relatively inexpensive way to provide information – had higher rates of voting than other states in the 2000 election, and that the effect was largely on less educated persons. However, their analysis is not an experimental design, so that it is possible that some or all of the effect reflects other unmeasured differences among states. Absent before/after evidence on voting in states that changed policies, or an actual experiment, we cannot be sure that this relation is causal or as large as estimated in the cross section comparison.

CPS and NES data sets show that unionization affects whether someone votes in the US. Union members have about a 4 percentage point higher probability of voting than nonmembers (Freeman, 2003), presumably in part because of union efforts to mobilize their members.²¹ This suggests that the decline of union density has contributed to the downward trend in density. Radcliff and Davis (2000) report that higher levels of union density are associated with higher turnout across countries and among US states. They link this to attitudes and party ideologies. Hill and Leighly (1996) find modest support for the proposition that the competitiveness of political races and policies of the Democratic party in a state affect lower-class voter turnout, but they do not have unionization in their regressions. Higher union density in a state may both induce voters toward liberal Democratic views and produce more competitive races.

That mobilization can increase turnout does not mean that the decline in turnout is due to a decline in mobilization. The NES reported a rise in political contacts in the 2000 election, in which turnout was low for a close election (Banducci and Karp, 2001). Since much of the contact occurred through direct marketing rather than door to door canvassing and was targeted at likely voters, this evidence could be consistent with an explanation of falling turnout in terms of less face to face canvassing of voters. Still, it “questions the conclusion that the lack of party mobilization is to blame (for the fall in turnout)” (Banducci and Karp, 2001, p 24)

High turnout, the Puerto Rican way

There is an important but little known anomaly to the pattern of low turnout in the US. One part of the country votes at high rates. This is Puerto Rico. On mainland US, Puerto Ricans have a low rate of voting, consistent with their being a disadvantaged minority group. In 1996, 47% of persons who were born in Puerto Rico but resided in the US reported that they voted in the Presidential election on the CPS - a figure noticeably below the 64% of all Americans who reported voting in that election on the CPS. Given self-reporting bias, perhaps 40-42% of the Puerto Rican born actually voted in the presidential election.²² But on the island Puerto Ricans have a high rate of voting. Throughout the 1990s, Puerto Rican turnout rates exceeded those for the US and for most other democracies.

Official Puerto Rican voting data show turnout rates that averaged 84% in the three general elections held from 1992 to 2000 and rates that were equally high in earlier years (http://eleccionespuertorico.org/home_en.html). But these rates compare the numbers of persons voting with the numbers of persons registered rather than with the voting age population.

To obtain valid comparison rates, I estimated the population of voting age in the 1990 and 2000 Censuses of Population for Puerto Rico, and then adjusted the turnout rates to be on comparable basis with the US. Exhibit 2 records my adjusted voter turnout rates for the six commonwealth wide elections held in Puerto Rico in 1992-2000. Because an average of 92% of persons of voting age were registered in 1990 and 2000 my adjustment still leaves Puerto Rico with an extremely high voting rate: 77% in General Elections – some 25 points above rates in the US presidential elections over the same period and nearly double the voting rate for Puerto Ricans residing in the US.²³ In addition, Puerto Rico has held various plebiscites and referendum on Sundays in non-General Election years. Exhibit 2 shows that turnout in these elections has also been high though it falls short of the turnout in the General Elections.

Why is voter turnout so much higher in Puerto Rico than in the US?

One reason is that Puerto Rico makes its general elections a holiday and treats the day as a special political event, with political parties mobilizing their supporters throughout the day. Since Puerto Ricans can register at the polling place, parties try to bring every single supporter to the polls, including those who may have let their registrations lapse. Votes on referenda and plebiscites in the off-Presidential/General Election years are held on Sundays, another non-working day. In the 1990s, the average turnout rate on Sundays in Puerto Rico was 64% – 13 percentage points less than on Tuesdays. This difference could mean that making voting day a dedicated holiday rather than a normal weekend day increases turnout. But it could also mean that Puerto Ricans are more involved in the Governors' races than in special plebiscites and referendum, even those may affect the political status of the island.

In any case, turnout is much higher in Puerto Rico than in the US. Given that differences in the cost of voting have modest impacts on turnout in the US, I interpret the high

turnout in Puerto Rico as reflecting more than the ease in voting on a holiday or weekend. The high turnout also reflects the intense mobilization of voters, which is itself easier to accomplish on weekends or holidays when the activists for political parties are available to get out the vote and when citizens may find it difficult to say that they are too busy to vote. The combination of mobilization and holiday voting offers the best explanation of the otherwise anomalously high turnout in Puerto Rico.

II. INEQUALITY AND CHANGES IN INEQUALITY IN TURNOUT

By inequality in turnout, I mean differences in rates of turnout between groups of voters from different socioeconomic groups. Virtually every study finds that persons with higher income, higher occupational standing, greater age, and more years of education have higher turnout rates than persons from lower status groups. The magnitude of the difference in voting by socioeconomic group is more difficult to determine, however. This is because the survey data that link turnout to individual characteristics is subject to measurement error. Many persons report that they vote on the NES and CPS surveys when they do not. Over reporting of voting differs, moreover, by demographic characteristics. The NES validates survey reports of voting by checking whether the respondents name is on a list of registered voters. Silver et al (1986) found that respondents most inclined to over report voting are highly educated persons -- those for whom the norm of voting is most salient. This biases upward the difference in voting by education and presumably has a similar impact on other measures of socioeconomic status. As the gap between NES turnout and official turnout has risen over time, analyses of the trend in inequality in voting based on NES reported votes could be erroneous. Self-reported voting on the CPS November supplements differs less from official turnout figures, making the over

reporting problem less severe. But self-reports of voting on the CPS have not been validated, so there is no simple way to estimate the bias in that data set.

By changes in inequality in voting, I mean differential changes in turnout among identified socioeconomic groups. Given that groups that have markedly different rates of voting, the metric by which one measures these changes can be important in determining whether or not inequality has risen. In assessing trends in inequality of voting, I rely largely on percentage point changes in turnout rates among groups rather than percentage changes in those rates or on the level of logistic or probit parameters.²⁴ With groups having equal rates of turnout, equal percentage point changes in turnout have no effect on the median voter on the relevant socioeconomic scale; whereas greater falls in turnout by one group will shift the distribution of voters, and thus the median, against that group. But with groups having different rates of turnout, even equal percentage point changes in turnout can affect the position of the median voter. A 10 percentage point drop in turnout for a group with a small turnout removes relatively more persons from that group from the electorate than a 10 percentage point drop in turnout from a group with a high turnout. This shifts the electorate toward the high turnout group, which means toward the more advantaged given their higher turnout rate.²⁵

Metric aside, the fact that higher socioeconomic groups have higher turnout than lower socioeconomic groups implies that *large* increases in turnout necessarily reduce inequality in turnout, while large decreases in turnout raise inequality. If 90% of the upper half of the population vote and 50% of the lower half of the population vote, giving an aggregate turnout of 70%, an increase in aggregate turnout of 20 points would have to come disproportionately from the lower half since the upper half cannot increase its turnout beyond 100%. A 20 point increase in aggregate turnout would the gap in turnout for the two groups from 40 percentage points to a

minimum of 20 percentage points.²⁶ That large increases in turnout asymptotically reduce inequality in voting does not, however, mean that modest increases in turnout will do the same. With turnout on the order of 50%-60%, modest changes in turnout, say 5-10 points, could have no effect on inequality in voting or could increase it.

There is considerable disagreement about whether inequality in voting by socioeconomic group has changed over time. Analysts using different data sets, covering different time periods, and using different metrics or methodologies have reached different conclusions. Reiter (1979) and Rosenstone and Hansen (1993) find a trend in inequality in NES data. They use income and education to measure socioeconomic status. Burnham(1987) found a similar trend in CPS data using occupations to measure status. But Teixeira (1992) argued that any trend in the CPS is modest. Leighly and Nagler (L&N) (1992, p. 734) make the strongest case that inequality of voting by socioeconomic group has not increased. Analyzing CPS and NES data for elections from the 1960s through the 1980s, they concluded that “class bias has not increased since 1964”.

My reading of the evidence is that inequality in voting has increased. Since L&N’s study is the most substantive on the other side of this debate, I examine carefully the CPS and NES data that led them to their conclusion. In addition, I assess the link between various measures of socioeconomic status and voting in the CPS in the 1990s. I find that L&N’s evidence supports the claim that inequality in voting has increased, contrary to their interpretation of it. The drop in turnout has occurred largely among the less educated, lower income, less skilled, and younger persons, increasing the inequality in voting among those groups.

For starters, table 4 records the rate of voting by persons in different age and education groups, as tabulated by the US Bureau of Census. The age data show a huge rise in inequality of

voting by age from 1972 (when 18-20 year olds could first vote) to 2000. Turnout for 18-20 year olds and 21-24 year olds falls from 48% and 51% in 1972 to just 28% and 24% respectively in 2000. The third group with a large drop in turnout are 25-34 year olds, where turnout drops by 16 percentage points. By contrast, the turnout rate of persons aged 65 and over rose in this period; and the turnout rate of 45-64 year olds fell relatively modestly. Since older persons had higher voting rates in the beginning, the table shows that inequality in turnout grew massively along this dimension.

Table 4 also records turnout rates by education from 1964 to 2000. Turnout rates fall for all education groups, but the percentage point drops are larger for the less educated groups: a 32 point drop for persons with less than 9 years of schooling versus a 16 point drop for persons with four years of college or more. But this is a less meaningful comparison than might at first appear to be the case. The problem is that the proportion of people in specific education groups has changed as the population became more educated. In 1964 approximately 30% of persons of voting age had less than 9 years of schooling and just 8 percent had four or more years of college. In 2000, just 12% of persons of voting age had less than 9 years of schooling and 23% had four or more years of college.²⁷ The greater decline in turnout among persons with less than 9 years of schooling could reflect the fact that in 2000 that education group falls lower in the distribution of the population by education. Perhaps the bottom 30% of the voting age population had a much smaller fall in turnout. Similarly, perhaps the changing proportion of the population in the college graduate group may underlie some of the change in turnout there.

To see whether voting by persons in similar positions in the percentile distribution of education also reveals rising inequality, I estimated the voting rate for the bottom 30% of the voting age population in 2000 by taking a weighted average of the rates for persons with less

than nine years of education, 9-12 years, and high school graduates. The weights reflected the contribution of each group to the bottom 30%, and these were multiplied by each group's reported turnout rate. By my calculation the lower 30% of persons by years of schooling in 2000 had an average turnout of 39.2%. Thus I estimate that at the bottom of the education distribution, turnout fell from 59.0% to 39.2% – a 19.8 percentage point drop. This is markedly lower than the 32.2 percentage point drop among persons with less than nine years of schooling shown in table 4, but is still huge. I did a comparable calculation for persons with college degrees. Since college graduates made up 23% of the voting age population in 2000, I estimated the turnout rate of persons in the upper 23% of the education distribution in 1964. By my calculation, 82.5% of persons in the upper 23% of the education distribution voted in 1964. The decline in voting of persons at the top of education distribution is thus 10.5 percentage points (72.0% - 82.5%), which is smaller than the 15.5 percentage point drop shown in table 4. Thus, looking at the voting rate of persons at similar points in the distribution by years of schooling, I estimate that there was a 10.5 percentage point drop for highly educated persons compared to a 19.8 percentage point drop for less educated persons. The rise in inequality among persons at comparable positions in the education distribution was thus huge, though smaller than the rise in inequality among persons with a fixed number of years of schooling.

I turn next to the L&N (1992) analysis of the CPS turnout statistics. Table 5, which is taken from their main table, measures socioeconomic status by quintile of income, by three occupation groupings, and by level of education from 1964 to 1988. The top line of the table shows that turnout was stable between 1964 and 1968, fell noticeably from 1968 to 1972 (a drop of 5.4 points); fell moderately from 1972 to 1976 (2.3 points), was stable from 1976 to 1984, and then dropped from 1984 to 1988. Overall, turnout trended downward over the period by 10.4

points. Each measure of socioeconomic status show greater falls in turnout for lower status than for higher status groups. The smallest increase in inequality occurs among income classes, where turnout for the highest income group dropped by 8.3 percentage points compared to an 11.0 drop for the lowest income group – a 2.7 percentage point difference that they note is “only a slight increase in socioeconomic class bias” (p.728). The occupation and education measures show much greater increases in inequality, consistent the other studies cited above. The gap between the white collar workers, who have the highest voting rate, and blue collar workers, who have the lowest rate, trends upward from 16.5 percentage points in 1964 to 24.0 percentage points in 1988. The differential between college graduates and high school graduates rises from 10.5 points in 1968 to 19.2 points in 1988. All of this evidence shows that there has been a change in class bias in the electorate since 1964.

L& N stress the pattern of voting among persons differentiated by income quintile. If the CPS data gave sufficiently accurate income information to sort the population into income quintiles correctly, this would indeed be a highly desirable way to measure inequality in turnout. Unfortunately, however, as Table 6 shows, the proportion of persons in the CPS income quintiles has varied substantially over the years, rather than being 20% in each year. It is difficult to know what to make of changes in turnout by quintiles when in 1964 28% of the sample is in the third income quintile, whereas in 1988, just 19% is in that quintile. The reason for the varying proportion of persons in the “quintiles” is that the CPS does not ask for actual income but instead categorizes families into a few income classes. L& N also calculate a Gini coefficients for inequality in voters by income. Their Ginis show an increase in voting inequality from 1972 to 1988. In a footnote they report Gini coefficients for 1964 and 1968 but exclude them from their main analysis because they are based on fewer categories. But this excludes the 1968-1972

period when turnout fell the most. Adding their computed Gini coefficients to table 5 shows a large trend increase in the Gini coefficient for voters from 0.0856 to .1112.²⁸ Given the problem of varying shares of eligible voters in income quintiles, these data are weak indicators of actual changes in turnout by income, but they show rising class bias in voting.

The NES does not suffer from the problem of varying sizes of quintiles, and the voting data for the NES show a strong rise in inequality by income class. L&N point out that this could be due to trends in misreporting of voting by income and occupation²⁹. Since the NES contains estimates of validated votes, I use L&Ns data to see if this problem invalidate the findings that inequality in voting increased. Their multivariate probit analysis of voting in the NES uses validated voting data (their table 5). They estimate how education and income quintile (and other factors) affect turnout in the elections of 1964, 1976, 1980, 1984, and 1988. They obtain coefficients on education and income that vary quite a bit among the years but which show no strong trend and conclude that there is no increase in inequality. But similar coefficients in a nonlinear form of this type do not imply that a variable has the same **percentage point** effect for groups in years when voting turnout changes. The impact of a change in a variable is largest when the voting rate is around 50% and smaller when the voting rate is very high or very low. To illustrate this point, consider the following logistic model (written in log odds ratio form):

(4) $\ln P/(1-P) = a + b X$, where P is the probability of voting and X is some measure of socio-economic status

Differentiating to find the impact of a change in socio-economic status, we see that

$$(5) \frac{dP}{dX} = b(P)(1-P) \text{ or in percentage terms } \frac{dP}{dX} / P = b (1-P)$$

The impact of X on the inequality of voting necessarily varies with turnout. Indeed, stable coefficients in a nonlinear form of this type imply increasing inequality as turnout falls. Thus, I

interpret their stable coefficients in a period when turnout was falling as evidence for greater inequality in voting among the relevant groups rather than as evidence for no change in inequality.³⁰

Consistent with my reading of the data, Darmofal (1999)'s analysis of the NES validated voting sample, summarized in Table 7, shows that inequality in voting increased in that sample as it does in the total sample from 1964 to 1988. Panel A shows a 14 point drop in turnout among low income groups compared to a 4.8 point drop in turnout among high income groups. The decline in turnout is not monotonic across the income groups, but the pattern moves the median voter up the income distribution. Panel B of Table 7 shows a similar pattern of greater drops in validated turnout among persons with 12 years of schooling or 12 or less years of schooling than for those with some college or more.

Since the decline in turnout has varied over time, I have also contrasted changes in the inequality of voting in periods when turnout fell substantially to inequality of voting in periods when turnout was roughly stable. If turnout affects inequality in voting, inequality in turnout should rise most when turnout falls. The following tabulation of data from L&N, which organizes the periods by the change in turnout, shows such a relation between changes in turnout and changes in their measures of inequality:

period	change in turnout	change in Gini
1968-72	-5.4	.0164
1984-88	-3.0	.0127
1972-76	-2.3	.0043
1976-80	-0.3	.0013
1864-68	-0.2	-.0086

Finally, using data from the NES, 1948-98, Devroye (2001) has found that in states with low registration levels, income has a greater positive effect on voting than in states with high registration levels. This implies that lower registration (and presumably) turnout is associated with greater income bias in the electorate. He finds similar results in an analysis of the link between voting and income and voter registration and turnout in CPS files for 1994-1998.

In sum, the debate over the trend in inequality in voting and its relation to aggregate turnout and other factors has illuminated the complexities in making inferences from the relevant data, but the evidence supports the proposition that inequality among voters has risen.

III. CONCLUSION

“A rational man decides to vote just as he makes all other decisions: if the return outweighs the cost, he votes: if not, he abstains” (Downs, 1957, p 260)

Economists are surprised that anyone votes at all. Since no individual vote changes any election, why should a rational man vote? The cost of voting may be slight for many people – a few minutes early in the morning or after work or during the day at the polling place or even less in states with absentee ballots, voting by mail, voting at polling places before election day – but if there are no benefits, why bother? That many people vote implies that people do see benefits, perhaps non-pecuniary benefits, but benefits nonetheless.³¹ If we accept this, economic analysis has a more sensible message than “what me, vote?” Per the Downs quotation, it suggests that the decision to vote depends on weighing potential benefits whatever their form and the costs to voting. In the context of the median voter model, moreover, an individual’s vote could shift the median by enough to justify the small time cost of voting. In a world where politicians respond to the median voter the question isn’t “will my vote determine the winner?” but “will my vote

move the winner enough closer to my position to justify my casting the ballot?”

Since the administrative cost of voting has declined in the US, the downward trend in turnout would seem to suggest that citizens see fewer benefits from voting. They could see fewer benefits because parties move sufficiently close to the median voter to leave little space between them, or because events make campaign promises irrelevant, or because governments have only a limited range of variation in policies. If this was the case, and if voters were right, low and unequal turnout would have little impact on policies.

But increases in inequality of voting can shift the socioeconomic position of the median voter. If the voting distribution is skewed in favor of upper income persons, the median voter will be higher in the distribution, with policy more favorable to them. I estimate that the increased inequality in US voting from 1964 to 2000 raised the family income of the median voter from the 53rd percentile of the income distribution in 1964 to the 59th percentile of the income distribution in 2000. Some analysts argue that the lower voting rate and higher income status of the median voter in the US than in EU countries explains why the US has a smaller welfare state and does less income redistribution than the EU. Consistent with this, Hill and Leighly (1992) show that US states with greater inequality in voting spend less on welfare than states with less inequality in voting.³² On the other hand, several studies suggest that there is little attitudinal difference between voters and non-voters (Wolfinger and Rosenstone, 1980; Verba, Schlozman and Brady, 1996), so that increases in turnout would not have great effects on policy outcomes. While there is evidence in Europe that high turnouts improve the electoral chances of left parties (Pacek and Radcliff, 1985), the impact of turnout on party performance in the US is less clear, presumably because there are so many nonvoters that higher turnout could come from almost any group. At best, higher turnout seems to favor marginally the

Democrats.³³ Over the long run, however, the level of turnout is unlikely to affect party performance, since both parties will adjust their policies toward the new median.

To sum up, my review of what we know about turnout shows that the bulk of the evidence supports the claims that turnout has fallen in the US, albeit by a magnitude that varies depending on how one adjusts for the rising number of ineligible voters, and that inequality in voting among social groups has increased. More likely than not, these changes have had some impact on government decisions and activities, though research has not conclusively demonstrated the magnitude and nature of that impact.

Table 1: Regression Coefficients and Standard Errors for Alternative Models of the Impact of Ineligible Voters on Turnout, 1948-2000

1948 to 2000	Const	Trend (x100)	Pres Year	Ln Eligible/VAP	N	R ²
1. Ln (Voters / Voting Age Population)	-.78	-.81 (.18)	.30 (.03)		27	.86
2. Ln (Voters / Eligible Population)	-.79	-.48 (.09)	.30 (.03)		27	.86
3. Ln Voters / Voting Age Population	-.79	-.27 (.30)	.30 (.03)	1.66 (.93)	27	.87
1972 to 1988						
4. Ln Voters / Voting Age Population	-.88	-.45 (.21)	.33 (.02)		15	.96
5. Ln Voters / Eligible Population	-.93	.07 (.25)	.33 (.02)		15	.95
6. Ln Voters / Voting Age Population	-.85	-.85 (.45)	.33 (.02)	-.78 (.77)	15	.97

SOURCE:

Based on data from McDonald and Popkin (2001), see Appendix A.

NOTES:

Eligible population is defined as voting age population, minus the number of noncitizens of voting age, minus the number of ineligible felons, plus the estimated overseas voting eligible population. Pres year is dummy 1 for every presidential year election

Table 2: Reported Reasons for Not Voting, Among Persons Registered to Vote, 1980-1998

	1980	1996	1998	2000
Too Busy	7.6	21.5	34.9	20.9
Not Interested	11.2	16.6	12.7	12.2
Ill / Disabled	17.1	14.9	11.1	14.8
Dislike Candidates	16.0	13.0	5.5	7.7
Out of Town	12.6	11.1	8.3	10.2
No Transportation	4.1	4.3	1.8	2.4
All Else	17.2	15.9	18.5	23.7
DK / Refused	14.1	2.7	7.1	7.5

SOURCE:

US Department of Commerce, "Voting and Registration in the Election of November 1996", *Current Population Reports*, Series P20-504 July 1998.

US Department of Commerce, "Voting and Registration in the Election of November 1998," *Current Population Reports*, Series P20-523RV August 2000.

US Department of Commerce, "Voting and Registration in the Election of November 2000." *Current Population Reports*, series P20, no.542 February 2002.

Table 3: Turnout Rates of Parents and Non-parents, 1956 - 1996

	Parents	Non-parents	Difference
1956	69	78	-9
1960	78	81	-3
1964	77	78	-1
1968	75	76	-1
1978	52	57	-5
1980	67	74	-7
1982	57	63	-6
1984	70	76	-6
1986	45	58	-13
1988	64	74	-10
1990	37	53	-16
1992	75	78	-3
1996	64	76	-12

SOURCE:

Calculated by Ruy Teixeira using survey data from National Election Studies.

Table 4: The Change in Voter Turnout, by age, 1972-2000 and by education, 1964-2000

Age Group	Turnout		
	1972	2000	Change
18-20	48.3	28.4	-19.9
21-24	50.7	24.2	-26.5
25-34	59.7	43.7	-16.0
35-44	66.3	56.0	-10.3
45-64	70.8	64.1	-6.7
65+	63.5	67.6	4.1

Education Group	Turnout		
	1964	2000	Change
Less than 9	59.0	26.8	-32.2
9-11	65.4	33.6	-21.8
HSG	76.1	49.4	-26.7
C 1-3	82.3	60.3	-22.0
C 4 or more	87.5	72.0	-15.5

SOURCE:

US Department of Commerce, *Statistical Abstract 1989*, table 432 and *Statistical Abstract 2002*, table 401; and Voting and Registration, historical time series table, available at: <http://www.census.gov/population/socdemo/voting/tabA-2.pdf>.

Table 5: Turnout by Demographic Characteristics (1964-88, Current Population Surveys)

Demographic Group	1964	1968	1972	1976	1980	1984	1988
Total	70.5	70.3	64.9	62.6	62.3	63.1	60.1
Income							
1 (Low)	53.7	57.5	50.7	47.4	47.7	47.8	42.7
2	63.1	67	55.9	55.1	54.2	57.5	52.2
3	72.8	74.2	63.3	62.4	60.5	63.5	58.9
4	78.7	79.7	71.6	69.9	68.9	70.3	67.5
5 (High)	85.2	85.4	80.7	78.4	76.1	77.6	76.9
Gini Coefficient	-0.09	-0.08	0.094	0.098	0.1	0.099	0.1112
Occupation							
Service Worker	65.9	62.7	58.6	52.8	51.3	52.9	47.2
Blue-collar	65.6	62.3	54.2	49.8	48	49.4	44.5
White-collar	82.1	79.8	76.4	72.1	70.9	70.8	68.5
Education							
No high school	59.4	56.4	48.9	46.8	44.5	45.1	38.4
Some high school	65.9	63.1	53.7	50.1	48.4	47	43.3
High school grad	76.5	74.2	66.1	62	61	61	56.6
Some college	82.6	80.2	76	70.1	69.5	69.9	66.4
College grad	–	84.7	83.6	81.1	80.1	79.3	75.8
Post-college	88.2	86.9	87.4	85.2	84.9	84.4	83.9

SOURCE: Leighly and Nagler (1992, Table 1 and Endnote 10).

NOTE:

Table entries are the reported turnout rates for each demographic category.

*For 1964 *college grad* and *post-college* are only available in combined form.

Table 6: Size of Income Quintiles: Percentage of Eligible Voters in Each Group

Income	1964	1968	1972	1976	1980	1984	1988
Current Population Surveys							
1 (Low)	19	27	18	17	20	22	17
2	20	24	22	23	15	21	22
3	28	19	15	24	25	16	19
4	16	20	25	15	14	24	25
5 (High)	18	10	19	21	26	17	18

SOURCE: Leighly and Nagler (1992, Table A-1).

Table 7: Turnout and Changes in Turnout in Validated NES data

PART A: Turnout by Income Quintile, 1964-1988, Validated Turnout (NES)						
Income Quintile		1976	1980	1984	1988	Turnout Change 1964-1988 in %
1 (Low)	53.7 %	47	45.8	45.8	39.7	-14
2	56.4	60.6	53.8	61.8	49.4	-7
3	62	63.4	57.7	63.2	58.6	3.4
4	76.4	66.7	68.4	68.4	68.1	8.3
5 (High)	78.5	79.8	67.6	80	73.7	4.8

PART B: Turnout by Education Level, 1964-1988, Validated Turnout (NES)						
	1964	1976	1980	1984	1988	Turnout Change 1964-1988 in %
Years of Education						
Less than 12 years	57.4 %	52.2	45	49.6	43	-14.4
12 years	68.1	63.8	54.8	58.6	52.7	-15.4
More than 12 years	76.9	73.9	70.1	74.2	72.1	-4.8

SOURCE: Darmofal, David. 1999. "Socioeconomic Bias in Turnout Decline: Do the Voters Remain the Same?" presented at APSA meetings, Atlanta (September).

Appendix Table A: Numbers of Persons in Groups Associated with National Turnout Rates

Year	Vote for Highest Office (1000s)	Voting-Age Population (1000s)	Turnout Rate VAP (%)	Non-citizens (100s)	Ineligible Felons (1000s)	Overseas VEP (1000s)	Turnout Rate VEP (%)
1948	48833	95573	51.1	2198	348	440	52.2
1950	41984	98134	42.8	1880	372	391	43.6
1952	61552	99929	61.6	1899	379	1131	62.3
1954	43854	102075	43.0	1939	411	987	43.5
1956	62027	104515	59.3	1986	428	981	60.2
1958	47203	106447	44.3	2129	464	951	45.0
1960	68838	109672	62.8	2193	481	912	63.8
1962	53141	112952	47.0	2259	491	1113	47.7
1964	70645	114090	61.9	2282	478	1212	62.8
1966	56188	116638	48.2	2363	448	1621	48.7
1968	73213	120285	60.9	2766	421	1856	61.5
1970	58014	124498	46.6	3148	443	1765	47.3
1972	77719	140777	55.2	3640	443	1581	56.2
1974	55944	146338	38.2	4148	496	1510	39.1
1976	81556	152308	53.5	4558	588	1562	54.8
1978	58918	155609	37.9	5780	629	1753	39.0
1980	86515	163945	52.8	6827	803	1803	54.7
1982	67616	166724	40.6	10554	932	1982	43.0
1984	92653	173995	53.3	13252	1153	2361	57.2
1986	64991	177922	36.5	12223	1308	2216	39.0
1988	91595	181956	50.3	13942	1533	2527	54.2
1990	67859	185888	36.5	16297	1845	2659	39.8
1992	104405	189687	55.0	17826	2117	2418	60.6
1994	75106	193163	38.9	13205	2365	2229	41.8
1996	96263	196928	48.9	13948	2545	2499	52.6
1998	72537	200929	36.1	15070	2822	2937	39.0
2000	105326	205813	51.2	16500	2851	3008	55.6

SOURCE:

Taken from table 1 of Michael P. McDonald and Samuel L. Popkin, "The Myth of the Vanishing Voter," *American Political Science Review*, Vol 95:4 (December 2001), p 4. See:

http://elections.gmu.edu/APSR%20McDonald%20and_Popkin_2001.pdf.

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Endnotes

1. IDEA, 1997, p. 21. The US and Canadian comparison are for 1945 to 1997, as reported in IDEA.
2. In addition, there are diverse irregular surveys such as exit polls, focus group interviews, and general surveys such as NORC's General Social Survey, which provide information on who votes.
3. Silver, Anderson, and Abramson, 1986
4. Burden, 2000, figure 2
5. M. McDonald "An External Validity Check of the National Election Study's Turnout Rate", processed, June 20, 2001
6. Caltech, MIT Report of the Caltech-MIT Voting Technology Project
Voting - What Is, What Could Be July 2001 www.vote.caltech.edu/Reports
7. IDEA, figure 36
8. Wolfinger and Rosenstone; Leighly and Nagler, 1992
9. Verba, presentation 1999
10. The median voter model is the simplest model of democratic decision-making. According to this model, politicians who seek election pay close attention to the preferences of the person in the middle of the distribution of preferences – the median. Array voters by their attitudes toward government policies on a right to left scale. Candidates from the right and candidates from left will move to the middle to gain the votes. To win they need 50+% of the votes and thus must appeal to the median voter (Riker, 1962).
11. Radcliff and Davis
12. IDEA
13. Highton and Wolfinger, 1995
14. Marvin Wattenberg, *Where Have All the Voters Gone?* (Harvard University Press, Cambridge, Mass, 2002).
15. In addition, there are potential citizen voters living abroad. But their number is dwarfed by the number of non-citizens and persons incarcerated or deprived of the franchise because of past incarceration. M&P deal with this group as well.
16. The range of estimates for 1996 across several studies is about 3 percentage points. Burden notes that taking account of this bias explains only a small proportion of the difference in turnout in the NES and in official counts.

17. http://www.usdoj.gov/crt/voting/nvra/activ_nvra.htm
18. Crocker, 1990, Wolfinger and Rosenstone, 1980, Teixeira, 1992, Calvert and Gilchrist, 1993
19. Knack, tables 2 and 3
20. p 4 from Internet download
21. Leighly and Nagler, 1992; Freeman, 2003
22. This calculation multiplies the ratio of the turnout rate in administrative data to the turnout ratio on the CPS for all voters by the turnout rate on the CPS for Puerto Ricans.
23. In 2000, there were approximately 2,730,000 persons of voting age in Puerto Rico (see “IDB Summary Demographic Data for Puerto Rico” at: www.census.gov/cgi-bin/ipc/idbsum?cty=RQ) In 1990 Puerto Rico had approximately 2,330,000 persons of voting age (welcome.topuertorico.org/censo, Summary Population and Housing Characteristics, Table 1: welcome.topuertorico.org/censo/age/shtml). In 2000 2,447,000 persons were registered to vote, giving a registration rate of 89.6%.; Puerto Rico had no elections in 1990, so I average the numbers registered in 1988 and 2002 to obtain an estimate of 2,190,100 registrants for comparison with the 1990 population – a rate of 93.9 percent. Averaging the 1990 and 2000 estimates, I come up with a 91.8% registration rate for Puerto Rico.
24. A 10 percentage point drop in voting by a group with a low rate of voting is a larger percentage drop than a 10 percentage point drop in voting by a group with a high rate of voting. In a model of voting using individual data that makes the probability of voting depend on independent variables with a logistic or probit form, changes in a variable will have a bigger impact on the proportion voting depending on groups with a voting rate around 50% than on groups with a voting rate much lower or higher than that.
25. Say the population has 10 wealthy people and 100 poor people. Initially all the wealthy vote (10) and ½ of the poor vote (50). Then 1/6th of the electorate are wealthy people. A 50 percentage point reduction in the turnout of both groups leaves 5 wealthy voters and no poor voters. The example is extreme but the principle holds
26. Assume that 100% of the upper group voted. Then to get the 20 point increase, the lower group would have to vote at a rate of 80% – a huge 30 point rise for them.
27. Estimates of the distribution of the population by education are from US Bureau of the Census, Educational Attainment CPS March 2000 and Educational Attainment: March 1964 (P20-138). <http://www.census.gov/population/www/socdemo/educ-attn.html>
28. The problem of limited and inaccurate quintile groupings in the NES suggests the value of estimating incomes from detailed occupation codes for working people in the November CPS files, and use this to compute inequality measures with thicker income measures. I have not yet done this.

29. Their table 3 shows a large drop in misreporting for both high and low occupation and income groups.

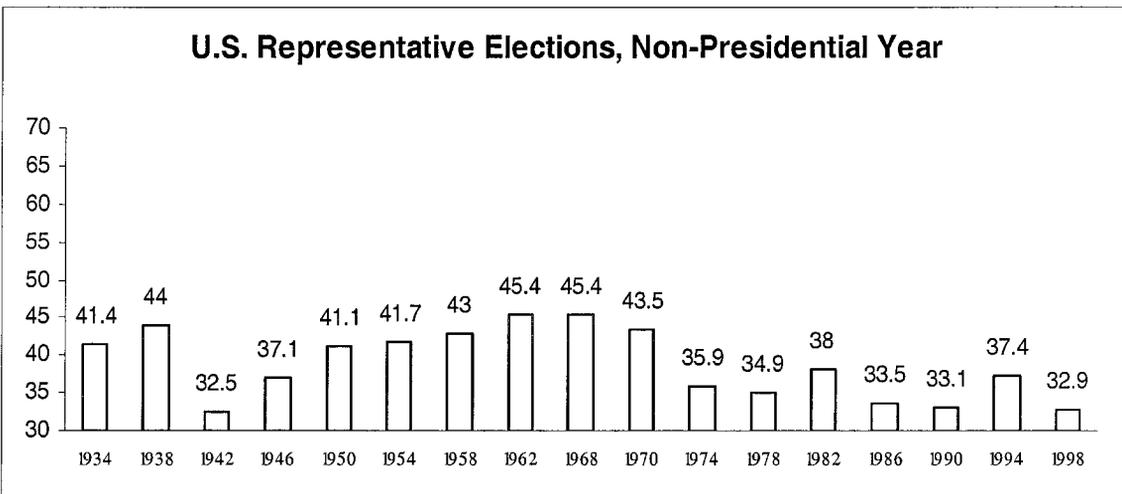
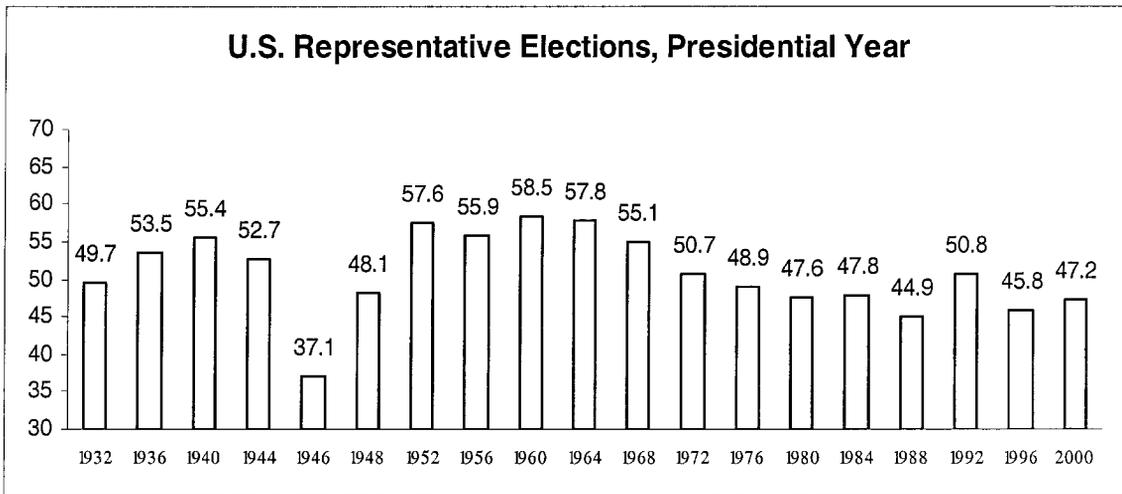
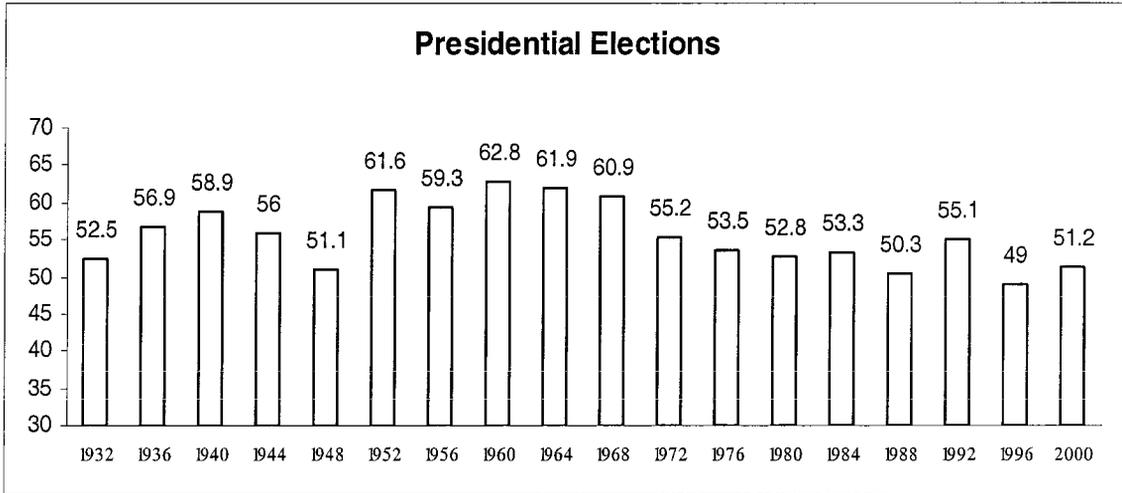
30. I read Shields and Goidel's "cross validation" of Leighly and Nagler as suffering from similar problems. Their estimated logit coefficients on education show strongly rising inequality in voting in both their NES and CPS calculations. Since Shields and Goidel do not record the proportion of people in their income quintiles, I do not know if that is a problem with their income calculations

31. There are many other areas in which people participate despite having only a miniscule chance of making a gain, such as lotteries. And people root for teams, presumably so that they gain greater pleasure from victory than if they simply watched the sport.

32. Hill, Leighly, and Hinton-Andersson's extension of this analysis shows similar results See Ringquist, Hill, Leighly, Hinton-Andersson as well.

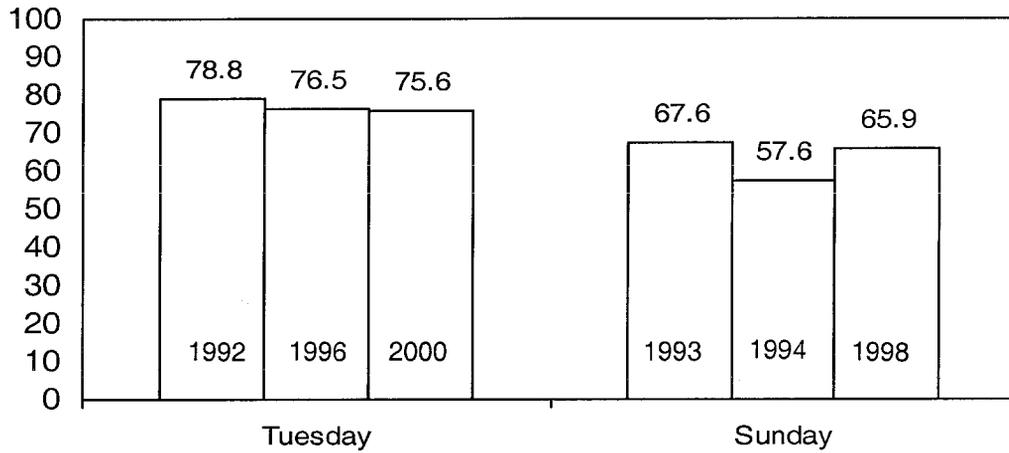
33. Others argue that any relation that existed historically has disappeared (Nagel and McNulty).

Exhibit 1: Percentage of Voting Age Population Participation in Presidential and Congressional Elections: 1932 to 1996



SOURCE: US Bureau of the Census, *Statistical Abstract 2002*, table 395

Exhibit 2: Change in the Percentages of Voter Turnout in Puerto Rico



These estimates are obtained by adjusting the reported turnout figures, based on registered voters, into turnouts based on voting age population, by multiplying the figures by 92%, the average of the registration rates for 1990 and 2000, as described in the text.