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Income, Economic Voting, and Long-Term Political Change in the U.S., 1952-1996*

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Abstract

This study analyzes the effects of income on voting behavior and the outcome of presidential elections in the U.S. since 1952. The political effects of income have not been examined using appropriate measures and systematic analysis of individual-level data. Our analyses build from political behavior research on economic evaluations and sociological and economic research on trends in income distribution. We first consider the theoretical grounds for expecting income to have shaped voting behavior in the postwar era. Our analysis then shows that while income has had a significant and generally stable impact on voting behavior, cumulative changes in mean household income have had a very large effect on the outcome of presidential elections since the 1950s, with Republican candidates benefiting disproportionately. We find that household income shapes voting behavior indirectly, affecting policy evaluations, which in turn influence vote choice. The mediating roles played by evaluations of social welfare and government size help to explain why past increases in mean income have consistently benefited the Republican party. We discuss the contributions of this study to understanding income as an important but underappreciated source of political change in the U.S.

Over the past two decades, analysts of political behavior have increasingly focused their attention on the economic sources of both vote choice and change in the outcome of elections (see Fiorina 1981; Haynes & Jacobs 1993; Hibbs 1987b;

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Weakliem & Heath 1994; cf. Downs 1957). This growing body of research has provided a wealth of important and often surprising findings about the ways in which macroeconomic processes are mediated by voters' preferences, beliefs, and level of information. Most notably, evaluations of the performance of the national economy ("sociotropic" evaluations) have been found to have a much larger impact on vote choice in both presidential and congressional elections than voters' ("egocentric") evaluations of their personal financial situation (Alvarez & Nagler 1995; Kinder & Kiewiet 1981; Kiewiet 1983).

However, amidst mounting evidence for the causal importance of voters' economic evaluations (and the particular significance of sociotropic evaluations), researchers have failed to analyze an important source of economic evaluations and thus economic voting: income. This neglect is part of a more general tendency in current studies to treat income as having little relevance to understanding voting behavior.¹ Moreover, while income is often included in multivariate models as a statistical control, flawed measurement of income as a qualitative variable and a lack of integration between individual-level and aggregate-level analysis limit the ability of these studies to provide a systematic understanding of the political effects of income.²

Limitations of Past Research

Previous research on income and political behavior is characterized by significant limitations that must be addressed to develop a more systematic understanding of the political effects of income. Following Axelrod's (1972, 1982, 1986) influential studies of Democratic and Republican presidential coalitions, analyses of voting behavior in presidential elections have tended to employ dichotomous measures of income, treating a quantitative variable as a qualitative indicator.³ By ignoring *within*-category political heterogeneity (such as voting differences among respondents in the bottom third of the income distribution), this approach to measuring income tends to underestimate its effects on vote choice.⁴ This qualitative measure also makes it impossible to analyze the effects of *change* in average income, thereby limiting researchers' ability to pose important theoretical questions. As discussed below, this is an especially significant limitation in light of dramatic changes in mean income during the postwar era.

Hibbs's (1987b) research provides an instructive, partial exception to these problems. This research provides evidence of an association between per capita disposable income (measured in continuous dollars) and major party vote share (measured as a percentage). Although Hibbs's hypothesizes that (individual-level) economic factors relating to voters' concern about unemployment or inflation mediate the impact of income, he is unable to systematically test these hypotheses.

This is because his research is limited by its reliance on *aggregate-level* data in which *individual* voters' choices and economic evaluations are not directly measured.

While Hibbs's research improves over qualitative measures of income, it also reveals two additional requirements that must be met to develop a more systematic understanding of the political effects of income. First, individual-level data (i.e., observations about the actual behavior and attributes of individual voters) are necessary to test hypotheses about what specific type of economic evaluation mediates the political effects of income on vote choice. Second, researchers should examine not only (individual-level) vote choice but also (aggregate-level) election outcomes. Studies that do not satisfy these two requirements will yield theoretically vacuous results that fail to advance scholarly understanding of precisely why and under what conditions income affects vote choice and election outcomes.⁵

Trends in Income as a Source of Long-Term Political Change

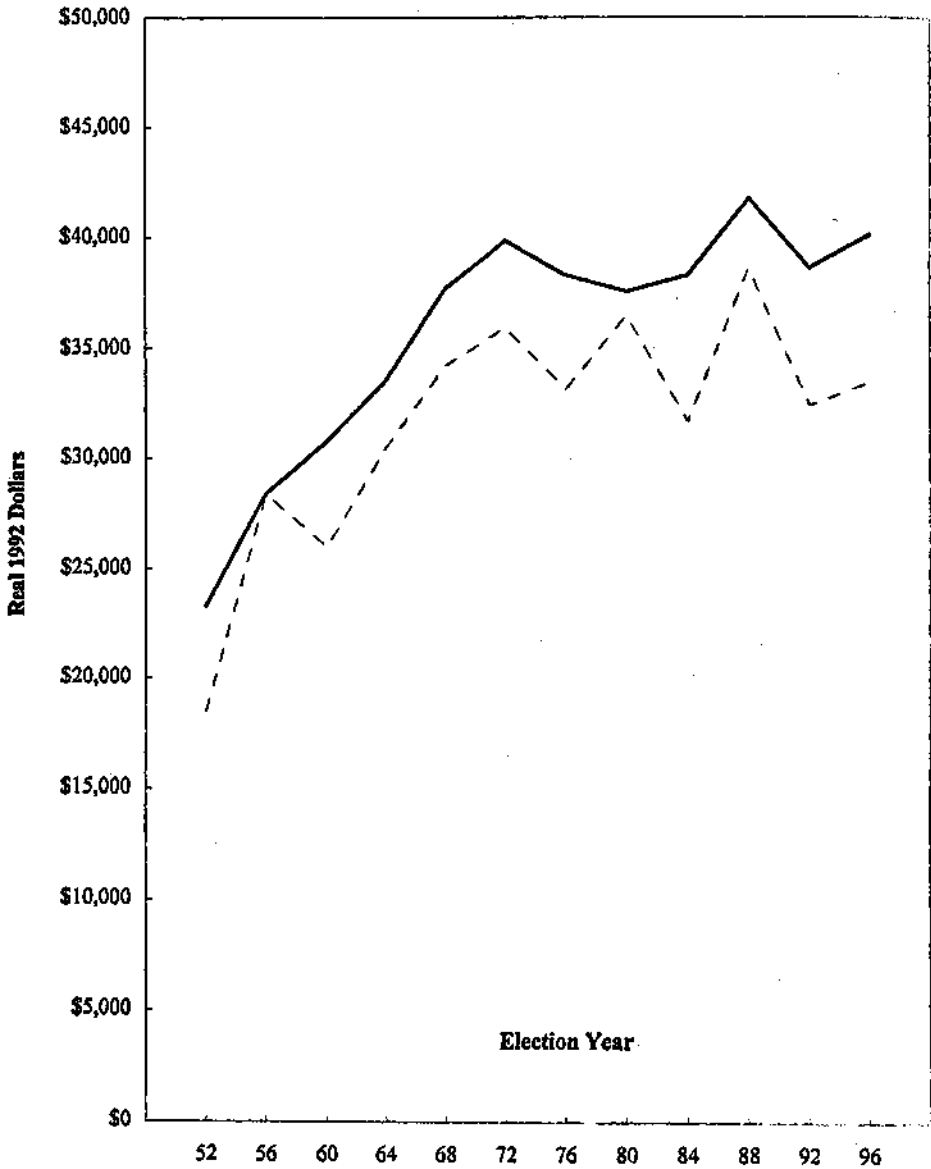
The methodological limitations of past studies would be inconsequential if the political effects of income were minimal. However, as will become clearer in the course of our analysis, income has had very significant political effects. More specifically, we find that the cumulative effects of shifts in average income during the past fifty years have significantly altered the outcome of presidential elections, enhancing Republican victories and limiting the margin of Democratic wins.

To begin to understand why income can have such significant effects, we distinguish between short- and long-term sources of political change. Because factors such as candidate popularity tend to vary widely between elections, over-time variation in these factors rarely confers a lasting advantage on a specific political party (Wattenberg 1991). While often having powerful effects, these factors thus represent short-term sources of political change that can benefit a political party during one election only to later put its candidate at a disadvantage.

By contrast, causal factors whose marginal distributions experience significant monotonic change can be a source of long-term political change during the time period in which such trends occur.⁶ As summarized in Figure 1, mean income has shown significant trends that approximate the monotonic pattern required of long-term sources of political change. More specifically, the data show that voters' mean (and median) household income rose steadily from the 1950s through the early 1970s.⁷ Since this time, median income has fluctuated, showing a slight net decrease, whereas mean income displays some year-to-year variation but little net change through 1996.

Did the dramatic increase in mean income between 1952 and 1972 affect the outcome of elections during this period? And can income be considered a source of long-term political change in the U.S.? The analyses presented in this study provide answers to these questions. In developing these analyses, we are guided by

FIGURE 1: Changes in Mean and Median Household Income among Major Party Voters in the U.S., 1952-1996



Note: Data are from the National Election Studies

— Mean household income

- - - Median household income

three competing theories of economic voting that provide testable hypotheses that potentially explain the political relevance of income to vote choice and the outcome of elections. Each of these hypotheses is initially plausible, and we cannot know which best explains the political effects of income until we have conducted our empirical analyses.

The Outline of This Study

This study seeks to advance our understanding of the political effects of income in the U.S. Our analysis has three main goals, each of which corresponds to the requirements discussed above. First, we measure the effect of continuous household income on vote choice, examining whether income has a significant effect and whether the magnitude of this effect has changed over time. Second, we analyze the cumulative impact of changes in mean income on the outcome of presidential elections from 1952 through 1996. Third, we test hypotheses about what specific type of economic evaluation explains the effects of income on voting behavior. Taken together, these analyses advance our understanding of the interrelationship of income, voting choice, and change in the outcome of elections.

The article is organized as follows. In the first section, we consider three theories that identify different types of economic evaluations as a proximate source of vote choice. We discuss the reasons that income may have provided voters with a basis for making such evaluations, and thus choosing between major party candidates in presidential elections since the 1930s. After describing the data and measures employed in the study, we present our analyses of vote choice, change in election outcomes, and the role of economic evaluations in explaining the political effects of income. A concluding section discusses the implications of our findings for understanding income as a source of long-term political change in the U.S.

Three Theories of Economic Evaluations and Economic Voting

What factor(s) explain why income affects the behavior of individual voters, and in turn the outcome of elections? We consider three competing theories that identify a specific type of economic evaluation as the cause of economic voting. Because income can lead to variation in economic evaluations, one or more of these types of evaluations may mediate the effects of income on vote choice.

This mediating role can be understood using the following path diagram, in which the effects of income on vote choice are assumed to be indirect (i.e., affecting economic evaluations, which in turn affect vote choice): *income* → *economic evaluations* → *vote choice*. If economic evaluations play this mediating role, the effect of income will become insignificant once economic evaluations are measured in a statistical model predicting vote choice. Developing these analyses thus provides

us with the necessary information to understand why differences in income lead to different patterns of voting behavior.

PERFORMANCE EVALUATIONS

Performance-oriented theories of voting assume that individuals take into account their perceptions of economic well-being as a means of evaluating and choosing between political candidates (Fiorina 1981; Hibbs 1987a). Performance evaluations can have as their target voters' personal circumstances (*egocentric* evaluations) or the well-being of the national economy (*sociotropic* evaluations). In addition to such variability in the target of economic well-being, performance evaluations also depend on their time orientation. *Retrospective* evaluations are evaluations of past economic performance and *prospective* evaluations are judgments about future economic performance (see Fiorina 1981).

Given the greater uncertainties (and greater amount of information) involved in economic predictions, retrospective evaluations are the less demanding type of performance evaluation. These require only that voters are capable of rewarding political incumbents for economically good times and blaming them for economically bad times. Insofar as income is a source of retrospective evaluations, wealthier voters may be more likely to have favorable egocentric or sociotropic evaluations under Republican administrations (and experience economic hardship under Democratic administrations) than poorer voters, given Republican administrations' greater willingness to lower taxes and keep inflation in check (Hibbs 1987a).

PROBLEM EVALUATIONS

A second theory of economic voting identifies perceptions of economic problems as enabling voters to evaluate and choose between political candidates. Problem evaluations differ from performance evaluations in requiring voters to make attributions about the source of their economic concerns. Research by Kiewiet (1983) and by Hibbs (1987a) identifies two types of politically relevant economic problems that can be related to voters' income level.

The first type of economic problem relates to perceptions of taxes. When voters identify federal taxes as too high or wasteful, these perceptions provide them with a reason to vote against the political incumbent (see Kiewiet 1983). If wealthier voters are more likely to identify taxes as a problem during Democratic administrations (or poor voters are less likely to identify taxes as a problem during Democratic administrations), then this will create a relationship between income and vote choice. Such a relationship implies that income affects voting choice by shaping voters' evaluations of taxes as an important problem.

A second type of economic problem relates to perceptions of jobs and unemployment. When voters identify unemployment as a problem, they tend to

favor Democratic over Republican candidates, given the tendency of Democratic administrations to favor the reduction of unemployment as a goal (see Hibbs 1987a). As with evaluations of taxes, we may expect that lower-income voters will be more likely than higher-income voters to identify unemployment and job-related concerns as major problems, thus creating a relationship between income and vote choice.

POLICY EVALUATIONS

Policy-oriented theories of voting assume that individuals are also motivated by evaluations of the normative desirability of various sorts of government programs or policies. This type of economic evaluation differs sharply from the earlier two types in that *policy* evaluations involve beliefs about the legitimacy of government involvement within a given domain of policymaking. Whereas problem-oriented and performance-oriented voters are concerned about government's actions only insofar as they constrain or enable other desired goals, policy-oriented voters make ideological judgments about government programs and the proper level of government responsibility within a given domain. Policy-oriented voters are thus intrinsically concerned with public policies themselves (rather than merely with the impact of such policies on economic well-being).⁸

We identify two policy issues as having potential relevance to income-based differences in voting behavior. Since Franklin D. Roosevelt's New Deal introduced public assistance and social insurance programs to the U.S., divergent views of the welfare state have led to longstanding differences between the Democratic and Republican parties, and between Democratic and Republican voters (e.g., Feldman & Zaller 1992; Page 1978). If voters' evaluations of the welfare state are rooted in differences in income, such policy evaluations may explain income-based voting.

The second policy issue we consider relates to the size and power of the federal government (e.g., Hartz [1955] 1991; Lipset 1996). Whereas the welfare state involves specific, redistributive activities performed by the federal government, this second issue relates to voters' general preference for an activist or laissez-faire conception of government. Issues of governmental power may lead to income-based differences in evaluations, with lower-income voters being more likely than higher-income voters to welcome domestic involvement by the federal government as a means of addressing a wide array of social problems.

Household Income as a Source of Economic Voting

The preceding factors have potential relevance as causal mechanisms that translate income into subsequent patterns of voting behavior. Since the 1930s the two major parties have presented voters with policy platforms and approaches to managing the U.S. economy characterized by significant and enduring differences on

economic issues⁹ (see, e.g., Hibbs 1987a; Polsby & Wildavsky 1988). With respect to policy evaluations, Democrats have tended to favor the maintenance or expansion of social-welfare programs and a greater willingness to embrace governmental activism in domestic policymaking. By contrast, Republicans have tended to oppose welfare programs and tax increases, while consistently favoring a considerably smaller domestic role for the federal government.

Likewise, the two parties have pursued different approaches to managing the national economy. With respect to perceptions of economic problems, Democrats have favored the provision of jobs and reduction of unemployment (see Hibbs 1997a), while Republicans have advocated lower taxes and containing increases in consumer prices. Finally, income-based voting may involve egocentric or sociotropic evaluations of economic performance. In our empirical analysis, we test competing hypotheses about which of these three types of economic evaluations mediate the political effects of income.

In developing these analyses, our focus is on income at the household level. While it is also possible to consider the political effects of individual earnings,¹⁰ household income is a preferable starting point given that individual household members benefit by the presence of income earned by other members (individuals' earnings may underestimate their available income and thus the political effects of income). Stratification research on the relative importance of individual versus household location provides initial support for this focus on household income (Sørensen 1994).

Data, Measures, and Models, Measures, and Models

NATIONAL ELECTION STUDIES DATA ON PRESIDENTIAL ELECTIONS

We analyze data from the National Election Studies' (NES) surveys of voting behavior in presidential elections (Center for Political Studies 1995; 1997). The NES surveys contain a wealth of high-quality information about voters' preferences, socioeconomic attributes, turnout, and candidate choice during most of the post-World War II era (from 1952 through 1996). Our focus in this study is on the past twelve presidential elections. Presidential elections are a better initial domain in which to analyze the political relevance of income, and we acknowledge that the corresponding effects of income in congressional elections may differ.¹¹ The twelve elections in the analyses span a period during which household income has experienced significant growth as well as stagnation (see Figure 1); we can thus analyze the impact on voting behavior and election outcomes of these changes over time.

Dependent Variable and Controls for Turnout Selectivity

We have pooled the twelve NES presidential election-year surveys for 1952 through 1996 into a data set in which time is itself a covariate. Pooling the data in this way allows us to control for the main effect of each election while also examining whether the effect of household income has itself changed over time. Throughout the analyses, our dependent variable is major party voting choice, which is coded 1 for the Democratic and 0 for the Republican candidate.¹²

Over the course of the 1952 through 1996 elections, the entrance of some specific presidential candidates (e.g., Ronald Reagan in 1980) may have resulted in an increase in the salience of economic issues relating to voters' income level. It is even possible that there is a general trend toward income providing voters with a firmer guide to choosing between major party candidates. Such changes in the political effects of income will show up as income-by-year interactions, and we test for the presence of these interactions in the analysis.

While our primary interest is in the effect of household income on vote choice and election outcomes, our analyses also take into account the prior relationship between household income and voter turnout. We control for this nontrivial relationship (Rosenstone & Hansen 1993; Teixeira 1987) using a version of Heckman's (1979) procedure for modeling selection processes.¹³ First, we estimate a model of the effects of income and election year (and their interaction) on voter turnout. We then save the predicted probabilities from this turnout model, entering them as a "turnout selectivity" variable (see Table 1's third row) in our preferred model of the effects of income on vote choice. This procedure allows our estimates of the effects of income on vote choice to control for the potentially confounding impact that income may have on whether people turn out to vote in the first place.

Independent Variables

As summarized above in Table 1, we measure time in several ways, as a series of dummy variables in the regression models (treating 1952 as the reference category), and also as a continuous variable in which election year is coded 1 for 1952, 2 for 1956, . . . , and 12 for 1996. We use both sets of variables to test for interactions between household income and time.¹⁴ In the course of the analysis, we also use several other year covariates that code recent elections differently, enabling us to test more refined hypotheses about the possibility of recent patterns of change in the effect of income on vote choice.

The main independent variable of interest in our analysis of the 1952-96 series is household income. In keeping with the requirements discussed in the introduction, we measure income as a continuous variable, scaled to 1992 dollars using yearly changes in the Consumer Price Index.¹⁵

TABLE 1: Coding of Independent Variables in the Analysis

Variable (Measurement)	Coding
Variables in the 1952-96 Analyses (N = 12,638)	
Dependent variable: vote choice (dichotomous)	GOP voter = 0; Democratic voter = 1
Voter turnout (dichotomous)	Nonvoter = 0; voter = 1
"Heckman" turnout selectivity variable (continuous)	Predicted turnout probability
Election-year covariate (continuous)	1952 = 1, 1956 = 2, . . . , 1996 = 12
Election years (categorical; reference = 1952)	11 dummies for 1956, 1960, . . . , 1996
Household income (continuous)	Scaled to constant 1992 dollars
Race (dichotomous)	African American = 1; all else = 0
Social class (categorical; reference = nonlabor force participant)	6 dummies: professionals, managers, routine white-collar, self-employed, skilled workers, unskilled workers
Gender (dichotomous)	Men = 0; women = 1
Age (continuous)	Years
Years of education (continuous)	1 year = 1, 2 = 2, . . . , 17+ = 17
Region (categorical; reference = Midwest)	3 dummies: Northeast, South, West
Variables in the 1992 Analyses (N = 895)	
Dependent variable: vote choice (dichotomous)	GOP voter = 0; Democratic voter = 1
Egocentric performance evaluations ^a (categorical; reference = "better than year ago")	2 dummies for "same as year ago"; "worse than year ago"
Sociotropic performance evaluations ^b (categorical; reference = "better than year ago")	2 dummies for "same as year ago"; "worse than year ago"
Waste in taxes ^c (categorical; reference = "a lot")	2 dummies for "some"; "not very much"
Unemployment and jobs ^d (dichotomous)	"Most important problem" = 1; all else = 0
Welfare state ^e (continuous)	7-category Likert item (higher scores → more support for jobs and guaranteed standard of living)
Scope of federal government ^f (dichotomous)	"The less government the better" = 0; "more things that government should be doing" = 1

TABLE 1: Coding of Independent Variables in the Analysis (Continued)

Source: Data in this and all other tables and figures are from the National Election Studies.

- ^a "We are interested in how people are getting along financially these days. Would you say that you (and your family living here) are better off or worse off financially than you were a year ago?"
- ^b "How about the economy. Would you say that over the past year the nation's economy has gotten better, stayed about the same, or gotten worse?"
- ^c "Do you think that people in government waste a lot of the money we pay in taxes, waste some of it, or don't waste very much of it?"
- ^d "What do you think are the most important problems facing this country? . . . Of those you've mentioned, what would you say is the single most important problem the country faces?"
- ^e "Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on their own. Where would you place yourself on this scale, or haven't you thought much about this?"
- ^f "Next, I am going to ask you to choose which of two statements I read comes closer to your own opinion. . . . One, the less government the better; or two, there are more things that government should be doing?"
-

To ensure that the political effects of household income are not the product of a more fundamental socioeconomic cleavage, we also include a number of statistical controls in the model.¹⁶ The most important of these controls is social class, which, if ignored, makes it impossible to test for a spurious association between income and vote choice. The inclusion of income also allows us to address the substantive question of whether income and class voting represent separate types of partisan cleavages.

We measure class as six dummy variables for professionals, managers, routine white-collar employees, self-employed nonprofessionals, skilled workers, and unskilled workers (with non-full-time labor-force participants serving as the reference category). The additional control variables are race (1 = African American, 0 otherwise); gender (coded 1 for women); age and education (both in years); and three dummy variables for region (0 = Midwest).¹⁷

Once we have estimated the effects of household income (and any significant interactions with time) on vote choice for the entire 1952 through 1996 period, we use six additional items available in the 1992 NES survey to analyze in greater detail the possible mediating role of the economic performance, problem, and policy evaluations discussed earlier.

The first two of these items measure retrospective egocentric and sociotropic performance evaluations. As summarized in Table 1, we analyze each of these as a pair of dummy variables (for the responses "same as a year ago" and "worse than the year ago"), with the reference category representing the response "better than a year ago."¹⁸

The next two items measure perceptions of economic problems. The first item asks respondents about their perception of the degree of waste in government taxes. This item is also treated as a pair of dummy variables (for the responses "some waste" and "not very much waste"), with the reference category being the response "a lot of waste." The second item asks respondents to list the most important problem facing the country. We analyze this item as a dummy variable, coded 1 if respondents mention unemployment or job-related concerns as their most important problem, and 0 otherwise.

The remaining two variables in Table 1 measure voters' evaluations of the policy issues discussed earlier. The welfare state item is a 7-category Likert scale summarizing respondents' level of support for "government provision of jobs and a guaranteed standard of living." Our second policy issue is measured by the dichotomous scope of federal government item, coded 1 for the response "there are more things that government should be doing," and 0 for the response "the less government the better."

Statistical Models

We use logistic regression models to analyze the effects of household income on the dichotomous variable measuring voting choice in presidential elections. Our simplest model of vote choice in the 1952-96 period is summarized in equation 1, where \hat{y}_{ij} is the predicted log-odds of voting choice j ($1 =$ for the Democratic and 0 for the Republican candidate) for the i th respondent:

$$\hat{y}_{ij} = \alpha_j + \sum_{t=1}^T \beta_{jt} U_{it} + \theta_j V_i \quad (1)$$

In this equation, the β_{jt} are the coefficients for the main effect of election year t , the U_{it} are a vector of dummy variables for each of the election years in the analysis ($t = 1$ for 1952, 2 for 1956, . . . , 12 for 1996), and α_j is the constant.¹⁹ The single remaining coefficient (θ_j) is for the main effect of household income (V) for the i th respondent.²⁰

In the course of our analyses, we evaluate a series of nested extensions of this model that add various interaction effects between income and time (e.g., for an interaction between income and election year or election year²). Using the -2 log-likelihood statistic (-2LL), we compare the fit of competing models. Provided that one of the income-by-time interaction models provides a better fit to data, it yields

TABLE 2: Fit Statistics for Competing Logistic Regression Models^a of Household Income and Vote Choice, 1952-1996

Models	-2 Log-likelihood (df)
1. Election-year main effect	17,070.43 (12,626)
2. Model 1 + household income main effect	16,766.82 (12,625)
3. Model 1 + ln(household income) main effect	16,810.43 (12,625)
4. Model 2 + (household income) ²	16,764.73 (12,624)
5. Model 2 + household income * election year _{1=1952, 2=1956, ..., 12=1996}	16,763.91 (12,624)
6. Model 2 + household income * (election year _{1=1952, 2=1956, ..., 12=1996}) ²	16,764.32 (12,624)
7. Model 2 + household income * election year _{dummies}	16,746.91 (12,614)
8. Model 2 + household income * election year _{1=1968, 0 otherwise}	16,762.16 (12,624)
9. Model 8 + age (years), education (years), region, ^b social cleavages ^c , and turnout selectivity ^d	15,663.34 (12,591)
10. Model 9 + household income * class	15,655.08 (12,585)

(N = 12,638)

^a Interaction effects are designated by *. Dependent variable is coded 1 for the democratic and 0 for the Republican candidate.

^b Dummy variables for Northeast, South, and West.

^c Main effects of race, class, and gender and their interactions with time (see Brooks & Manza 1997a, 1997b).

^d Heckman correction for the effect of household income on voter turnout.

evidence for change in the effect of income. Conversely, if the model in equation 1 is preferred, it indicates that the effect of income on voting choice has been stable throughout the 1952 through 1996 period.

When we arrive at a preferred model of the effects of income, we add covariates for the main and interaction effects of social-group memberships. As discussed earlier, this is necessary to ensure that the effects of income are not in fact the product of a more fundamental factor, such as social class (see Lipset 1981[1960]). By comparing estimates of the effect of income with versus without controls for social-group memberships, we test this hypothesis.

Once we have analyzed the individual-level effect of household income on vote choice and the aggregate-level effects of change in mean income on election outcomes, we use data from the 1992 NES survey to test hypotheses about what type of economic evaluations explains the impact of income on vote choice.²¹ The 1992 survey includes the range of variables necessary to measure the three types of economic performance, problem, and policy evaluations. We note that because our analysis of the 1952-96 series provides evidence that the effects of household income on vote choice have been stable throughout the entire period (with the single exception of 1968), restricting our explanatory analysis to the 1992 data

TABLE 3: Logistic Regression Coefficients^a (from Select Models) for the Effect of Household Income on Vote Choice, 1952-1996

Models (from Table 2)	Coefficient (S.E.)	
	$\beta_{\text{Hh income (other years)}}$	$\beta_{\text{Hh income (1968)}}$
2. Election-year main effect + household income	$-1.4^* \times 10^{-5} (<.01)$	$-1.4^* \times 10^{-5} (<.01)$
8. Model 2 + household income * election year ₁₉₆₈	$-1.4^* \times 10^{-5} (<.01)$	$-.8^* \times 10^{-5} (<.01)$
9. Model 8 + age (years), education (years), region, social cleavages, and turnout selectivity	$-1.2^* \times 10^{-5} (<.01)$	$-.4^* \times 10^{-5} (<.01)$

will not introduce a bias stemming from an interaction between household income, vote choice, and time.

For the explanatory analyses, we use the model summarized in equation 2. As in model 1, \hat{y}_j is again the predicted log-odds of voting choice j , and Θ_j is the main effect of household income:

$$\hat{y}_{ij} = \alpha_j + \sum_{p=1}^P \beta_{pj} W_{ip} + \theta_j V \quad (2)$$

In contrast to the model used to analyze the twelve election surveys, we now include a vector of covariates (W_{ip}) that measure the three types of economic evaluations discussed in the earlier section of the article. The β_{pj} are the coefficients measuring the effects of these covariates on vote choice in 1992. If the Θ_j coefficient becomes insignificant, the inclusion of these covariates in the model mediates the effect of income on voting choice. Once we have estimated the β_{pj} , we use these coefficients in conjunction with sample means for high- versus low-income groups to test hypotheses about which type of economic evaluation explains differences in their voting behavior (additional methodological details are discussed in Appendix A).

TABLE 3: Logistic Regression Coefficients (from Select Models) for the Effect of Household Income on Voting Choice, 1952-1996 (Continued)

Models (from Table 2)	\hat{p} of Democratic Vote Choice		
	All Years/ 1992/ 1968		
	$\bar{X}_{\text{Hh income}} - 1 \text{ SD}$	$\bar{X}_{\text{Hh income}} + 1 \text{ SD}$	Difference
2. Election-year main effect	.57	.40	.17
+ household income	.68	.50	.18
	.56	.39	.17
8. Model 2 +			
household income * election year ₁₉₆₈	.57	.41	.16
	.68	.50	.18
	.51	.42	.09
9. Model 8 + age (years), education	.38	.25	.13
(years), region, social cleavages, and	.51	.37	.14
turnout selectivity	.32	.28	.04
(N = 12,638)			
Note: Dependent variable is coded 1 for the Democratic and 0 for the Republican candidate.			
* $p < .05$, two-tailed test			

Results

EFFECTS OF INCOME ON INDIVIDUAL-LEVEL VOTING CHOICE

Has household income affected presidential vote choice, and has its effect changed over time? We answer these questions in Table 2, which presents fit statistics for competing models of the relationship between household income and vote choice during the 1952 through 1996 period. These competing models differ in their specification of the effects of income and in whether these effects have changed over time. We start with the comparison between model 1 (including effects only for election year) versus model 2 (which adds to model 1 the main effect of household income). The -2 log-likelihood statistic easily selects model 2, providing clear evidence that household income has affected vote choice in presidential elections since 1952.²²

We compare model 2 with models 3 and 4 to analyze the functional form of the income/vote choice relationship. Model 3 measures the main effect of household income using a natural logarithmic specification (this has the effect of compressing differences in both income level and also the differences in vote choice

between income levels). Model 4 adds to model 2 an income-squared term, the inclusion of which results in a curvilinear effect of income on the log-odds of voting choice. Model 2 is preferred over model 3, demonstrating that taking the log of household income results in a worse specification of the effects of household income on vote choice.²³ The -2 log-likelihood test also shows that model 4 does not improve over model 2's fit, demonstrating that model 4's exponential specification is unnecessary for describing the income/voting choice relationship.

While the preceding results demonstrate that vote choice differs by voters' income level, they do not tell us whether the effect of income has itself changed over time. We evaluate the evidence for change in the effects of household income by comparing model 2 with models 5 through 8. Neither model 5 (which includes a constrained income-by-year interaction) nor model 6 (which includes an income-by-year² interaction) improves over model 2's fit.²⁴ However, model 7's unconstrained income-by-year interactions does yield a significant reduction in -2 log-likelihood at the .05 level.

Given this result, we compare models 7 and 8. These two models have a nested relationship and model 8 restricts the income-by-year interaction to a single election (1968). Model 7 fails to improve over model 8's fit (the -2 log-likelihood difference between the two models is a nonsignificant 15.25, 10 df at the .05 level of significance). The superiority of model 8 provides evidence that any income-by-year interactions are restricted to a single election (1968), with the effect of income being stable across all remaining elections. This result itself represents an important initial finding: Despite dramatic changes affecting both voters and elections since 1952, the effect of income on vote choice has remained unchanged in eleven of the past twelve presidential elections. Model 8 is thus our preferred model of the income/vote choice relationship *without* controls.²⁵

Model 9, which includes a series of controls for social-group memberships (and over-time changes in their voting behavior)²⁶ and turnout selectivity (measuring the prior impact of household income on voting choice), easily improves the fit of model 8. Model 9 is thus our preferred model of the income/vote choice relationship *with* controls.²⁷ By comparing the coefficients measuring the effects of household income on vote choice without controls (model 8) versus vote choice with controls (model 9), we can test whether the political effects of income are independent of those of major social groups in the U.S. (race, class, and gender).

In Table 3, we present coefficients and accompanying calculations (summarizing the effects of household income) for our two preferred models and also for model 2. In the second column, we report the three models' unstandardized logistic regression coefficients for the effect of household income on vote choice in all years except 1968; the third column presents the corresponding estimates for 1968. In model 9, adding the controls for the main effects of social-group memberships, their interactions with time, and turnout selectivity does not explain away the effect of income. Instead, the coefficient for income remains significant,

and the *t*-statistic for comparing the two coefficients (models 8 versus 9) is well below the usual 1.96 value for significance at the .05 level, indicating that we cannot reject the assumption that the two coefficients are identical. These results provide strong evidence that the political effects of income are independent of those of race, class, gender, and their respective interactions with time.

The calculations presented in the remaining columns summarize the magnitude of the effect of household income on vote choice using the following standardized measure.²⁸ We calculate the predicted probability of voting Democratic across a range of ± 1 standard deviations from the mean of household income, first for the entire 1952-96 period (row 1), then for 1992 (row 2), and finally for 1968 (row 3).²⁹ By comparing the magnitude of the income effect in this way, we can directly observe the similarities and differences in the predictions of the three models.

As anticipated by the comparison of coefficients, the estimated effect of household income on vote choice according to all three models is similar in all years except for 1968. For instance, the ± 1 SD effect of income for the entire period is .17 according to model 2, .16 according to model 8, and .13 according to model 9. Taking model 9's estimate as our example, the .13 figure indicates that voters who were a standard deviation poorer than average (\$11,495) were 13% more likely to favor the Democratic candidate than voters at the fixed covariate levels who were a standard deviation wealthier than average (\$60,321). This represents a nontrivial impact on voting choice, especially given that model 9 includes controls for social-group memberships (and also their interactions with time).

The estimates for 1992 are also similar in the three models. This illustrates that the effects of income on vote choice in 1992 are virtually identical to those found in the 1952-96 series as a whole. By contrast, the results for the 1968 election illustrate the difference between model 2 and models 8/9: The effect of income on voting choice is predicted as being smaller than in the other eleven elections in both models 8 and 9 but not in model 2. Our earlier analysis of model fit shows that this difference cannot be attributed to chance alone. But notwithstanding the smaller effect of income in 1968, this result underscores our larger finding: The effects of income on vote choice were very stable in eleven of the past twelve presidential elections.

Aggregate-Level Effects of Household Income on Election Outcomes

The results presented in the preceding section show that the effect of household income on vote choice remained unchanged since 1952 with the single exception of 1968. However, the aggregate-level effect of household income on the outcome

TABLE 4: Logistic Regression Coefficients for the Effects of Household Income, Economic Evaluations, and Ideological Preferences on Vote Choice, 1992^a

Independent Variables	Models ^b		
	1	2	3
Constant	.87* (.12)	-3.02* (.48)	-3.25* (.46)
Household income ($\beta_{\text{Hh income}} \times 10,000$)	-.13* (<.01)	-.05 (<.01)	—
Egocentric performance evaluations			
Same as year ago	—	.10 (.20)	.12 (.19)
Worse than year ago	—	.55* (.21)	.61* (.21)
Sociotropic performance evaluations			
Same as year ago	—	.60 (.45)	.54 (.45)
Worse than year ago	—	1.66* (.43)	1.59* (.43)
Waste in taxes			
Some	—	-.15 (.69)	-.14 (.68)
Not very much	—	-.22 (.18)	-.22 (.18)
Unemployment and jobs	—	.20 (.23)	.24 (.22)
Welfare state	—	.35* (.05)	.36* (.05)
Scope of federal government	—	1.41* (.17)	1.46* (.17)
-2 Log-likelihood	1,187.12	918.58	921.62
df	893	884	885

(N = 895)

Note: Standard errors in parentheses

^a Dependent variable is coded 1 for the Democratic and 0 for the Republican candidate.

^b -2 log-likelihood for null model (including only a constant) is 1,215.81 (df = 894).

* $p < .05$, two-tailed test

of elections may have nevertheless changed due to increases in mean income during the postwar era. We investigate this question by analyzing whether shifts in income have had a significant impact on the advantage enjoyed by Democratic versus Republican party candidates in presidential elections since 1952.

For these analyses, we estimate the predicted impact of changes in average income on the outcome of presidential elections from 1952 through 1996. These estimates are derived using the coefficients of our preferred model with controls (model 9 from Table 2) in conjunction with the year-specific sample means for household income. The figure's top chart shows changes in voters' average household

TABLE 5: Predicted Difference^a in 1992 Vote Choice between Top and Bottom Quintiles of Household Income Distribution

Independent Variables	1 \bar{X} s for Top 20%	2 \bar{X} s for Bottom 20%	3 Difference in Vote Choice
Σ Performance evaluations			-.23 (23%)
Egocentric performance evaluations			
Same as year ago	.37	.33	-.17 (17%)
Worse than year ago	.22	.50	
Sociotropic performance evaluations			
Same as year ago	.24	.17	-.06 (6%)
Worse than year ago	.72	.78	
Σ Problem evaluations			-.04 (4%)
Waste in taxes			
Some	.30	.34	.00 (0%)
Not very much	.03	.04	
Unemployment and jobs	.09	.26	-.04 (4%)
Σ Policy evaluations			-.74 (74%)
Welfare state	3.15	4.08	-.33 (33%)
Scope of federal government	.48	.76	-.41 (41%)
Total difference in vote choice			-1.01 (101%)

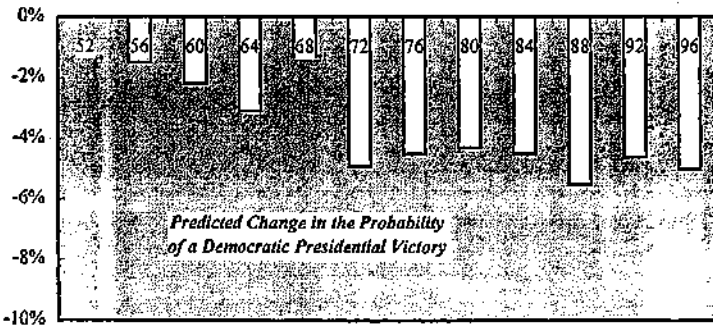
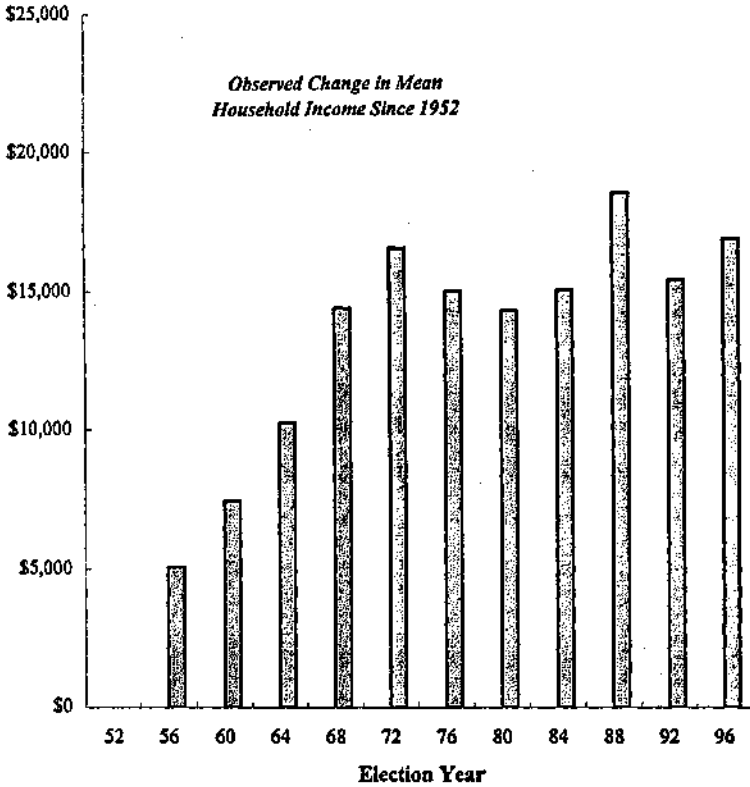
(N = 368)

^a Entries in columns 1-2 are the means (of a row-specific variable) for respondents in the top versus bottom quintiles of the household income variable. Entries in column 3 are the predicted difference in voting choice (in logits) attributable to differences between these means; entries in parentheses are the percentage of the total predicted difference (see last row) explained by row-specific factors.

income since 1952.³⁰ The figure's bottom chart shows the corresponding predicted change in the probability that the Democratic candidate wins in a given election.³¹ These results reveal that shifts in mean income have had a significant effect on elections, providing Republican candidates with a growing electoral advantage.

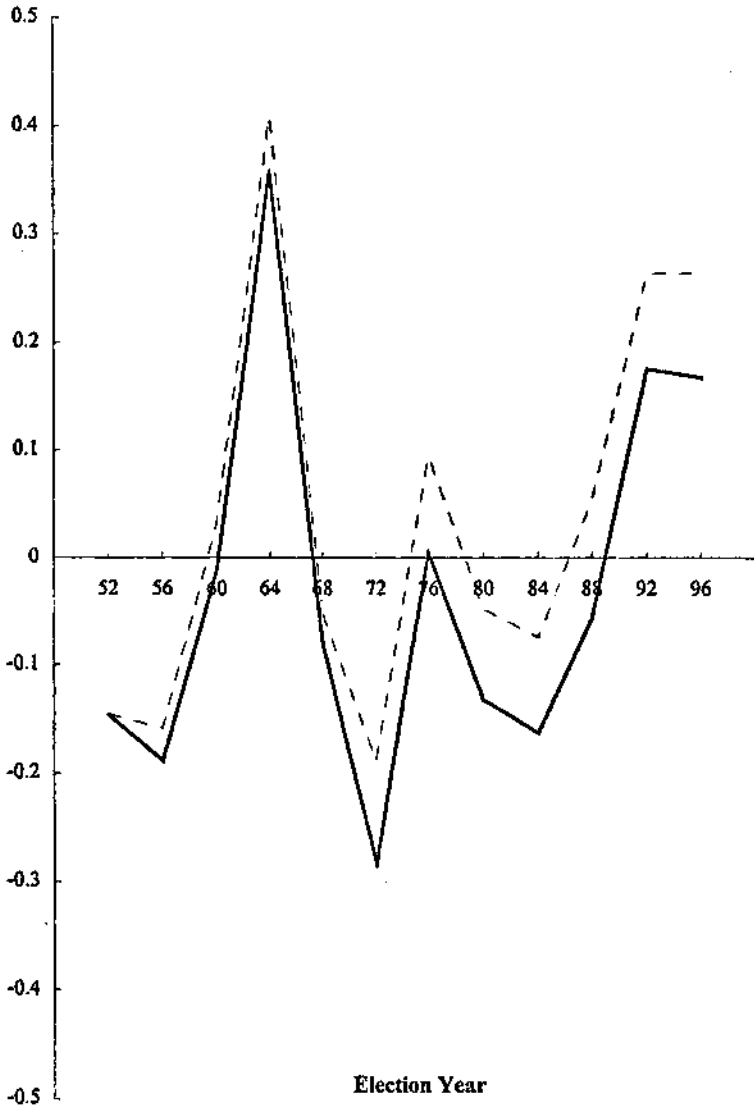
Taking the estimates for 1956 as illustration, the top panel shows that average household income increased by \$5,000 between 1952 and 1956. This shift is predicted as having by itself *decreased* the likelihood of a Democratic victory by nearly 2%. Even by itself, 2% is not a negligible share of the vote. However, the cumulative effects of shifts in income are even larger, given the nature of trends in mean income after 1956. By 1972, the NES data reveal that voters' average household income increased by approximately \$16,000 since 1952 — by itself producing a net 5% increase in the probability of a Republican candidate being elected. However,

FIGURE 2: The Impact of Changes in Mean Household Income on Change in the Probability of a Democratic Presidential Victory, 1952-1996



Note: Changes in the predicted probability of a Democratic victory are measured using the 1952 estimate as the baseline for all calculations.

FIGURE 3: Predicted Outcome of Presidential Elections with and without Taking into Account Changes in Mean Household Income since 1952



Note: Probabilities on the y-axis indicate the predicted margin of victory for the Democratic (positive) versus Republican candidate (negative)

— with changes in mean household income

- - - without changes in mean household income

since 1972, voters' household income levels experienced little net change through 1996 (with the exception of a large, temporary increase in the late 1980s), leading to a relatively stable (but higher) level of Republican party advantage (when compared to the corresponding level in 1952). Notwithstanding this stability, these results imply that if household income increases in the future, we can expect a corresponding increase in the advantage enjoyed by Republican over Democratic candidates.

In Figure 3, we examine in greater detail the cumulative political effects of changes in mean household income. The estimates in this figure show the predicted margin of victory for the Democratic versus Republican candidate in each of the past twelve elections. The solid line represents the estimates when changes in household income are measured in the model; the dashed line represents the estimates when these changes are ignored. By comparing the differences between these two sets of estimates, we can directly observe the effects that change in average household income had on a given election.

Taking the 1972 election as an example, the predicted margin of Richard Nixon's victory over George McGovern is roughly 28% (taking into account ongoing changes in the distribution of household income and the other covariates in the model). Controlling for these changes reduces Nixon's margin to roughly 19%. While Nixon would still have enjoyed a decisive victory over McGovern, change in mean household income between 1952 and 1972 by itself added nearly 10% to his margin of victory. Of even greater substantive note, our results imply that without ongoing changes in household income distribution, George Bush's margin of victory in 1988 would have disappeared entirely, leading to a 53%-47% win for Michael Dukakis. Taken as a whole, these findings reveal that shifts in voters' household income levels have had a large impact on the outcome of presidential elections, substantially magnifying the margin of Republican victories in the 1980s while also reducing the margin of Democratic victories in the 1990s.

Explanatory Analysis of the Mediating Role of Economic Evaluations

What factors explain the effect of household income on vote choice? We begin to answer this question in Table 4, which presents the coefficients for three logistic regression models of vote choice in the 1992 presidential election. The first of these models has only a single coefficient for the main effect of household income. Recall that our earlier analysis established that the main effect of household income was indistinguishable in eleven of the twelve presidential elections (and the coefficient for Table 4's model 1 is virtually identical to the estimate from the earlier analysis of the pooled 1952-96 data set).

Our goal is to shrink the coefficient for household income to nonsignificance, thereby showing that the economic evaluations measured in the model mediate

the effects of income on vote choice.³² In Table 4, model 2's coefficient for household income is not statistically significant, showing that this coefficient ($-.5 \times 10^{-5}$ [s.e. = $.3 \times 10^{-4}$]) cannot be distinguished from 0 (at the usual .05 level) once the coefficients for the six economic evaluation items have been estimated. Corroborating this result, model 3 (which deletes the household income coefficient) does not worsen the fit of model 2 according to the -2 log-likelihood test (at the .05 level).

We now use model 3's coefficients in conjunction with the sample means for top and bottom quintiles of the household income variable to analyze which type of economic evaluation mediates the effect of household income on vote choice.³³ These analyses are presented in Table 5. The first two columns of this table show that the two income quintiles differ significantly (and in many cases massively) in their respective economic evaluations. The estimates presented in Table 5's third column tell us which of these factors play the largest mediating role.

Egocentric and sociotropic evaluations explain respectively 17% and 6% of the impact of household income on vote choice in 1992. For their part, economic problem evaluations account for only 4% of the effects of income. This leaves nearly three-quarters of the effect to be explained by policy evaluations. The divergent preferences of wealthy and poor voters toward the scope of the federal government result in a -.41 logit difference in their vote choice; by itself, this explains 41% of their overall difference in voting choice. Following close behind, differences in policy evaluations of the welfare state explain 33% of the differences between voters in the top versus bottom quintile of the income distribution.

These analyses provide evidence that differences in policy evaluations are the key factor mediating the effect of income on voting choice.³⁴ To summarize the implied causal picture: Household income shapes voters' preferences about the proper size and social-welfare responsibilities of government, in turn leading to contrasting patterns of vote choice among voters at different income levels. The political effects of household income thus represent a *policy-oriented* type of voting behavior in which voters are intrinsically concerned with what they judge to be the rightness or wrongness of a given option, rather than with a policy as a means to achieving some additional goal (such as low levels of unemployment or inflation).

Discussion

This study has analyzed the political effects of household income in U.S. presidential elections from 1952 through 1996. Bringing together past research on economic voting and on trends in income distribution, the analyses presented here begin to fill a series of gaps in our understanding of the political effects of income. While we find that household income has had a significant and generally stable impact on vote choice, it also has had a very far-reaching political impact on the outcomes of elections.

More specifically, changes in mean household income added, on average, 10% to Republican presidential victories in the elections of the 1980s. Without such changes in household income, the win that gave Ronald Reagan a mandate in 1980 would have shrunk to a much closer 5% margin of victory. Of even greater note, had 1988 household income levels been at 1952 levels, Democratic candidate Michael Dukakis would (all else being equal) have been elected president. Moreover, because our statistical models control for class, race, and other potentially confounding sociodemographic sources of income, the political effects of changes in household income levels are attributable solely to income.³⁵ This means that the postwar increase in affluence that continued through the 1950s and early 1970s benefited Republicans in the 1980s while also constraining what would have otherwise been considerably *larger* Democratic victories in the 1990s.

Relying on flawed measures of income and an inability to integrate individual and aggregate levels of analysis, past studies have missed these important developments. In doing so, they have also failed to identify an important causal source of long-term political change. In contrast to variables such as candidate popularity that fluctuate widely over time, mean income changes slowly, while also following an approximately monotonic pattern during much of the postwar era. While income-based political changes fall short of a realignment, they thus represent a source of lasting electoral advantage for Republican candidates.³⁶

Because there are many factors governing their outcomes, Democratic candidates can, of course, be competitive in presidential elections (as Bill Clinton's victories in 1992 and 1996 illustrate). However, our research shows that they must do so in the face of changes that have significantly altered the environment in which elections take place. Overcoming the long-term GOP advantage conferred by rising income is thus one of the key features of the U.S. electoral landscape since World War II.

The Mediating Role of Policy Evaluations

Our analyses also provide the necessary information to understand precisely *why* household income shapes individual voters' behavior. In contrast to the expectations of past research, we find that neither economic performance nor problem-oriented evaluations explain the effects of household income on vote choice. Instead, the critical factor is policy evaluations. Higher-income voters differ at the ballot box because their attitudes toward social welfare and the federal government contrast sharply with the corresponding attitudes of lower-income voters. We find clear evidence that household income shapes evaluations of the normative desirability of various policy options, which in turn influence voting behavior. To express this finding another way: When voters' incomes rise, so too does their likelihood of preferring a smaller federal government and a leaner welfare state, disposing them

to support Republican political candidates. Income-based differences in vote choice thus represent a *policy-oriented* form of economic voting.³⁷

The causal mediation of the political effects of household income by voters' policy attitudes also helps us to understand the historical durability of income-based differences in voting behavior. In particular, for policy evaluations to themselves be a proximate source of candidate choice, voters must also be capable of making judgments about which party's candidate has endorsed or pursued their preferred vision of social policy. In keeping with the expectation of past research (see, e.g., Dalton & Wattenberg 1993; Kiewiet 1983), our findings provide clear evidence that voters possess the capacity to make such attributions. The political relevance of income thus appears to be a well-established and durable feature of voters' alignments with American political parties. The long time frame of our analyses also provides evidence that income-based differences in voting behavior have characterized U.S. presidential elections since 1952, and possibly also since the New Deal elections of 1932 and 1936.³⁸

Taken in sum, the results of this study imply that theories of political behavior should systematically incorporate change in mean income into the analysis of political change. Income is, we contend, a theoretically important causal mechanism for understanding electoral politics. But with the exception of Hibbs's research (1987a; 1987b), previous studies have neglected income as a significant source of political change. However, because Hibbs's research relied on aggregate data to measure the effects of income on major party vote share, it was incapable of measuring what specific type of economic evaluation mediates the political effects of household income. Hibbs assumed (1987b) that the key mechanisms at work were performance and problem-oriented evaluations. This led him to infer that any political party presiding over growth in income would dominate elections so long as they could also avoid excessive public concern about unemployment or taxes.

Our findings about the mediating role played by policy evaluations reveal the flaw in Hibbs's causal interpretation of the effects of income on vote choice. Since 1952, we find that growth in household income *always* benefited Republican presidential candidates because growth in income leads voters to prefer a smaller welfare state and a smaller domestic role for the federal government. The mediating role played by policy evaluations thus implies that unless the Democratic and Republican parties reverse (or converge in) their historical positions along the political cleavage defined by New Deal-style government activism versus economic laissez-faire, Republican candidates will continue to benefit disproportionately by any further increase in voters' affluence.

Notes

1. For instance, in their recent review of political behavior research, Dalton and Wattenberg (1993) provide no discussion of the impact of income on voting behavior despite extensive commentary on the concept of economic voting. The lack of systematic attention to income as a factor affecting voting behavior contrasts sharply with the extensive attention it has received as a determinant of political democracy. Since Lipset's pioneering work (1959, [1960] 1981), numerous studies have analyzed the positive relationship between economic development (and rising income, in particular) and the development of democratic institutions. While research by Muller (1988, 1995; cf. Bollen & Jackman 1995) provides some evidence that income *inequality* may reduce the stability of new democracies, this tradition of research has generally corroborated Lipset's initial hypothesis (see Diamond [1992] for a review).
2. In contrast to research on vote choice and party identification, the effects of income on voter *turnout* has received extensive theoretical and empirical attention (see, e.g., Leighley & Nagler 1992; Rosenstone & Hansen 1993). While our focus in the current study is on vote choice and change in election outcomes, we incorporate the results of past research on turnout by examining the possibility that the income/turnout relationship itself influences the income/vote choice relationship.
3. Axelrod coded as 1 respondents with incomes of \$3,000 or less in early studies (1972), and \$5,000 or less in later studies (1982, 1986). Similarly, Erickson, Lancaster, and Romero (1989) examined the effect of income on presidential voting from 1952 through 1984, coding income as a dichotomy, with 1 indicating membership in the bottom third of the distribution and 0 otherwise.
4. Research on party identification suffers from the same problems. In their analyses of Democratic, Republican, and independent identification, Stanley and his colleagues (Stanley, Bianco & Niemi 1986; Stanley & Niemi 1993) analyze income as a dichotomy (with 1 coded for respondents in the top third of the distribution. Avoiding any such measurement issues, Petrocik's (1987) otherwise groundbreaking analysis of race, religion, and region ignores income as a source of political change.
5. Commentaries offered by political pundits such as Phillips (1990) also demonstrate the importance of these requirements. While Phillips calls attention to the political significance of income and household-level wealth in the 1980s, he provides no direct evidence that changes in income influenced voting behavior or elections during this period. Such journalistic commentaries have also neglected questions about what causal mechanism translates income into voting behavior, thereby failing to advance our theoretical understanding of income as a source of the vote.
6. Our concept of long-term political change is distinguished from the concept of a political realignment. Whereas the realignment concept requires the emergence of a majority party that subsequently dominates elections (see, e.g., Key 1955; Shafer 1991), our more inclusive concept covers any instance in which a party enjoys a new and durable electoral advantage (without necessarily winning every subsequent election). While not guaranteeing victories, sources of long-term political change thus raise the probability of a given political party's candidates winning subsequent elections (all else being equal).

7. The calculations presented in Figure 1 are based on data from the National Election Studies surveys (Center for Political Studies 1995; 1997) that are restricted to respondents who report voting for major-party candidates. They reveal a picture of trends in income distribution comparable to that found using Current Population Surveys data for the U.S. population (see Bureau of the Census 1998), while also illustrating many of the changes analyzed by economists and sociologists in recent studies (see, e.g., Karoly & Burtless 1995; Levy & Murnane 1992; Nielsen & Alderson 1997).

8. For this reason, policy-oriented voting is not always a form of economic voting. However, when policy evaluations are themselves shaped by economic factors such as income, they exemplify a form of economic voting (as illustrated in the earlier path diagram).

9. We note that our discussion of perceived differences in party positions considers only those issues that have substantive relevance to understanding economic voting and the effects of income on vote choice.

10. Our analyses of household income should not be construed as precluding an analysis of individual respondents' income. In fact, a potentially fruitful direction for future research is to analyze whether the political effects of household-level income differ from those of individual respondents' income. While this question may be especially relevant for considering the impact of income inequality within households/families, these issues are beyond the scope of the current study. See Sørensen (1994) and Wright (1997) for general discussions of individual versus household-level issues in stratification research.

11. Although House and Senate races have traditionally been viewed as dominated by factors relating to incumbency advantages, presidential "coattails," and the availability of quality challengers, contemporary research provides evidence for the importance of economic and social-group factors (see, e.g., Abramson, Aldrich & Rohde 1994; Ansolabehere, Brady & Fiorina 1992; Campbell 1993). The presence of such issue voting suggests the potential utility of systematically examining the impact of income in congressional elections.

12. Given that theoretical debates over economic voting in the U.S. relate mainly to major parties and their candidates, our focus in this study is on voters' choice of Democratic versus Republican presidential candidates. A separate analysis of third-party presidential candidates found much smaller (and in many cases insignificant) effects for the relationship between household income and third-party voting choice.

13. There is currently no general solution to controlling for sample selection processes, and subsequent research has established that Heckman-type procedures will not always be satisfactory in addressing problems caused by serious selection bias (see Stolzenberg & Relles 1997; Winship & Mare 1992). However, we note that the estimated coefficients for the models of vote choice presented below (see Tables 2 and 3) are *not* affected by the inclusion of the correction for turnout selectivity. Nevertheless, we retain the Heckman correction in the vote choice models to underscore the point that household income also has a prior impact on voter turnout.

14. While the size of households in the U.S. decreased during the time period under analysis, our use of income-by-year interactions provides us with a partial means of

detecting time-related effects. As an additional test, we also reestimated the effect of household income on vote choice for three separate elections, one occurring early in the NES series (1956), one in the middle (1972), and one near the end (1992). These analyses estimate the effect of income using a modified income covariate that takes into account household size (i.e., income is divided by the number of household members), and they yielded coefficients that were statistically indistinguishable from estimates that ignore household size. The *t*-values for comparing these estimates are 0.12 for 1956, 0.03 for 1972, and 0.00 for 1992, all well below the usual 1.96 threshold that would indicate a significant difference of means at the 0.05 level. (The *t*-value for 1992 is 0.00 because the estimates of the effects of income on voting choice are identical: -1.2×10^{-5})

15. In the twelve NES surveys, the proportion of respondents who did not respond (or were mistakenly not asked) questions about household income is low (under 5%). Measurement error in self-reports of income cannot, of course, be ruled out (as some respondents may underreport while others may overreport their true income). However, our measurement of income as a continuous variable takes into account much more information than past studies' crude, qualitative measures. The likelihood of underestimating the effects of income is thus far lower in the current study than in past research.

16. The largest bivariate correlation among the independent variables in our analyses is .44 (for the association between household income and education), with the next largest being .38 (for the association between professionals and education).

17. These measures have been found to capture the main effects of class, race, and gender (and their significant interactions with time) during the postwar period (see Brooks & Manza 1997b; Manza & Brooks 1998), and they serve as our point of departure in the current study. We also follow past research by employing an occupation-based typology of class; virtually all current research on class and political behavior has used information on occupations to improve over earlier, flawed measures based on income or status (see Manza, Hout & Brooks 1995 for review; see also Brooks & Manza 1997a).

18. Complete question wordings for these and the other economic evaluation items are presented in Table 1's notes.

19. The 1952 election year serves as the reference category in the regression models.

20. As discussed in detail in the results section, we compare this main-effects model with different specifications (e.g., the natural logarithm) of the functional form of the relationship between income and the log-odds of vote choice to test whether there are any significant departures from linearity in this relationship.

21. It is possible that controlling for social cleavage variables such as class will show that the income/voting choice relationship is a spurious one. This would occur if, for instance, class location was the causal factor behind both income and voting choice, and we would have evidence for this scenario if the coefficient for income shrunk to insignificance when variables for class were entered into the model. By contrast, if we observe the income coefficient shrinking when economic evaluations are measured in the model, this indicates that economic evaluations mediate the political effects of income. These two scenarios differ because while it is theoretically possible that class location leads to differences in income, it is implausible that economic evaluations can cause differences in income.

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22. More specifically, the -2 log-likelihood difference between the models (303.61, 1 df) is significant at the usual .05 level.

23. Although model 2 consumes the same degrees of freedom as model 3, model 2 results in a considerably smaller -2 log-likelihood statistic (by 43.61), thereby indicating that model 2 accounts for a larger share of the residual deviance (and is thus preferred).

24. We also evaluated the fit of a model that restricted change in the effect of income to have occurred since 1980 (where the year covariate is coded 1 for 1980, 2 for 1984, . . . , 5 for 1996, and 0 otherwise). The 1.19 (1 df) reduction in -2 log-likelihood was not, however, even close to improving over model 2's fit.

25. While -2 log-likelihood selects model 8 over model 2, it should be noted that these two models yield identical predictions of the effect of income on vote choice in all years except for 1968 (see Table 3).

26. As noted earlier, we have replicated Brooks and Manza's (1997b) analysis of the main effects of these social-group memberships (and their various interactions with time). We take for granted those earlier results, using them as a source of control variables in model 9 to test whether the political effects of household income are independent of the corresponding political effects of race, class, and gender.

27. We compare model 9 with model 10 to test whether the political effects of household income differ by social class. Model 9 is easily selected over model 10 (the -2 log-likelihood difference is not significant), providing evidence that these effects are the same across different class locations.

28. See Kaufman (1996) and Long (1996) for discussions of these and other types of standardizations for measuring the magnitude of effects in categorical data models.

29. While the predicted probabilities for models 2 and 8 are readily obtained, we derive the corresponding probabilities for model 9 by holding age and education at their means and using the following fixed levels of class (non-labor force participants), race (nonblacks), gender (men), and region (Midwest).

30. Because mean income in all subsequent years is larger than in 1952, changes in mean income for these years are all positive, and the value for 1952 is 0.

31. We derive these predicted changes in probability by first calculating the expected probability of a Democratic victory for a given election using model 9. We then recalculate the expected probability of a Democratic victory using the 1952 mean for household income and the year-appropriate means for all other independent variables. The difference between these two probabilities yields the predicted change in the probability of a Democratic victory that is attributable to change in average household income between 1952 and a subsequent election.

32. These explanatory analyses use data from the 1992 National Election Study. In contrast to surveys of other presidential election years, the 1992 survey contains the full range of items we use to measure the three types of economic evaluations (see Table 1). However, we also conducted additional analyses of other recent election years to corroborate the generalizability of the findings we obtain from the 1992 NES data. These analyses present a consistent picture of the respective roles played by performance, problem, and policy evaluations. (See Appendix 2 for analysis of the 1980 NES data.)

33. As noted in Appendix 1, comparisons can also be made between other intervals of the income distribution. For instance, our comparison between the top and bottom halves of the income distribution reveal predictably smaller differences between covariate means but nearly identical estimates of the relative impact of each of the six economic evaluation factors on explaining income-based voting differences. A table with these results is available upon request from the authors.

34. We conducted additional analyses with data from the 1980 NES to examine whether relatively high levels of public concern about issues relating to welfare, government size, and taxes/budget deficit in 1992 had any effect on our substantive findings: Whereas public concern about issues relating to welfare, taxes, and government size were relatively high in 1992 (just over 20% of NES respondents ranked these issues as the "most important problem"), these issues elicited far less public concern in 1980 (where the corresponding figure is 8%). Although the NES item measuring attitudes toward the scope of the federal government is available only in 1992, our analyses of 1980 provide complementary results. As presented in Appendix 2, differences in policy evaluations among wealthy versus poor voters again account for the lion's share (76%) of their predicted difference in voting choice. In the absence of the NES item measuring attitudes toward the scope of the federal government, evaluations of the welfare state appear to serve as a proxy, suggesting the importance of analyzing policy evaluations into their component parts (so as not to overestimate the role played by welfare-state attitudes *per se*).

35. The causal independence of the effects of income and class on voting choice is important in light of the common assumption that income-based voting is equivalent to class voting (see Lipset [1960] 1981). In comparison to class, income represents a distinct political cleavage, and changes in income distribution shed greater light on understanding the causal sources of Democratic versus Republican party advantage in presidential elections in the postwar U.S.

36. Our study also has two points of relevance to sociological research on the "New Federalism" (Grant 1995; Grant & Wallace 1994) that analyzes the causes and consequences of the devolution of tax responsibilities and policymaking authority from the federal government to the states. First, our findings reveal that the political effects of income on voting behavior in national elections are stable in the face of the rising political importance of state-level policy conflicts and decision making. Second, upper-income voters' preferences for smaller government and fewer social-welfare programs exemplify the ideological agenda of the New Federalism, and it is likely that the growing number of these voters — and their high rates of turnout in comparison to poor voters — has

APPENDIX A: Decomposition of the Sources of Difference in Income Groups' Voting Behavior

In the third set of the analyses developed in this article, we test hypotheses about the factors that mediate the impact of household income on vote choice in the 1992 presidential election. For these analyses, we use a regression decomposition to compare voting differences between household income quintiles that is similar to those used to compare group-based differences with other dependent variables (e.g., Jones & Kelley 1984). See also Teixeira (1987) for an example of a probit decomposition of sources of change in voter turnout, or Brooks and Manza (1997a) for an example of a logit decomposition of the factors that explain differences in presidential voting choice between professionals and managers.

The starting point of our analysis is equation 3, which is derived from the earlier equation 2:

$$\bar{y}_{qj} = \alpha_j + \sum_{p=1}^P \beta_{pj} \bar{W}_{qp} \quad (3)$$

In equation 3, the average predicted logit for 1992 voting choice (\bar{y}_{qj}) is expressed as a function of the constant (α_j), the p logistic regression coefficients (β_{pj}) and the covariate means (\bar{W}_{qp}) for respondents in the q household income quintiles (where $q = 1$ for the first quintile, 2 for the second quintile, . . . , and 5 for the fifth quintile). While household income is measured as a continuous variable in our regression models, we make comparisons across income quintiles to facilitate the use of a group-based decomposition. We found in practice that this decomposition yielded very similar results to those found by using the top versus bottom halves of the income distribution (or, alternatively, making comparisons between income quintiles other than the first and fifth).

Proceeding with the decomposition, we can now rewrite equation 3 to apply to either the first income quintile, where $q = 1$ (equation 4a), or the fifth income quintile, where $q = 5$ (equation 4b):

$$\bar{y}_{1j} = \alpha_j + \sum_{p=1}^P \beta_{pj} \bar{W}_{1p} \quad (4a)$$

$$\bar{y}_{5j} = \alpha_j + \sum_{p=1}^P \beta_{pj} \bar{W}_{5p} \quad (4b)$$

$$(\bar{y}_{1j} - \bar{y}_{5j}) = \sum_{p=1}^P \beta_{pj} (\bar{W}_{1p} - \bar{W}_{5p}) \quad (4c)$$

APPENDIX A: Decomposition of the Sources of Difference in Income Groups' Voting Behavior (Continued)

Subtracting 4b from 4a yields equation 4c, which allocates the average predicted difference in vote choice (in logits) between the top and bottom income quintiles into the effects of the individual factors measured by the covariates in the model. Guided by equation 4c, we can use the logistic regression coefficients (see Table 4) and sample means for the top and bottom income quintiles (see Table 5) to perform the relevant calculations.

For these calculations, we first multiply the means of the independent variables for the top income quintile by the model's coefficients; we then multiply the corresponding means for the bottom income quintile by the same coefficients, subtracting the second set of products from the first. We convert the estimated effect of each covariate into a percentage to obtain the proportion of the total predicted difference in the log-odds of favoring the Democratic over the Republican candidate (for top versus bottom income quintiles) that is explained by a specific covariate (see Table 5).

increasingly influenced national politics, possibly by pushing both parties toward support for devolution.

37. Because there are multiple causes of variation in policy evaluations, not all instances of vote choice that have as their proximate cause policy evaluations represent economic voting. But as discussed earlier (see notes 8 and 21), the causal status of policy evaluations in the current analysis is as a variable that mediates the effects of household income. These causal interrelationships mean that an economic factor (household income) is itself a source of voters' evaluations of government policy, and were voters' income levels to change, their policy evaluations would subsequently be affected as well.

38. While our analysis is restricted to the U.S., there are some grounds for expecting that the political effects of income are even larger in other Western democracies. For instance, American voters are less likely than their European counterparts to blame government for macroeconomic conditions (Lewis-Beck & Eulau 1985), implying that European voters may weigh income-related considerations more highly when deciding which candidate or party to support.

APPENDIX B: Predicted Difference^a in 1980 Voting Choice between Top and Bottom Quintiles of Household Income Distribution

Independent Variable	1	2	3
	\bar{X} s for Top 20%	\bar{X} s for Bottom 20%	Difference in Vote Choice
Σ Performance Evaluations			-.05 (9%)
Egocentric performance evaluations			
Same as year ago	.19	.34	.10 (-17%)
Worse than year ago	.30	.45	
Sociotropic performance evaluations			
Same as year ago	.05	.18	-.15 (26%)
Worse than year ago	.91	.80	
Σ Problem Evaluations			-.04 (7%)
Waste in taxes			
Some	.18	.23	.03 (-5%)
Not very much	.01	.04	
Unemployment and jobs	.06	.13	-.07 (12%)
Σ Policy Evaluations			-.44 (76%)
Welfare state	2.20	3.21	-.44 (76%)
Scope of federal government	—	—	—
Total Difference in Voting Choice			-.58 (101%)

(N = 256)

^a Entries in columns 1-2 are the means (of a row-specific variable) for respondents in the top versus bottom quintiles of the household income variable. Entries in column 3 are the predicted difference in voting choice (in logits) attributable to differences between these means; entries in parentheses are the percentage of the total predicted difference (see last row) explained by row-specific factors.

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