What, Me Vote? *

PRELIMINARY AND INCOMPLETE
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June 2001 revision

Richard B. Freeman

* I have benefitted from discussion with Dan Devroye and for comments by Christopher Jencks.

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Voting turnout, measured by the number of persons voting from the population of voting age, is lower in the US than in other advanced democracies, including the US's nearest neighbor, Canada. In all elections from 1945 to 1997, the US averaged 48.3% turnout while Canada averaged a 68.4% turnout relative to the voting age population. In the 2000 Presidential election, just over half of the voting age population voted (~ 51.4%). On a world scale, the US ranks 138th in turnout among countries that hold elections (IDEA, 1997, p. 21) -- far below every other advanced democracy save for Switzerland (in 137th position). Turnout is lower than it was in 1960, when President Kennedy appointed a commission to study the "low" turnout then. Exhibit 1 shows that turnout has trended down for both presidential and congressional elections since the 1930s, albeit not continuously, despite diverse policy and regulatory changes that have made it easier for citizens to vote.

There are three big issues regarding turnout for elections in the US:

The reasons for the fall in turnout. What explains the low and declining turnout? What institutional features of the electoral process affect turnout?.

Inequality in turnout by socioeconomic status. Does low or declining turnover skew the voting population toward higher education, income, occupation groups?

The impact of turnout on policy outcomes. Does a skewed distribution of voting affect government policies in favor of the higher turnout groups? Does low turnout degrade the democratic process?

This paper reviews what we know about these issues. Analysts who examine turnout use three main data sources: the National Election Studies (NES); the November voting supplement to

the Current Population Survey (CPS); and administrative counts of actual voting for aggregate or ecological analysis. In addition, they supplement these data with diverse irregular surveys such as exit polls, focus group interviews and the like. The NES and CPS provide self-reporting voting data on individuals. They record higher turnout than actual vote counts and show differences in patterns from each other and from the administrative counts (Burden). One reason for the discrepancy is that some people report casting ballots when they did not do so (Silver, Anderson, and Abramson, 1986). Another is that surveys disproportionately undercount low turnout groups, with the problem in the NES seeming to grow over time for Presidential elections (Burden, figure 2).

The major findings of this review are:

1. Turnout in the US is low for several reasons: the country has a large population of non-citizen immigrants who cannot legally vote; the cost of voting has increased due to increased time demands, particularly on parents with low incomes; and possibly because partisanship and belief in the efficacy of politics has fallen.

2. Institutional changes that reduce modestly the cost of voting have modest effects on turnout. Shortening the time between the end of registration and election day raises turnout slightly, laws that make it easier for citizens to get absentee ballots raise turnout by 1-2 percentage points; motor voter registration may also raise turnout by 2 or so points.

3. Larger institutional differences produce substantially different levels of turnout. Puerto Rico makes it's general election in presidential election years a holiday. Turnout is 35 percentage points higher than in the US. Puerto Rico votes on Sundays in off-year elections and has a 35 percentage point higher turnout than the US. Turnout is 15 points higher on the holiday Tuesday than on election Sunday.

4 Large increases in turnout reduce inequality in voting by socioeconomic group because higher income groups have less scope to raise turnout rates than low income groups. But even modest increases in turnout reduce inequality in voting.

5. While voters and non-voters have reasonably similar attitudes on many issues differences in turnout of lower income citizens does seem to affect the level of transfers to the poor. Since parties respond to voters, increased turnout will not change the balance between the parties over the long run, but it should make both parties more responsive to lower income citizens.

I. MAGNITUDE OF TURNOUT

As noted, turnout in the US for elections is low by international standards. Indeed, with democracies averaging 73% or so in turnout (IDEA, figure 36), even in its highest turnout years proportionately fewer persons of voting age cast the ballot in the US than in other advanced countries.

Turnout in the US and in other countries varies by socioeconomic group. Better educated, higher paid, and older citizens invariably have higher turnout rates than others (Wolfinger and Rosenstone; Leighly and Nagler, 1992). Differences in turnout rates across countries occur largely because the voting rates of the less advantaged part of the population differ (Verba, presentation 1999). The low turnout of lower income persons in the US than elsewhere means that the median voter is higher in the social strata in the US than in other democracies.

Cross-country comparisons suggest three reasons for low turnout in the bottom parts of the US distribution: the weakness of labor in the US compared to other countries (Radcliff and Davis); the first past the post two party system, which elicits smaller turnouts than proportional representation systems of voting, and the congressional/presidential system, which elicits smaller

turnouts than parliamentary systems (IDEA). In addition, institutional features of the voting process have historically 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 (Highton and Wolfinger, 1995). It has never mandated voting, say by fining those who fail to vote. (Lipjhart, 1997)

Turnout in the US has fallen noticeably in the latter part of the 20th century. Exhibit 1 shows that since the 1950s the "official" administrative turnout rate has declined in both congressional and presidential election years. The numerator in the statistic is the number of persons who vote for the highest office in each year. The denominator is the population of voting age, which changed in 1972 when the franchise was extended to 18-20 year olds (though this does not explain the bulk of the drop in turnout in that year). While there is variation over time – turnout was particularly low in the 1948 election and rose in the 1992 campaign when Ross Perot ran (and was a bit higher in 2000 than in 1996) – the general downward trend in turnout since the 1950s is clear. Since restrictions on voting by blacks in the South declined, particularly after the 1965 Voting Rights Act, one would have expected the opposite. Hence, the question, why has voting turnout fallen?

the role of demography

Analysts have examined whether demographic changes contributed to the decline in turnout. Since Americans have become better educated and older, improved their occupational status, and have higher family incomes, standard demographic factors predict that turnout would rise. But one important demographic factor has operated to reduce measured turnout in the 1980s and 1990s. 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 the 1990s, they make up about 7 % of the voting age population. In addition, the number of incarcerated persons, who cannot vote in most states, and ex-felons, who cannot vote in many states, has risen sharply.[1]

McDonald and Popkin (M&P) calculate an eligible citizens turnout rate by replacing the denominator in the Census turnout figures by an estimate of the number of citizens with the franchise. In the 1990s their estimated turnout rate for eligible voters only was some 4 percentage points higher than the reported turnout. Casper and Bass (1998) and Burden (1999) provide similar estimates for 1996.[2] In 1998 , the difference between the rate for the total population and the citizen population was about 3 percentage points. Since the post-1972 drop in turnout is approximately of similar magnitude, the implication is that most of the ensuing decline in the turnout rate is due to the increased proportion of non-citizens.

But estimates of the population of non-citizens are imperfect and subject to measurement error, which makes these calculations problematic. From 1966 to 1993, the Current Populatiion 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. From 1994 on the CPS asked directly "what is your citizenship status". But the CPS based figures s show considerable year to year variability that makes them at best crude estimates of the true number of citizens eligible to vote. M&P's table 1, which records their adjustments for turnout show a surprising 4.6 million

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[1] 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.

[2] 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.

drop in the number of non-citizens from 1992 to 1994. This odd drop must represent responses to the change in question – measurement error due to the new way the CPS posed the question about citizen status. There are also 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 we do not have survey data on the number of ex-prisoners unable to vote, and must guestimate this statistic. But I could find no "odd changes" in M&P's estimates here.

One way to summarize the effect of the growing number of persons of voting age not eligible to vote and on the estimated trend in turnout is to use a simple regression model that links turnout to the estimated proportion of the population who are/are not eligible to vote and to other factors. Let P be the population of voting age; V be the number of voters; C be the estimated number of citizens with the franchise; D be a dummy variable for whether the election is in a Presidential year, when turnout is higher than in mid-term elections, and let T be a trend counter. Then a natural way to assess how the rising proportion of non-voters affects the trend in turnout is to estimate three related equations:

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

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

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

Equation 1 is the base calculation, linking the proportion of the voting age population who vote to the trend counter and to whether the election is a presidential contest or not.. Equation (2) replaces the ratio of voters to the voting age population with the ratio of voters to the estimated population legally able to vote, ala M&P. The third equation relaxes the assumption, implicit in equation 2, that the adjustment for the population with the franchise has a unit impact on the official

turnout by introducing the share of the population who are citizens as an explanatory factor in the basic regression of turnout/voting age population on the trend and presidential year dummy variable. If model 2 is correct, the estimated coefficient d on the citizens share of the population in this equation will be 1. But if C/P is poorly measured, the coefficient may vary. Deviations in d from unity are thus a signal of measurement error in C/P.

Exhibit 2 presents estimates of these three equations for the US using the data in M&P, table 1. Line 1 gives a significant coefficient (x 100) on trend of -0.42, which translates roughly into 0.4 percentage points in turnout per year (ie from a 0.500 turnout to 0.496 in the next year) – or a drop of 2 percentage points per decade, given 5 elections in a decade. . Adjusting for the eligible population in the denominator in line 2 produces a smaller coefficient on trend (x 100) of -0.25, so that 1./3rd of the long period trend appears due to rising proportion of persons without the franchise. When the model is expanded to allow for potential error in measurement of the eligible population in line 3 shows, however, the estimated coefficient on the ln C/P term does not support the maintained hypothesis underlying the replacement of the voting age population with the eligible population. The coefficient on ln C/P is considerably above 1, suggesting that the term is picking up other factors, as well. The problem is that the proportion of non-citizens changes noticeably between 1980 and 1982 and then fluctuates, so that it can readily proxy for other factors that differentiate the post-1980 period from the pre-1980 period.

M&P's strongest claim is the rising proportion of non-citizens explains **all** of the drop in turnout from 1972 on. Their calculations indicate that, adjusted for the number of non-eligible persons of voting age, the drop in turnout from the 1970s through the 1990s was small and statistically insignificant. To examine this claim, I have estimated equations (1)-(3) for the period

1972-1998. These results are given in lines 4-6 of exhibit 2. The coefficient on trend in line 4 is much smaller than the comparable coefficient in line 1. This shows that the drop in the latter period was half again as large as that over the entire half century. Consistent with M&P, when I replace the voting age population with the estimated number of citizens eligible to vote over this period in line 5 the negative trend disappears. But because of the odd fluctuations in the estimated number of non-citizens following the Census change in definition, the coefficient on the eligible proportion of the population in line 6 becomes negative and significantly different from unity; and the coefficient on trend jumps to -0.52.

From these calculations, I conclude that, yes, it is important to take account of the rising share of non-citizens on turnout, but that measurement error in estimating the number of eligible citizens weakens the claim that all of the action in turnout patterns is in the denominator so that there is no turnout problem to explain, post 1972. But even if analysts were to accept the regression in line 5 and conclude that "true" turnout was constant post-1972, they would still have to explain the falling turnout pre-1972 and the constant turnout post that date. Since the distribution of the population shifted toward groups with a higher propensity to vote, the appropriate counter-factual for both periods is for a rising turnout (not a constant turnoutg). The puzzle of why turnout did not rise from the 1950s to the 1990s becomes more severe when we recognize that the US made it easier for citizens to register to vote and to vote when registered at various times throughout this half-century.

institutional determinants

Various states in the US made it easier to vote by: increasing the number of venues through which citizens can register, making absentee ballots easier to obtain, particularly for elderly citizens,

and by shortening the period between registering and voting. Analysts have examined the effect of these institutions on voting largely through comparisons of turnout in states made these changes with turnout in states that did not. This produces cross-section and in some cases longitudinal variation that can be used to infer the institutional determinants of voting. Here is what extant studies have found:

Making registration easier affects turnout modestly. There are two ways to make it easier for citizens to register to vote. States can allow citizens to register to vote closer to election day than others or even on election day as Minnesota does. Cross section comparisons of turnout in states with easier forms of registration show that they have considerably higher turnout than other states (Crocker, 1989, Wolfinger and Rosenstone, Teixera, Calvert and Gilchrist). But fixed effects analyses that look at changes in state laws show little effect (Knack, tables 2 and 3). The second way the state can make registration easier is by increasing the number of venues for registering, per the 1993 National Voter Registration Act – the motor voter act. This has greatly changed the way people register. One third of registrants in 1995-96 registered through motor vehicle offices, and another 7% through public assistance offices and disability services (US Bureau of Census, 1999, table 491). But it has not greatly raised turnout, contrary to the expectations of some experts (Piven and Cloward). Knack's (1995) analysis of earlier state-level laws suggest an impact on turnout of perhaps 21/2 percentage points, staggered over time. Wolfinger and Hoffman (2001) find that while people who registered at motor vehicle offices were about 14 percentage less likely to vote than people who registered in other ways, they still voted in sizable numbers that "greatly exceeds the expectationsof scholars who thought that motor voter registrants would be largely abstainers"(p 4 from Internet download). Since many of the these persons would not have registered or voted at

all, these results support the notion that making it easier to register does raise turnout, albeit modestly.

Easier exercise of absentee ballots affects turnout modestly. Some states have liberalized rules for absentee balloting. As a result that the proportion of votes cast absentee has risen sharply. In 1992 17% of the votes cast in California and 22% of those cast in Texas were absentee ballots. Many of the absentee voters would have voted in any case, but some presumably would not have voted absent the absentee option. Oliver has documented that the use of absentee ballots varies considerably among states, depending on the states' election law, from 22% in Texas to 2% in Kentucky, and has estimated that a liberal absentee ballot provision increases turnout by 1-2 percentage points. He notes that both the use of the absentee ballot and its effect on overall turnout the effect varies with the policies of the state political parties, some of whom seek to mobilize absentee voters while others do not (Exhibit 3).

Voting by mail raises turnout noticeably. Local jurisdictions in 8 states of the US have conducted several thousand elections by mail, largely in small jurisdictions, special districts, and school districts. Hamilton's 1988 review of this experience shows that these have been quite successful in improving turnout and lowering the cost of holding elections. But Oregon is the only state that has adopted voting by mail as its prime way to conduct elections. The state election office and media regard the program as a success, and academics also report favorably on it. Berinsky, Burns and Traugott (2001) estimated that voting by mail increased turnout in Oregon's 19967 election by 4-6 percentage points and that voting by mail worked by keeping existing voters in the group that voted rather than by attracting new voters.

So, the plot thickens. Demography has increased the proportion of citizens with a higher

penchant for voting and institutional reforms have made it easier to register and vote, but turnout has fallen or held constant post 1972, adjusting for the increased share of non-citizens in the voting age population. What other forces could be at work?

rising cost of time

One factor that could have contributed to the fall or stability in 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, in the 1990s, the majority of married families have two earners, and upwards of 25% of families are 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 cost of voting has in particular risen for persons with children, since they now have both time and work commitments. I will call this explanation the "rising time cost" hypothesis

There is some evidence supporting the hypothesis. In 1980, 1996, and 1998 the Burea of the Census asked the non-voting registered population in its CPS November supplement the reasons that they had not voted. 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 so reported. The only other reason that people gave for not voting that increased over this period was lack of interest. In 1980, 11.2% said they were not interested or did not care about elections, 3.6 percentage points more than said they were too busy. In 1998, 12.7% reported disinterest in the election – 22.2 points less than said they did not vote because they were too busy (Exhibit 4). The 27.3 percentage point increase in the proportion of registrants who cited a time constraint for not voting dwarfs the 1.5 percentage point increase in the proportion of registrnats not voting who gave the lack of

interest answer.

If people are giving the "right" 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/were too busy. Calculations with the 1996 CPS supplement suggest that this is the case. Parents.– particularly lone parents — are more likely to cite this reason than others. Consistent with this, the CPS files show that persons with children are less likely to be registered and vote than others. NES data analyzed by Texiera and summarized in Exhibit 5 shows, moreover, 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.

attitudes and mobilization

Several analysts have examined the effect of factors endogenous to the political process on voting, ranging from political mobilization to partisanship and to their views of political efficacy to the expected closeness of elections. These studies use the NES or administrative data on voting by state, since the CPS does not ask questions relating to attitudes or whether or not parties or candidates had contacted the potential voter. The CPS does, however, show that unionization is an important factor in voting (Leighly and Nagler), with union members voting more than other citizens, presumably in part because of union efforts to mobilize their members. Radcliff and Davis find a similar pattern across countries and among US states using cross section and fixed effects pooled cross section and time series data: that more heavily unionized areas have higher turnout. They link

this to attitudes and party ideologies. Hill and Leighly (1996) use pooled cross section time series state data to examine whether the competitiveness and policies of the Democratic party in a state increases lower-class voter turnout, and find modest support for this proposition that party activity affects turnout by these voters. But they exclude unionization from their regressions, which creates a problem given the potential impact of unionism in pushing the Democratics toward liberal views and also in making them more competitive. More broadly, there is a problem in interpreting studies that relate turnout to factors that are endogenous to the political process: one needs a good instrument to infer causality.

high turnout, the Puerto Rican way

There is an important but little known deviation from the US pattern of low turnouts. One part of the country votes at extraordinarily high rates, for reasons that are at least in part related to an institutional difference in the way the state conducts elections. This is Puerto Rico.

On the mainland US, Puerto Ricans have a relatively low rate of voting. In 1996, 47% of persons who were born in Puerto Rico but resided in the US reported that they voted in the Presidential election – a figure noticeably below the 64% of all Americans who reported voting on the CPS. Given self-reporting bias, perhaps 40-42% of the Puerto Rican born actually voted in the presidential election on the mainland.

But on the island Puerto Ricans have an extremely high rate of voting – a rate that puts Puerto Rico among the top democracies in turnout. Exhibit 6 shows the pattern of voter turnout in elections in Puerto Rico in the 1990s by the day of the election. The Tuesday elections were holidays coincident with national elections; while Sunday elections place the election on a day when most people do not work . Turnout in both instances far exceeds that in the mainland.

Why do Puerto Ricans living on the island vote while the Puerto Rican born living on the mainland do not? Since many people move back and forth between the two locales, the question can be put more sharply: why does essentially the same person vote in one setting and not in the other?

An important reason for the difference between high turnout in Puerto Rico and low turnout in the US is that Puerto Rico greatly reduces the cost of voting to residents and makes election day something more than "another work day". As noted, every Presidential year, Puerto Ricans vote on the first Tuesday in November as do other Americans. On off-years, Puerto Ricans vote on Sunday. The referenda regarding the future of Puerto Rico, which are arguably the most important vote taken on the island, are held in off-election years. In the 1990s, turnout on Sundays in Puerto Rico has averaged 70%. But turnout is even higher on the Tuesday voting holiday, averaging 83% in the 1990s, presumably because the weekday holiday does not conflict with weekend outings.

The most natural way to read the high turnout in Puerto Rico is that by reducing the cost of voting and making voting day a dedicated event, the state can increase turnout significantly. This probably reflects two patterns: citizens with time constraints find it easier to vote on the Tuesday holiday or Sunday off-day voting; and citizens who would otherwise not vote are induced to vote by making the voting day a special event, which galvanizes political parties and their activists.

II INEQUALITY IN TURNOUT

Studies of turnout in every country find that persons in the higher income, occupation, and education categories have higher turnout rates than persons in lower status groups. Determining the magnitude of the difference in voting by socioeconomic group is more difficult, in large part because of measurement error. A substantial number of nonvoters report that they vote on the NES

and CPS. The NES validates voters by checking the reported voters name on a list of registered voters. Silver et al (1986) find that respondents most inclined to over report voting are highly educated persons -- those for whom the norm of voting is most salient -- which biases upward the difference in actual voting by education and presumably the difference by other measures of socioeconomic status. With the gap between NES turnout and official turnout rising over time (Burden, 1999), analyses of the trend in skewness 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 CPS voting has not been validated, so there is no simple way to estimate the bias in that data set.

Changes in Socioeconomic Skew

Has the socioeconomic skew in voting increased over time? Does the skew change with the rate of aggregate turnout, or under different voting registration regimes?

Arithmetically, the fact that higher socio-economic groups have higher turnout than lower socio-economic groups implies that large increases in turnout reduce inequality in turnout. 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 necessarily come disproportionately from the lower half since the upper half cannot increase its turnout beyond 100%. A 20 point increase in aggregate turnout would, at the minimum, reduce the gap in turnout for the two groups from 40 percentage points to 20 percentage points.[3] 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%, the arithmetic is such that modest

[3] 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.

changes in turnover, say 5-10 points, could have no effect on inequality in voting or could even increase it.

There is considerable debate over how inequality in voting by socio-economic group has changed over time as turnout has changed. Analysts have used different data, covering different time periods, and different metrics or methodologies and reached different conclusions. Reiter (1979) and Rosenstone and Hansen (1993) find a trend in skewness in NES data using income and education to measure socioeconomic status. Burnham(1987) finds a similar trend in CPS data using occupations to measure status. But Teixera (1992) argues that any bias is modest in the CPS; and Leighly and Nagler's (1992) analysis of CPS and NES data lead them to conclude that "there has been almost no change in class bias in the electorate since 1964".

I reach the opposite conclusion from the data in the Leighly and Nagler article. Their evidence shows that the socioeconomic skew in voting rose from 1964 to 1988 and that even modest changes in turnout are associated with changes in skew. Exhibit 7A presents the data that underlies their CPS analysis, which measures socioeconomic status by: quintile of income, occupation, and education. Turnout drops noticeably in three periods: 1968-1972 (5.4 points); 1984-1988 (3.0 points) and 1972-1976 (2.3 points) and trends downward over the entire period by 10.4 points.

Leighly and Nagler argue that because turnout for the highest group dropped by only 2.7 percentage points less than for the lowest group, there was "only a slight increase in socioeconomic class bias"; that the differential drop is largely a 1984-1988 phenomenon, and that the more pronounced trends in class bias in education and occupation (which I graph in Exhibit 8) are less meaningful than the weaker trend in voting by income status. Unfortunately, however, the

proportion of persons in the CPS income quintiles varies substantially over the years (Exhibit 7B), which invalidates the virtue of using income. One way to repair the problem with the income data is to calculate Gini coefficients for voters, as Leighly and Nagler do. Their Ginis show a modest 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. I have added their computed Gini coefficients to Exhibits 7A and 8, and these figures lend additional support to the finding that in fact skewness in voting turnout increased.[4]

Still, the evidence from the education and occupation categorizations is far from ideal. Since the proportion of people in specific education and occupation groups changes as the population shifts into higher education and occupation groups, Leighly and Nagler are right to be leery of analysis based on those categories. Array the population by the propensity to vote, and assume for simplicity that voting propensity is perfectly related to schooling. Then when the population with 1-3 years of high school drops from say, 40% to 20%, persons moving up the education ladder will have higher "innate" propensity to vote than those who remain in the group, which gives a misleading picture of the trend in voting behavior at the bottom of the distribution. By the same argument, however, the shift of 20% of the population to higher education groups should reduce turnout in those groups, producing a misleading picture of the trend among them. I have not estimated whether the net result of these biases is to produce more/less trend in skewness over time with occupation and education categories. The natural way to address the occupation problem is to use detailed occupational status to obtain the percentile position of persons in the occupation

[4] The problem of limited 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.

hierarchy, ordered, say by earnings in the occupation, but there is no such easy cure for the education problem, since there are only a few categories; and no ideal way to handle persons who are not employed.

In any case, I read the Leighly and Nagler evidence using incomes as the variable for categorizing persons as being consistent with that of the other studies that use occupation or education. The preponderance of evidence is that there was a substantial increase in skewness in voting over the 1964-1988 period.

My reading of the Leighly and Nagler analysis of NES data also leads me the opposite conclusion that they reach. The reported voting data for the NES show a strong trend in skewness, but, as they note, this could be due to trends in misreporting. Indeed, they show a substantial decline in misreporting by income and occupation[5]. However, they do not report turnouts corrected for the changes in misreporting; when I do this with their data, I find continued evidence of a trend toward skewness. In their multivariate probit analysis (table 5), they use validated voting data, which is the best way to deal with misreporting problems, to 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 skewness. 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 differs. The impact of a change in a variable is largest when the voting rate is around 50% and least when the voting rateis very high or very low. To illustrate this point, consider the following logistic model (written in log odds ratio form):

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

(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) dP/dX = b(P)(1-P) or in percentage terms (dP/dX) /P= b (1-P)

Thus the impact of a constant b on the skewness of voting will vary with turnout. As turnout falls toward 50%, the skew will increase in either percentage point or ratio terms – ie with a drop in turnout from, say 65% to 55%, the impact of X on P will rise from .23b to .25b while the impact in percentage terms will rise from .35b to .45b. Stable coefficients in a nonlinear form of this type imply increasing skewness as turnout falls.

I read Nagler's (1991) criticism of the Wolfinger and Rosenstone finding that the severity of the voting law restrictions has its largest impact on the least educated as suffering from the same problem of failure to allow for the way any logistic or probit analysis necessarily implies that the effect of variables varies with the value of the relevant probability. Similar probit or logit coefficients on restrictive registration laws can be interpreted as implying similar behavioral effects at the individual level, but the issue is about how laws affect the difference in voting between groups. [6] Shields and Goidel's "cross validation" of Leighly and Nagler suffers from similar problems of interpretation as well as the problem of ignoring estimated logit coefficients on education which 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.

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[6] Nagler argues that assuming a logit or probit may not be valid and that researchers should experiment with other cumulative density functions. That is correct, but if you have estimated the model with a probit or logit, you should follow the logic of the functional form.

Consistent with my reading of the data, Darmofal (1999) provides evidence that the NES validated voters measure shows an increase in inequality in voting from 1964 to 1988. With the validated data, he reports a 14 point drop in turnout among low income groups compared to a 4.8 point drop in turnout among high income groups (Exhibit 9). While the decline is not monotonic, the overall pattern clearly moves the median voter up the income distribution. He 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 (Exhibit 9). He explains much of the increased skew in voting by income in terms of the greater effect of declining partisanship and political interest on voting among low income people than high income people, but cannot explain much of the increased skew in voting by education in this way.

Since turnout varies over time and across geographic units, we can examine the effect of turnout on the skewness in voting with national time series and state or other lower jurisdiction data. If turnout affects inequality in voting, we would expect inequality to rise when turnout falls and for states with higher turnout to have less socioeconomic skew in voting. My tabulation of Leighly and Nagler's table 1 data show a strong relation between changes in turnout and in their measures of inequality:

year	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
1964-68	-0.2	-.0086

1980-84	0.8	-.0008

Using a two-stage procedure in which he estimates the extent of skew for each state, and then regresses his estimates on state turnout, Devroye (2001) finds that the level of turnout has an impact on inequality in voting using CPS files for 1994-1998.

Finally, I reproduce in exhibit 10 the most recent Census Bureau estimates of the rate of turnout for persons by education (panel A) and by age and education (panel B). The figures for persons with very low education are potentially subject to serious bias due to the concentration of non-citizens and citizens legally barred from voting among those with limited education (see Day and Gaither, table C), but even so the pattern of greater decline in turnout among the less educated is striking even if we correct the 1996 and 1998 figures for this problem by adjusting those data by replacing voting age population with citizens reported by the Bureau of Census. The following statistics makes this clear:

Drop in turnout uing different measures of the potential voting population

	1966 to 1998, non-presidential		1964-1996 presidential	
Education group	voting age population	eligible population	voting age population	eligible population
< 9th grade	-20.6	-11.2	-29.9	-23.4*
9-11	-25.3	-18.3	-31.6	-25.1*
hs grad/GED	-23.0	-20.9	-27.0	-24.4
some college	-18.6	-15.1	-21.6	-19.0
bachelor's or more	-13.3	-9.0	-14.9	-10.5

(* I used the same correction from voting age to eligible population for these groups since the Census groups them together in its 1996 study)

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 evidence still comes down in supporting the proposition that inequality among voters has risen.

III TURNOUT AND POLICY

Should we be concerned about low and skewed turnout?

Theory suggests that who votes matters in determining laws and allocating resources among groups. In the simplest model of decision-making in a democracy the views of the median voter prevails in policy determination (Riker). Ideally, the median will be the citizen at the 50th percentile of the income distribution. But a voting distribution skewed in favor of upper income persons will produce a median at a very different position, and the median will rise whenever turnout of lower income groups falls more/rises less than turnout of higher income groups. I have made crude calculations that show that the skew in US voting produced a median voter in 1998 at the 63rd percentile of the income distribution, which compares to a median voter in 1964 at the 53rd percentile of the income distribution.

There are four ways to analyze the impact of turnout and/or the skewness of turnout on likely policy outcomes:

1. Cross country comparisons of turnout and outcomes. Here, the lower voting rate in the US than in EU countries is consistent with the difference between the welfare state and related policies of the two areas, and some analysts have argued for a causal connection. But there are lots of other differences between the US and EU countries, making it difficult to test such an interpretation. Indeed, there are probably more potential explanatory factors for observed policy differences than there are differences in policies.

2. Cross state comparisons of turnout and outcomes in the US. An alternative way to examine how turnout affects policy is to look at states within the US. Hill and Leighly (1992) show that the skewness in voting is related to welfare expenditures across states, but their equation

excludes the rate of union organization, which is a major determinant of turnout and is likely to affect policy as well. Hill, Leighly, and Hinton-Andersson's extension (corrected in Ringquist, Hill, Leighly, Hinton-Andersson) of this analysis to a pooled cross section fixed effects model suffers from the same problem of omitting a potentially major factor.

3. Comparisons of the attitudes of voters and non-voters on key issues and simulations of how the median voter would change if non-voters would vote. Most studies show that there is little attitudinal difference between voters and non-voters (Wolfinger and Rosenstone; Verba, Schlotzman and Brady).

4. Analysis of the effect of turnout on which party wins an election. Pacek and Radcliff show that in a pooled cross section time series model across countries that higher turnouts improve the electoral chances of left parties, largely in European countries. The case for turnout affecting party performance in the US appears to be less clear and more controversial. I have not yet reviewed carefully the contending camps in this debate. Over the long run, however, the level of turnout is unlikely to affect party performance. If, as many argue, higher turnout helps the Democrats in the immediate term, then Republicans will adjust their policies toward the new median. If, as others argue, "the joke's on the Democrats" even in the short run, or if any relation that existed historically has disappeared, the issue is moot (Nagel and McNulty).

IV. 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 rational man vote? True, 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 – but if there are no benefits, why bother? That a sizeable proportion of the population votes implies that people do see benefits, perhaps non-pecuniary benefits more than pecuniary benefits, but benefits nonetheless.[7] Granting that voting is rational, economic analysis has a more sensible message than "what me, vote?". It suggests that the decision to vote will depend on potential benefits whatever their form and the costs to voting, and that a modest number of persons "on the margin" respond to these incentives.

The bulk of the evidence reviewed here supports this notion. Turnout in the US has fallen, particularly among persons in the lower rungs of the socioeconomic distribution, but it has responded modestly to modest declines in the cost of voting. Evidence that turnout and disproportionate turnout of particular groups has some modest impact on policies is also consistent with this view. That larger differences in voting institutions, such as the Puerto Rican voting day holiday or compulsory voting mandates, produce larger turnouts suggests that there is a reasonable monotonic relation between the costs of voting and turnout -- a supply curve of votes, as it were. But the evidence also supports the notion that factors endogenous to campaigns and broader social factors, such as the strength of labor, that affect voting as well. Here, the Internet may be even more important. Yes, the incentive factors that affect individual behavior operate on the margin of the voting decision, but there are important issues in the overall structure of society and the political process that also affect voting.

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[7] 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. If the median voter model is right, moreover, it is possible that my vote could shift the median position by a minuscule amount to pay off the small time cost of voting.

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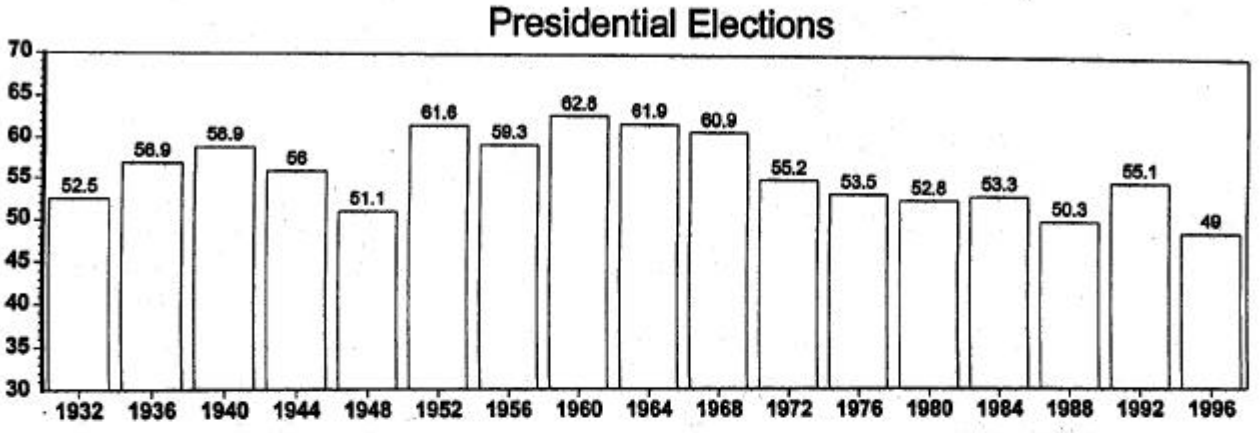
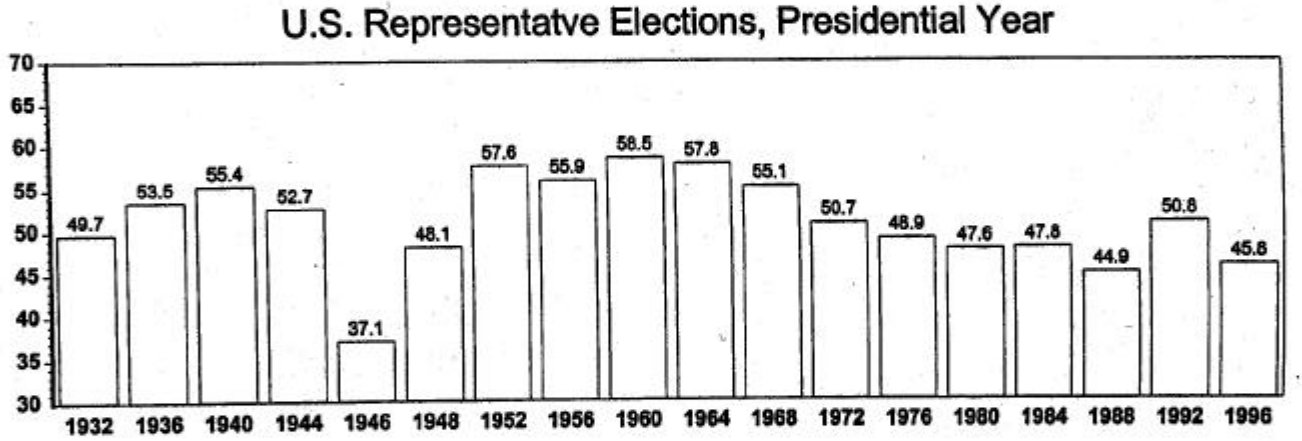
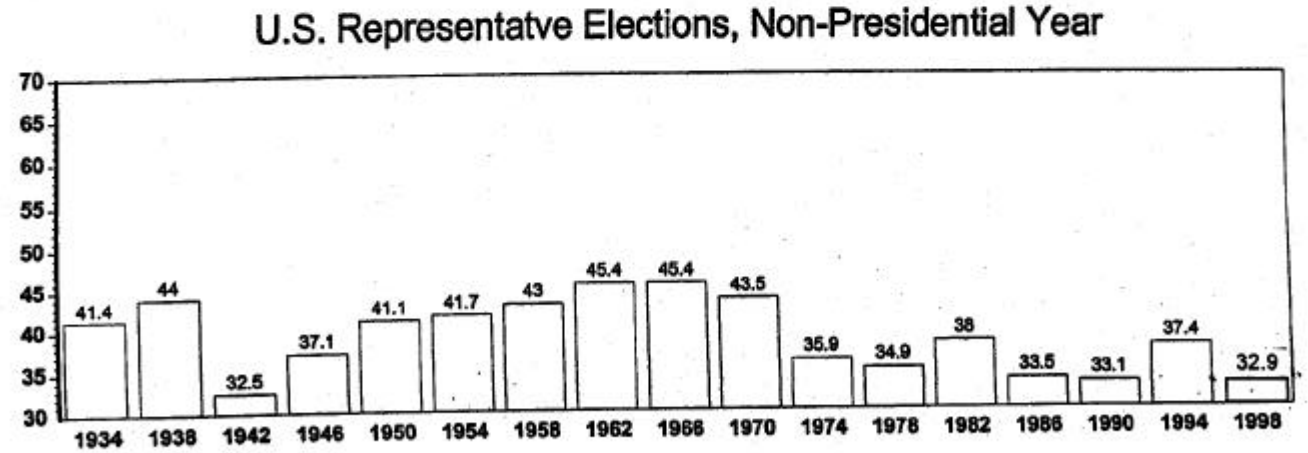
Exhibit 1 Percentage of Voting Age Population Participating in Elections for President and U.S. Representatives: 1932 to 1996







SOURCE: *Statistical Abstract of the United States 1998* (Washington, DC: US Bureau fo the Census)

Exhibit 2: Regression Coefficients and Standard Errors for Alternative Models of Turnout, 1948 to 1998

1948 to 1998	Const	Trend (XIOO)	Pres Year	Ln Eligible/VAP	N	R^2
1. Ln VotersNoting Age Population	-.58	-.42 (.09)	.30 (.03)		**26**	.86
2. Ln Voters/ Eligible Population	-.67	-.25 (.09)	.30 (.03)		26	.86
3. Ln VotersNoting Age Population	-.72	-.1,4 (.18)	.30 (.03)	1.70 (.95)	26	.88
1972-1988						
4. Ln VotersNoting Age Population	-.78	-.24 (.10)	.33 (.02)		14	.96
5. Ln Voters/ Eligible Population	-.96	.05 (.15)	.34 (.02)		14	.95
6. Ln VotersNoting Age Population	-.59	-.51 (.28)	.33 (.02)	-.97 (.88)	14	.97

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Exhibit 3. Logistic Regression Coefficients for Voting versus Not Voting

Universal Eligibility	.005 (.017)
Expanded Eligibility	.089** (.041)
Closcd Primary Dummy	-.078** (.016)
Universal/Closed Primary	.116** (.038)
Expanded/Closed Primary	.124** (.041)
Registration Dcaane	-.021** (.00l)
Active Paay	.105** (.028)
Education	.599** (.026)
Age	.076** (.002)
Age Squared	-.0000* (.000)
Income	.075** (.007)
Married	.181** (.015)
Home Ownership	.453** (.015)
Student	.481** (.031)
Black	.293** (.021)
Rural	-.118** (.017)
Suburban	-.059** (.015)
Constant	-3.517** (.067)
-2 times the log likelihood ratio	148,862.3
Model Chi-Square	27,028.9
Percent of cases correctly predicted	74.3
n of cases	143,374

**p < .01, *p < .05.
Standard Error of the, Estimates in Parentheses,
Source: 1992 Cut-rant Population Survey, Voter Supplement.

Exhibit 4: Reported Reasons for Not Voting, Among Persons Registered to Vote, 1980-1998

	1980	1996	1998
Too busy	7.6	21.5	34.9
Not Interested	11.2	16.6	12.7
Ill/disabled	17.1	14.9	11.1
Dislike Candidates	16.0	13.0	5.5
Out of Town	12.6	11.1	8.3
No transportation	4.1	4.3	1.8
All else	17.2	15.9	18.5
DK/Refused	14.1	2.7	7.1

Source: US Census Bureau, Voting and Registration in the Election of November 1998 p2O-523RV August 2000

: US Census Bureau, Voting and Registration in the Election of November 1996 p2O-504 July 1998

Exhibit 5

Turnout Rates of Parents and Nonparents, 1956 - 1996

	Parents	Nonparents	Difference
1956	69	78	-8
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 Tuxeira using survey data from National Election Studies

Exhibit 6

Voter Turnout in Elections in Puerto Rico

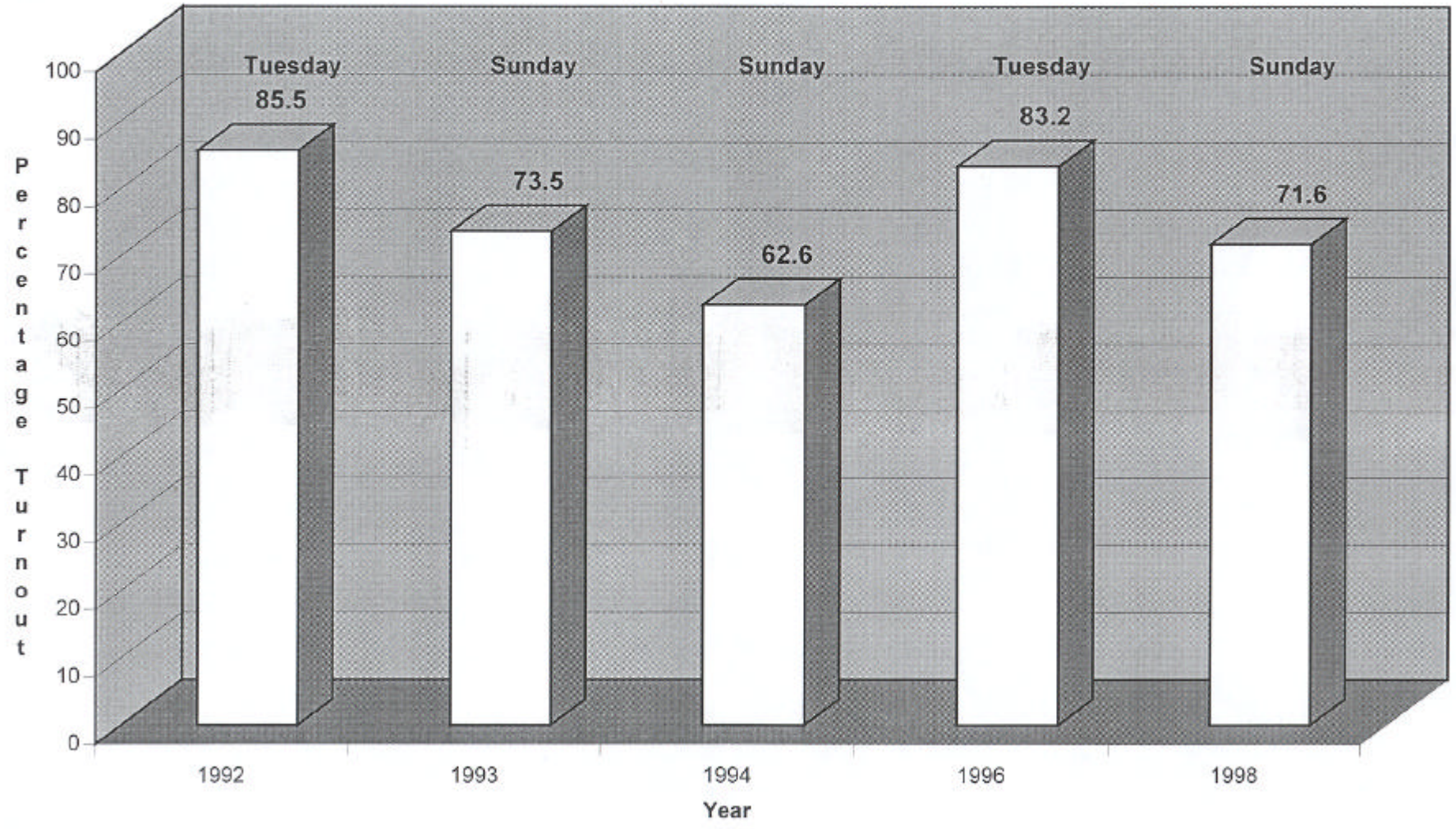


Exhibit 7A

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	67.0	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 coef.	(.0856)	(.0778)	.0941	.0984	.0997	.0985	.1112
Occupation							
Service work	65.9	62.7	58.6	52.8	51.3	52.9	47.2
Blue-collar	65.6	62.3	54.2	49.8	48.0	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	47.0	43.3
High school grad.	76.5	74.2	66.1	62.0	61.0	61.0	56.6
Some college	82.6	80.2	76.0	70.1	69.5	69.9	66.4
College grad.	—[a]	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

Note: Table entries are the reported turnout rates for each demographic category.
[a]For 1964 college grad and post-college are only available in combined form.

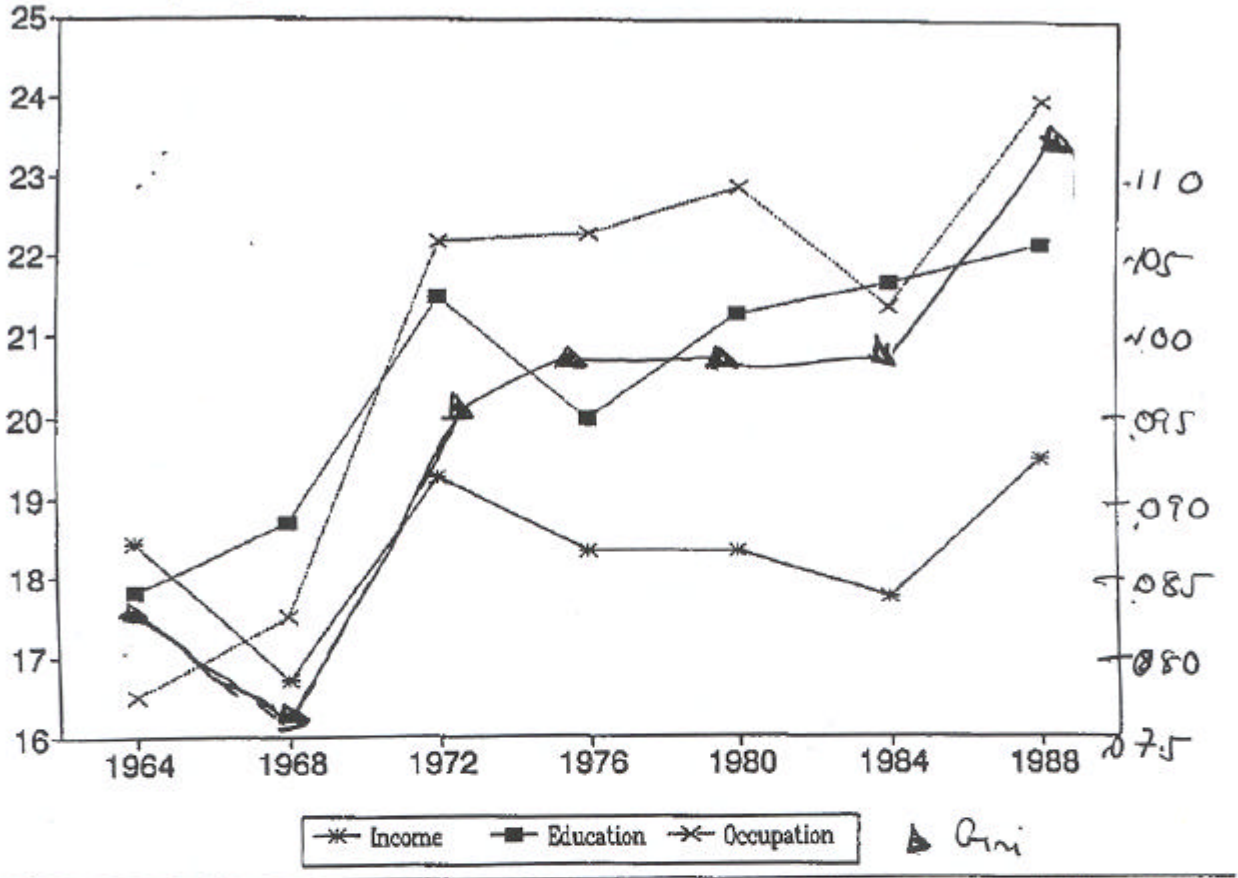
Exhibit 7B

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

Exhibit 8

Trends in Class Bias, Using Various Measures of Socioeconomic Status



Note: Income bias is the difference in turnout rates between the top and bottom halves of the income distribution. Education bias is the difference in turnout rates between high school graduates and non–high school graduates. Occupation bias is the difference in turnout rates between white-collar and blue-collar workers.

Source: Computed from the Current Population Surveys, 1964–88.

Exhibit 9

Tumout by Income Quintile, 1964-1988
Self-reported Tumout (Current Population Surveys)

		1976	1980	1984	1988	Turnout Change 1964-1988
Income Quintile:						
I (Low)	53.7%	47.4	47.7	47.8	42.7	-11.0%
2	63.1	*55.1*	54.2	57.5	52.2	-10.9%
3	72.8	62.4	60.5	63.5	58.9	-13.9%
4	78.7	69.9	68.9	70.3	67.5	-11.2%
5 (High)	85.2	78.4	76.1	77.6	76.9	-8.3%

Turnout by Income Quintile, 1964-1988
Validated Turnout (NES)

		1976	1980	1984	1988	Turnout Change 1964-1988
Income Quintile:						
I **(Low)**	53.7%	47.0	45.8	45.8	39.7	-14.0%
2	56.4	60.6	53.8	61.8	49.4	-7.0% -
3	62.0	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	80.0	73.7	4.8%

Turnout by Education Level, 1964-1988
Validated Turnout (NES)

	1964	1976	1980	1984	1988	Turnout Change 1964-1988
Years of Education						
Less than 12 years	57.4%	52.2	45.0	49.6	43.0	-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

Table A-2. Reported Voted and Registered by Region, Educational Attainment and Labor Force: November 1964 to 1998

Source: U.S. Census Bureau
Internet Release date: July 19, 2000

Exhibit 10A

	Region				Educational Attainment				
Years	Northeast	Midwest	South	West	Less than 9th grade	9th to 12th grade, no diploma	High school graduate or GED	Some college/ Associate degree	Bachelor's degre or more
Voted									
1998	41.2	47.3	38.6	42.3	24.0	24.6	37.1	46.2	57.
1996	54.5	59.3	52.2	51.8	29.9	33.8	49.1	60.5	72.
1994	45.6	48.9	40.9	47.1	23.6	27.3	40.7	49.5	63.
1992	61.2	67.2	59.0	58.5	35.1	41.2	57.5	68.7	81.
1990	45.2	48.6	42.4	45.0	27.7	30.9	42.2	50.0	62.
1988	57.4	62.9	54.5	55.6	36.7	41.3	54.7	64.5	77.
1986	44.4	49.5	43.0	48.4	32.7	33.8	44.1	49.9	62.
1984	59.7	65.7	56.8	58.5	42.9	44.4	58.7	67.5	79.
1982	49.8	54.7	41.8	50.7	35.7	37.7	47.1	53.3	66.
1980	58.5	65.8	55.6	57.2	42.6	45.6	58.9	67.2	79.
1978	48.1	50.5	39.6	47.5	34.6	35.1	45.3	51.5	63.
1976	59.5	65.1	54.9	57.5	44.1	47.2	59.4	68.1	79.
1974	48.7	49.3	36.0	48.1	34.4	35.9	44.7	49.6	61.
1972	66.4	NA	55.4	NA	47.4	52.0	65.4	74.9	83.
1970	59.0	NA	44.7	NA	43.4	47.1	58.4	61.3	70.
1968	71.0	NA	60.1	NA	54.5	61.3	72.5	78.4	84.
1966	60.9	NA	43.0	NA	44.6	49.9	60.1	64.8	70.
1964	74.4	76.2	56.7	71.9	59.0	65.4	76.1	82.1	87.
Registered									
1998	60.8	68.2	62.7	56.0	40.2	43.4	58.6	68.3	75.
1996	64.7	71.6	65.9	60.8	40.7	47.9	62.2	72.9	80.
1994	61.5	68.9	61.1	58.9	40.7	45.0	59.2	68.9	77.
1992	67.0	74.6	67.2	63.6	43.9	50.4	64.9	75.4	84.
1990	61.0	68.2	61.3	57.7	44.0	47.9	60.0	68.7	77.
1988	64.8	72.5	65.6	63.0	47.5	52.8	64.6	73.5	83.
1986	62.0	70.7	63.0	60.8	50.5	52.4	62.9	70.0	77.
1984	66.6	74.6	66.9	64.7	53.4	54.9	67.3	75.7	83.
1982	62.5	71.1	61.7	60.6	52.3	53.3	62.9	70.0	79.
1980	64.8	73.8	64.8	63.3	53.0	54.6	66.4	74.4	84.
1978	62.3	68.2	60.1	59.1	53.2	52.9	62.0	68.7	76.
1976	65.9	72.3	64.6	63.2	54.4	55.6	66.9	75.2	83.
1974	62.2	66.6	59.8	59.8	54.1	54.3	61.9	66.9	76.
1972	73.9	NA	68.7	NA	61.5	63.0	74.0	81.7	87.
1970	70.0	NA	63.8	NA	61.2	62.9	70.6	72.0	78.
1968	76.5	NA	69.2	NA	64.6	68.5	77.7	82.9	87.
1966	73.8	NA	62.2	NA	63.7	66.7	73.5	75.5	79.
1964	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: Prior to 1972, data are for people 21 to 24 years of age with the exception of those aged 18 to 24 in Georgia and Kentucky, 19

Voting Participation

Table 22-1 Voting rates and ratios of voting rates for the population ages 25–44, by highest level of educational attainment and type of election: Selected years 1964–98

Type of election and year	Total[1]	Highest level of educational attainment			
		1–3 years of high school	High school diploma or GED	Some college	Bachelor's degree or higher
		Voting rates			
Congressional elections					
1974	42.2	24.7	41.9	49.7	59.3
1990	40.7	17.8	34.4	47.9	57.4
1994[2]	39.4	13.1	30.7	45.9	57.5
1998	34.8	13.1	27.4	40.3	48.5
Presidential elections					
1964	69.0	60.5	75.5	82.9	86.2
1976	58.7	38.5	57.8	67.4	78.5
1988	54.0	26.3	47.4	61.7	75.0
1992	58.3	27.0	49.8	66.9	78.5
1996	49.2	20.2	40.0	56.8	68.0
		Ratio of voting rate to that of high school graduates			
Congressional elections					
1974	—	0.590	1.000	1.186	1.415
1990	—	0.517	1.000	1.393	1.670
1994[2]	—	0.427	1.000	1.495	1.873
1998	—	0.477	1.000	1.467	1.768
Presidential elections					
1964	—	0.801	1.000	1.098	1.142
1976	—	0.667	1.000	1.166	1.359
1988	—	0.555	1.000	1.301	1.582
1992	—	0.543	1.000	1.344	1.578
1996	—	0.506	1.000	1.421	1.702

— Not applicable.

[1] Includes those with less than 9 years of education.

[2] Revised from previously published figures.

NOTE: In 1992, the Current Population Survey (CPS) changed the questions used to obtain educational attainment. See *Supplemental Note 7* for more information. To minimize the impact of age on voting trends, this analysis is confined to individuals ages 25–44. The voting rate is calculated as the number of voters ages 25–44 divided by the total of individuals, both non-U.S. and U.S. citizens, in the age group.

SOURCE: U.S. Department of Commerce, Bureau of the Census. *Current Population Reports*, "Voting and Registration in the Election of November (various years)," series P-20, nos. 143, 293, 322, 440, 453, 466, PPL-25, P20-504, and P25-1132.