Do Voters Really Care Who Gets What?: Economic Growth, Economic Distribution, and Presidential Popularity

This research offers a new theoretical perspective on economic voting. There is a longstanding debate on whether voters are: 'sociotropic' voters , i.e., basing their vote on the state of the national economy; or 'pocketbook' voters, i.e., basing their vote on the state of their own finances (Kiewiet 1983, Kinder & Kiewiet 1979). We believe that this debate can be reduced to asking what information voters use to form expectations about their own pocketbooks in the future. We argue that self-interested and rational voters should not look to a crude measure of the national economy as the best information of future economic benefit to expect from the incumbent. In essence, growth is not enough information for any given voter's economic future. Instead, we argue that voters should look for economic indicators that provide them with information about growth **and** about how growth will be distributed. However, we demonstrate that voters fail to do this in evaluating presidential performance. We examine presidential approval over time across different demographic groups of voters, and over different measures of economic performance using a novel measure of economic performance: the average wage of different socioeconomic groups.

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1 Introduction

That the state of the economy has an impact on elections, both congressional and presidential, has been accepted folk-wisdom for some time (Kramer 1971, Tufte 1978). However, the debate over the mechanism by which this happens has not been settled. There is a large literature that has followed on the work of Kiewiet (1983) and Kinder and Kiewiet (1979) which examines whether voters react to the state of the national economy or to the state of their own pocketbook. That work has more or less reached a consensus consistent with Kiewiet's finding that voters pay attention to the national economy rather than their own pocketbook. There is also a large literature that examines whether voters are prospective or retrospective, with MacKuen, et-al (1992) providing evidence for a prospective point of view.

A much smaller literature exists that posits that voters view the economy through a group perspective (Kinder, Adams & Gronke 1989, Kinder, Rosenstone & Hansen 1983, Mutz & Mondak 1997). Rather than examining the state of their own pocketbook or the state of the national economy, these authors posit that voters evaluate the economic performance of different groups – blacks, women, union-members, etc – in making their political judgements.

In this paper we offer an explicit theory of why voters would look at the economy to form political judgements, and a theory about what aspects of the economy voters would look at. As a prescription, or strategy, for voters, we think our theory is an advance. As a description of voter behavior, we show that voters show suprisingly little interest in the distribution of economic gains. The theory we propose has testable empirical implications. The simplest theory of economic voting was stated by Key (1966) who argued that rational voters would punish incumbents for poor economic performance. The theory has evolved in different directions since then. There is the aforementioned sociotropic versus pocketbook debate. And there is the rational partisan versus opportunistic voter strain (Alesina, Roubini & Cohen 1997). But the core issue of what the objective function of the voter is has not been addressed very clearly. While some have tried to argue that the sociotropic versus pocketbook debate is about what or whom voters care about (self or others), other scholars have interpreted it as a debate about what information voters use. A voter could rationally care about his own pocketbook, but think that the state of the national economy

is a better indicator of the incumbent's competence; and hence look to the national economy rather than his pocketbook when voting since the national economy will best reveal whether or not the incumbent can provide future growth for the voter's pocketbook.

We start with the assumption that a voter is interested in maximizing his or her own economic well-being. We do not regard this as a controversial assumption. We believe voters will have other interests. And those other interests could include an altruistic desire for others to be well off, or a concern for fairness.[1] However, as a basic assumption, we think we are on solid ground believing that people prefer an incumbent who increases their income or wealth over one who does not, ceteris paribus. Given this assumption, all questions about what aspect of the economy voters look at in making their political evaluations reduce to asking what economic measures are the best predictors of the voter's future income. We argue below that the best available measures of this will be measures of how the economy performs for persons in economic circumstances similar to the voter's. Before proceeding to this discussion, we briefly consider past research on economic voting that has considered the role of groups.

2 Previous Literature Considering Groups

It is of course not new to think about the role of groups in voting or in politics. Early work on voting in fact considered groups to be of paramount importance. The information an individual received was expected to be filtered through groups; and the individual was expected to interpret the information from the perspective of the group (Campbell et al. 1960). Groups for the voter in our view, as we will describe below, are merely a measurement device, not a filter. They allow the voter to observe a relevant measure of how the economy is performing. And, they allow the researcher to measure how the economy is performing in a way that is relevant to the voter.

Two articles by Kinder and various co-authors were the first pieces to explicitly try to incorporate the economic performance of groups into a model of economic voting (Kinder, Rosenstone & Hansen 1983, Kinder, Adams & Gronke 1989). They posit that voters may base their likelihood of voting for the incumbent on how well *different* groups in the economy have done, and they test the hypothesis that a voter votes based on how well groups that he or she identifies with or belongs

to have done economically. Utilizing data from the 1984 ANES and the preeceeding pilot study, they are unable to find that the economic state of groups matter. However, they have no actual measure of the economic performance of any group. They rely on the respondent's perception of how each group has performed economically.

Diana Mutz and Jeffrey Mondak (1997) utilize the 1984 South Bend survey to see if voters consider economic perceptions of their own group or other groups. While more explicitly looking for effects of group economic performance, they essentially replicate the results of Kinder and his colleagues. They do not find that voters weight their perception of group economic performance in their vote-choice. But again, it is perception of group economic performance they are measuring. They do not actually measure economic performance.

3 A Theory of Economic Voting

We have a theory about why people are economic voters. They believe that they are choosing among presidents with different economic policies. The economically based reason to prefer one presidential candidate over another is to believe that one candidate will produce different economic outcomes than another candidate. Each candidate is presumed to have some level of competence that will produce a different level of economic growth. However, as politics is about 'who gets what', each candidate is also presumed to be likely to distribute growth differently. So a voter believes that a president produces a level of growth, *and* a distribution of that growth among persons in the economy. Growth can be distributed differently among persons based on their place in the income distribution, their skill level, their region, their industry, or other factors. A combination of growth and distribution determines the economic future of any individual. The voter infers the incumbent president's type (i.e, the president's combination of competence and distributional impact) by observing: a) the overall growth rate of the economy (the net change in total production); and b) the change in income of persons sharing the voter's relevant economic characteristics. Thus whereas in the Kinder-etal and Mutz-Mondak formulation voters looked at groups out of a sense of social justice or altruism, in our theory voters look at the economic performance of different groups not out of a sense of social justice or altruism – but out of self-interest. The voter assumes the president

will behave the same way if elected for another term. The voter's likelihood of approving of the president increases if the voter believes that the president is likely to increase the voter's income in the next period.

Thus our voters are in some sense more sophisticated than previously posited economic voters: our economic voters are not naive enough to believe that aggregate economic growth necessarily implies that they themselves will benefit. And, they are sophisticated enough to know that under different presidents the pattern of distribution of economic growth may differ in predictable ways. We of course need to explain how they would make such predictions.

So while the group-perspective in the voting literature was replaced by a model of an individualistic cost-benefit calculator by Fiorina (1981) in *Retrospective Voting in American National Elections*, the calculator has generally been assumed to follow a rather naive algorithim. To be blunt, we argue that the calculator has been assumed to calculate the wrong quantity. We think that rational, utility maximizing voters could not be so ignorant as to look at *only* a single measure of economic growth and assume that this is the best available indicator of how well the incumbent is managing the economy in their interest. As we demonstrate below in the paper with a series of simple graphs, the voter does not need a complex model of the United States macro-economy to know that economic growth (the increase in the production of goods and services) could be quite robust, but that the wages of workers could be quite flat. And if all of one's income comes from wages, then productivity increases and rising gross domestic product are worthless if they are not reflected in those wages.

The above distinguishes us from other theories of economic voting because we do not think that voters simply prefer economic growth. And for the same reason it distinguishes us from almost all other past empirical work.[2] Our research is different from previous work incorporating groups because no previous work attempted to measure the economic performance of different groups, rather they all relied on the voter's perception. More important is our interpretation of groups as instruments for the voter to measure the effect of economic performance on the voter. Were it not for the assorted idiosyncratic factors associated with a voter's personal change in economic fortune, there would be no reason according to our theory for the voter to look at the economic performance

of any group.

So we can summarize the ground we have covered thus far as follows. One, we think that voters use information about the economic performance of groups to identify the type of incumbent in office and thus predict the impact of that incumbent on the voter's own economic future. Two, we measure group economic performance (using wages of different groups, income-shares of different groups, and mean income of different groups) and assume that the voters are informed in some way about group economic performance. Three, we offer testable implications of the theory that voters are not looking at the entire economy, but rather the portion of the economy that best measures how the economy is performing relative to their own interest and thus gives them the best predictor of the incumbent's type and whether or not they wish to choose a different incumbent.

4 Notation and Measurement

In the usual model of economic voting, the voters observes national economic output in the current and previous periods (Y_t and Y_{t-1}). The voter uses these 2 observations to infer, or update, the competence of the party in power, call it party 1 (c^1): the growth rate they can deliver. Based on previous observations, the voter has a belief about the competence of party 2 (c^2). If $c^1 < c^2$ then the voter votes for party 2.

But if politics is about who gets what, then this is a view of a very non-political voter. The distribution of Y_t should come into play in the voting choice. Assume that we have two groups of fixed size in society, the poor and the rich. The income of the j^{th} group, in this case the poor, would be given by $Y_t \times s_j$, where s_j is the proportion of income going to the j^{th} group. A Rawlsian voter would be trying to maximize this product (Rawls 1971). And a poor voter trying to maximize their own income would also be trying to maximize this product.[3]

Now assume electoral competition by two parties, one of the left (L) and one of the right (R). Then each party has a level of competence: c^L and c^R, respectively. But each party also has a prefered value of s_j: s_j^L and s_j^R. We treat s_j as exogenous. It may come from a party's somewhat sticky reputation, or from the party's economic base of support. Economic voters in group j would

vote based on the values of c^L, s_j^L, c^R, and s_j^R. By observing consecutive values of Y, and observing the products $Y_t \times s$, the voter can infer all of these values.

To repeat, we argue that self-interested and rational voters do not look to the national economy as the best indicator of future economic benefit to expect from the incumbent. In essence, growth is not enough information for any given voter's economic future. Instead, we argue that voters will look for economic indicators that provide them with information about growth **and** about how growth will be distributed, about s_j. People care not just about how big the economic pie is (Y), but as in all politics, they care about what part of it they get ($Y * s_j$). And this should affect vote choice and, more generally, evaluations of the incumbent.

Then how should the economy predict voters' vote-choices? And, in the absence of observing vote-choices (which are rare events), how should the economy predict voters' assessments of the performance of the president? To answer this question, we consider whether and how individuals that are situated at different places in the economy respond to different aspects of the economy. If voters care about the distribution of economic gains (losses), then different groups of voters should respond differently, and respond to different aspects of the economy as indicators of how the president is handling the economy in the voter's interest.

There are many ways for individuals to see themselves situated in the national economy or equivalently, many ways to define the set that j is indexing. Voters might perceive their self interest by looking at the condition of citizens at similar places in the income distribution (poor versus rich), with similar skills (eligible for similar kinds of and similar paying jobs), in similar occupations or industries, or in the same state or region. We assume that voters assess their economic future by looking at how others in these groups are doing. If they are doing well, then the voter's best information is that the president is managing the economy to distribute growth to the voter's group and ultimately to benefit the voter; $Y * s_j$ for the incumbent president is larger than the anticipated $Y * s_j$ of the opposition party candidate. Voters may perceive that indicators of their self interest lie in the economic well being of any or some combination of these groups. In this paper, we consider income distribution and skill and education levels.

5 Empirical Implications

Voters looking for information about how the president is managing the economy in their self interest need economic information. And if voters assess their economic self interest by looking at the conditions of people in their income bracket, the most obvious way to assess our theory is by looking at the effects of increased after-tax income and wealth going to a citizen's income group. We argue that poor people measure their economic performance based more on income than rich people do: rich people measure their economic performance based not only on income, but also on the accumulation of wealth. In accounting terms, these can be different. If the value of a stock appreciates, there may be no increase in income - but the amount of one's wealth has increased. Since poor persons in the United States have almost no wealth, we expect them to be much less sensitive to aggregate economic measures which include wealth than are rich people. Similarly, since rich people view income as only part of their economic health, they should be less sensitive to measures of income than they are to measures of wealth, or at least less sensitive relative to poor people.

If the relevant economic information is the performance of others with similar skills, or working in similar occupations or the same industry, or who live in the same state or region, then changes in their group's income or unemployment level may best indicate the president's distributional type and predict a self-interested vote. Citizens in jobs experiencing increases in wages are likely to infer that the president manages the economy in their self interest, for example. The job may be associated with skills (which allow individuals to move across occupations and industries), with a specific occupation (which may exist in multiple industries), or with an industry. In each case, group wages compared to aggregate economic indicators such as gross domestic product provide them with information on the share of the economic spoils directed to them. Similarly, unemployment rates by industry or region may be relevant for assessing the president's distributional type. When a state experiences low levels of unemployment, for example, voters may infer that the president is managing the economy in their interest, i.e., that their future prospects for gainful employment are very rosy.

Whatever the group, however individuals are situated in the economy, economic indicators

that provide information to voters about a president's distributional type will either affect members of different groups in different ways, as in the first case above, or they will be group specific, as in the second case. This means that models of elections and of aggregate approval, which necessarily limit effects to the national economy, can tell only part of the story. Further, they offer no evidence for or against our hypotheses. In essence, the heterogeneity of the effects of the economy on voters preferences is assumed away (or at least ignored) in models of aggregate presidential approval. This is not a problem if we are interested in estimating average effects of the economy on approval, but if we are interested, as we are, in understanding the mechanism relating the economy to voter choices, it provides an incomplete and misleading picture.

5.1 Design

If aggregate analyses provide no information about the proportion of economic success going to a group what can we do? We offer three ways that we might test the hypothesis that citizens base their evaluation of the president on the distribution of economic spoils and their resulting inference as to the distributional type of the incumbent president. First, at the aggregate level, we can *separately* model the presidential vote share or approval ratings of *each* group as a function of national economic indicators, including measures of income and wealth.[4] These models look like typical models of aggregate votes or approval, but by separately estimating them on j subgroups of the electorate, we allow for the self-interested heterogeneity in responsiveness to the economy that our theory predicts. The form of the approval model is given by:

$$A_{j,t} = \beta_{j,0} + \beta_{j,1}\ A_{j,t-1} + \beta_{j,2}\ X_t + \epsilon_{j,t}$$

where:

- $A_{j,t}$ is the approval rating of the j^{th} group at time t.
- X_t is a set of national economic measures whose effects may be measured in changes or levels.

This design allows us to assess heterogeneity and self-interest by comparing the effects of the same economic indicators across different groups and by comparing the overall fit of the model

across groups. If the fit is better in some groups, or if the effect of X_t is different across the j subgroups, there is support for the hypothesis that different voters look at different aspects of the economy. For instance, if poor voters have strong political reactions to changes in wages, while rich voters have strong reactions to changes in the stock market, then we will know that voters are capable of being more sophisticated than to simply look at an arbitrary scalar measure of macro economic performance independent of their own economic circumstances. The data requirements for this design are the least burdensome of the three approaches we consider. In particular, while survey marginals of approval or vote choice by group are required, only widely available macro economic measures are needed.

The second design strategy is a pooled time series cross sectional design, where the cross section is the group and group specific economic measures, here group wages, are added to the model above.

$$A_{j,t} = \beta_0 + \beta_1 \; A_{j,t-1} + \beta_2 \; X_t + \beta_3 \; Z_{j,t} + \epsilon_{j,t}$$

where:

- $A_{j,t}$ is the approval rating of the j^{th} group at time t.
- X_t is a set of national economic measures whose effects may be measured in changes or levels.
- $Z_{j,t}$ is a set of group specific measures of the economy, such as group wages, whose effects may be measured in changes or levels.

Note that in contrast to the first research strategy, the βs are not subscripted by group. However, other than the desire for some level of parsimony, β_2 in the model above, the coefficient of national economic measures, could be allowed to vary across groups and as we described above, we have theoretical reasons to think it would.

Here the theoretical linkage between the group's share of the economic pie and our measure of the group's distributional spoils is more direct. In the first strategy, we assume the national measures provide different information to different voters about their group's share of the economic

pie, and test whether the relevance of national measures varies by group in predictable ways. In this design, the measurement is exactly the distributional spoils ($Z_{j,t}$). Each group's approval ratings (or vote shares) are a function of economic indicators that vary by group and over time. We can thus assess the self interest hypothesis by noting the effect of these group specific measures. The data requirements to estimate this model are much harder to satisfy than for the first specification. Here we need to find economic measures specific to identifiable groups. This restricts our ability to estimate this model to a shorter time period than the first model.

The final design strategy is to model *individual* approval as a function of either: a) group specific economic indicators or; b) interactions involving group identifiers and national economic conditions. Thus the economic measures, whose effects we expect to vary across groups, enter the individual level model in much the same way as in the aggregate level models. We include measures of the national economy interacted with the group-specific characteristics of each individual respondent. For instance, we can allow the effect of real disposable income to be unique for individuals who are wealthy (in a particular group j) by including an interaction term for real disposable income with wealth.[5] And we include the appropriate group-level economic measures on the right hand side for each respondent. For example, we include the mean changes in wages of persons in the respondent's cohort and education level.

$$A_{i,j,t} = \beta_0 \ + \ \beta_1 W_{i,t} \ + \ \beta_{2j} \ X_t * I_{j,t} \ + \ \beta_3 Z_{j,t} + \epsilon_{i,t}$$

where:

- $A_{i,j,t}$ is the approval of the i^{th} respondent at time t, who is a member of group j.
- W_i is a set of variables measuring politically relevant characteristics of the i^{th} individual.
- X_t is a set of national economic measures whose effects may be measured in changes or levels.
- $I_{j,t}$ is an indicator of an individual's group, j.
- $Z_{j,t}$ is a set of group specific measures of the economy whose effects may be measured in changes or levels and is matched to each individual i according to his or her group, j.

Because wages and other group specific economic measures vary both over time and by group, we can assess self interest and heterogeneity by assessing the significance of β_3, the coefficient of the group-specific economic measures. In addition, the inclusion of interaction effects between aggregate economic measures and the respondent's group membership allows us to test for differential responses to the same measures and thus also provides information on the validity of our theory.

This strategy requires pooling individual survey data over time, to ensure variation in national economic indicators. This limits the analyses to groups and economic indicators easily identified in individual level survey data. But it offers three advantages over the macro level strategy. First, it allows us to take advantage of the wealth of information available and relevant to individual political evaluations. Second, it allows us to directly model vote choice, even with survey data on few presidential elections. Third, it allows us to directly assess individual level behavior.

In the analyses below, we follow the aggregate level strategies and model approval. We describe the data in the next section, then present our findings.

6 The Data

6.1 Presidential approval data.

Presidential approval data come from two sources and are used in three ways. First, we use published Gallup survey marginals of presidential approval broken down by income. Published survey marginals provide approval data for 3 income groups – low, middle, and high – from the first quarter of 1965 through the fourth quarter of 1996 (Ragsdale 1998). The low income category designates respondents whose income fell at or below the poverty line; medium income category respondents gave incomes around the national mean income; the high income category includes respondents giving the highest income brackets given by Gallup. These approval time series are used to test our theory using the first modeling strategy – using aggregate level time series analysis and national economic measures.

Second, we construct education subgroup time series by aggregating CBS/NYT and (a subset of) Gallup survey data. Education serves the dual function of approximating income groups and

also representing skill level.[6] These approval time series are paired with group wages and used to test our theory using the second modeling strategy.

6.2 National Economic Measures: The $\mathbf{X_t}$

We look at changes in *income* and *wealth* separately to see if different types of voters will respond to each differently. People lower in the income distribution will be more dependent on income, people higher in the income distribution are those more likely to have wealth and thus be affected more by changes in aggregate wealth. Aggregate measures of these two variables are readily available. Increases in real disposable income are just that: only measures of income (Hibbs 1987). But changes in gross domestic product (GDP, per capita) are more likely to pick up changes in wealth. We present real disposable income and real GDP per capita in Figures 1 and 2.[7] The two measures are strongly correlated in levels, but only weakly correlated in changes (they enter our models in changes), for changes $\rho = .511$ from 1965 through 1996.

[Figures 1 and 2]

So, if we model the approval ratings of poor people as a function of changes in GDP we do not expect as good a fit as when we model the approval ratings of poor people as a function of changes in real disposable per capita income. However, when we do the same for rich people we expect to get the better fit when modeling their approval ratings as a function of change in GDP than as a function of change in disposable income.

In addition to these measures of national economic performance, the effects of inflation and unemployment appear to be robust predictors of the standing of the president in the public arena: increases in inflation and in unemployment drive down approval ratings, while decreases similarly boost a president's popularity (MacKuen, Erikson & Stimson 1989, MacKuen, Erikson & Stimson 1992, Beck 1991).[8] We include these aggregate measures of economic performance.[9] Specifically, we include the current rate of inflation and current change in the unemployment rate. This treatment is fairly standard, although some analysts have looked alternatively at changes in inflation and levels of unemployment or deviations from expected inflation or the natural rate of

unemployment.

6.3 Group Specific Economic Measures: The $\mathbf{Z_{j,t}}$

In this analysis we consider only one direct measure of distributional effects: group wages ($Z_{j,t}$ in the model specification). Wages are a basic indicator of economic performance. And wages vary across groups of voters, and at the individual level wages are the most readily available piece of economic information at voters' disposal. We also know that wages of workers in the same level of education move together.[10] Further, there is a consensus that the return to education has increased in the economy; (or, that the wages of the poorly educated have fallen relative to the wages of the more highly educated (Mishel, Bernstein & Schmitt 1999)). This suggests the importance of education as a measure of human capital.

Using the Current Population Survey's Outgoing Rotation Groups, we construct a mean-wage-path for each of our 4 education groups over time. The CPS is a monthly survey of approximately 50,000 households each month. Each household is surveyed for four consecutive months, then dropped from the survey for eight months, then resurveyed for four consecutive months. In the outgoing rotation month for each household, the respondent is asked a battery of questions about wages, hours-worked, and earnings. Thus each month approximately 50,000/4 respondents are asked about wages. Using the Outgoing Rotation files, we compute the mean of wages for each group for each quarter from 1979 thru 2000.[11] For instance, we look at the mean wages in each quarter of respondents with a high-school level of education.[12] [13] We are looking at wages of individuals to form the average wage of the education group, not of households.

Figure 3 shows the performance of wages over the time period we are studying. While real wages were almost flat over the entire period, the disparity in wages between different groups shows significant variation. The real wages of people without a college degree actually fell during this time period. Even workers with high school degrees saw their wages drop by approximately 12% in this period.

[Figure 3 Here]

We use the wage paths as direct measures of the realized economic gains of respondents in

each group, so for the j^{th} group, wages represent $Y * s_j$. They provide the amount of wages – the economic spoils – groups of citizens receive under a particular administration. In turn, they provide information about the president's distributional type and allow us to test our hypotheses. The group wages enter the aggregate models as time series that are matched with the approval ratings of each education group. They also enter the individual level model. The wage value associated with an individual is determined by the respondent's group membership. In both cases, the significance of group wages provides a direct test of our hypothesis that voters assess the president's management of the economy in terms of their self interest.

6.4 Events, Administrations, and Technical Issues

To account for other variation in approval we add an events series to the aggregate model.[14] In addition, we allow for mean levels of approval to differ by administration and include "honeymoon" controls for the first quarter of each administration.

Anytime approval is modeled, the analyst must consider how to contend with changes in administrations. We need to avoid the problem that economic conditions during one administration "leaking" into approval of the subsequent administration. We would not want a new president to be blamed for economic events of the last quarters of the previous administration. There are two potential ways to deal with this problem. First, we could simply omit quarters in which righthand side variables are lagged to previous administrations.

An alternative to dropping the first four quarters is available. We could re-specify the model such that approval starts with some initial condition in the first quarter of each administration, and then respondents update based on the economic performance of relevant economic quarters. Such a model would have the following general form:

$$
\begin{aligned}
A_{i,t} \quad = \quad & \alpha_0 \; + \; \beta_0 \; A_{i,t-1} \\
& + \beta_{11} \; (q == 1) \\
& + \beta_{21} \; (\Delta \tilde{X}_{i,t-1})(q == 2) \\
& + \beta_{31} \; (\Delta \tilde{X}_{i,t-1})(q == 3) \; + \; \beta_{32} \; (\Delta \tilde{X}_{i,t-2})(q == 3) \\
& + \beta_{41} \; (\Delta \tilde{X}_{i,t-1})(q == 4) \; + \; \beta_{42} \; (\Delta \tilde{X}_{i,t-2})(q == 4) \; + \; \beta_{43} \; (\Delta \tilde{X}_{i,t-3})(q == 4) \\
& + \beta_{51} \; (\Delta \tilde{X}_{i,t-1})(q == 5) \; + \; \beta_{52} \; (\Delta \tilde{X}_{i,t-2})(q == 5) \; + \; \beta_{53} \; (\Delta \tilde{X}_{i,t-3})(q == 5) \\
& \quad + \; \beta_{54} \; (\Delta \tilde{X}_{i,t-4})(q == 5) \\
& + \epsilon_{i,t}
\end{aligned}
$$

Because our economic measures vary over the groups, this model would be identified. However, we proceed with the simpler alternative of dropping the first four quarters of each administration.[15]

We present some descriptive data before proceeding. Tables 1 gives the mean quarterly proportional change of each of the aggregate economic indicators. Table 2 gives the correlations between each pair of the quarterly proportional change of the aggregate economic indicators. Table 1 confirms the common wisdom that wages were virtually flat over this period: the mean of the proportional quarterly change in aggregate wages is .0016. In other words, on average each quarter wages rose only 2/100 of 1%. Unemployment drops over this period: though obviously this is in part because the initial time-period (1979:Q1) is during recession. And while wages were virtually flat, real GDP per capita and real disposable per capita income showed average gains of almost 2% each over the period.

[Table 1 Here]

Table 2 shows that wages are obviously measuring something different than our other economic measures. Changes in aggregate wages are fairly highly correlated with inflation (ρ = -.36); but are not correlated at all with changes in unemployment, and even only weakly correlated with changes in real disposable per capita income (ρ = .16).

[Table 2 Here]

7 Findings

7.1 Aggregate Level Results

We begin presenting our findings with the aggregate level time series analysis of presidential approval, where the level of aggregation is over each of the three income groups: low, middle, and high. Table 4 reports results from models of presidential approval estimated separately by income group (coefficient estimates for events, administration dummies , and honeymoon effects are not presented in the table though they are included in the model). The estimates are quite similar across the three income groups. Lagged approval has the same effect in all three income groups, suggesting that the autoregressive nature of approval is the same for each group. Inflation has the predicted negative affect in each income group. The magnitude of the effect is quite large, almost double that reported by MacKuen, Erikson, and Stimson (1992) and is highest among the lowest income respondents. Changes in unemployment also behave as predicted. Consistent with Hibbs (1982), changes in unemployment matter most for low income respondents. For middle and high income respondents, the magnitude of the coefficient drops.

[Tables 4 and 5 Here]

Of particular interest for assessing our theory are the estimates of effects of real disposable per capita income (RDIPC) and gross domestic product per capita (GDPPC) to the fit of the model across the three sets of results. Here the story is less satisfying. The model fits equally and relatively poorly for all income groups. The R^2 and mean squared error are unimpressive, but more disturbing for our theory, or any theory of economic voting, the effects of real disposable income and gross domestic product are not significant in any of these models. However, obviously with four highly correlated measures of the macro economy on the right-hand side of the model and only 108 observations the estimates are prone to be sensitive to choice of model specification. Table 5 shows that the estimates of the effects of changes in real disposable per capita income and changes in GDP per capita change when unemployment and inflation are not included in the model.

This finding is robust to changes in the lag specification of all of the economic measures and to changes in the measures included in the model.

But while we think different aggregate measures of the entire economy – Unemployment, Inflation, Disposable income, and GDP – will have varying levels of importance to different voters, they are still measures of the *entire* economy. A stronger test of the theory would be to have measures of the economic performance of particular groups. That is available to us via quarterly data on wages, aggregated by education-cohort, from 1979 to 1999. Thus next we consider the pooled times series models of approval by education cohorts. Here we are able to actually directly measure one aspect of the economic performance of a group of voters, and thus model the political opinions of these voters as functions of the group's economic performance – rather than modeling them as measures of the overall macro-economy. Table 6 reports results. Here our focus is the effect of group wages and the interaction terms. The dependent variable here is the aggregate presidential approval level of persons in an education group. The four groups are stacked. Approval is modeled as a function of: the change in the level of real wages going to the group; change in aggregate wages; changes in *aggregate* real disposable income and real per-capita GDP; as well as inflation and changes in unemployment. Events, administration dummies, and honeymoon affects are also allowed for. We also allow the effects of group wages, aggregate wages, real disposable per capita income, and real GDP per capita to vary across education groups. None of the wage variables are significant in this specification. In fact, virtually none of the economic indicators are significant in this specification.

[Table 6 Here]

7.2 Subjective Evaluations of the Economy

While our focus in this paper has been on presidential approval, we offer a taste of how our theory applies to economic evaluations. Again we ask what aspect of the economy is important for forming evaluations, this time with respect to voters' views of current business conditions and consumer confidence. Since so much of the literature showing that the economy has a large impact on elections really shows that economic perceptions have a large impact on elections, it is extremely important to determine how people form their economic evaluations. We attempt to model economic evaluations exactly as we model approval. If wages act as we expect on presidential approval, the mechanism could be by acting on respondents' perceptions of the economy. We have data from the "Survey

of Consumer Attitudes and Behavior" (Economic Behavior Project, Survey Research Center) on a quarterly basis for January 1978 through December 1993.[16] If voters base their opinion of current business conditions on sector-specific factors, rather than the national economy, this would further suggest that sector-specific conditions are used in determining their vote. Thus we attempt to predict the consumer confidence level of different groups of workers based on: 1) the national economy, and 2) the economic-sector relevant to the workers.

If consumer confidence of the demographic group is predicted by $Y*s_j$, the actual performance of the economic reference group, then we can infer at a minimum that the group members know the performance of their economic reference group. The methodology employed here is identical to the methodology used to estimate presidential approval: we are simply substituting economic perceptions for presidential approval. However, there is now no reason to worry about 'leakage' from one presidential administration to the next.

We utilize two different measures of respondents' perceptions of the economy: both their personal retrospective economic evaluations, and their national retrospective evaluations (their evaluations of business conditions). We see in Table 7 that while the measures of the economy we use to predict presidential approval predict retrospective business evaluations, they do not predict personal evaluations.

[Table 7 Here]

8 Conclusion and Future Research

We have offered a new theory of economic voting that assumes that voters behave in a self-interested manner, and allows them to combine an evaluation of the incumbents' *competence* in managing the economy with an evaluation of the incumbents' *distributional* tendencies. This offers an important advance over theories which seek to treat voters as concerned with economic growth at the aggregate level, yet indifferent as to whom the growth benefits. It is tempting to treat voters as stockholders in economic models of voting. But stockholders have essentially homogeneous preferences: maximize the stock price. Among the set of voters there is wide variation in the distribution of economic benefits based on any conceivable macro-economic scenario. We should not expect a one-size-fits-all

model of economic voting to explain voter behavior.

However, we have not found that voters behave according to the theory. Thus we are left with the paradox that voters seem to put large weight on economic performance: though it is neither clear that the incumbent deserves credit (nor blame) for aggregate economic performance, nor that aggregate economic gains will benefit individual voters.

Notes

1. We hope to eventually test some of these alternative beliefs.
2. The major exception is Hibbs (1982), in which he examined the marginal substitution rates for unemployment and inflation of different occupation groups. That work is very much in the spirit of our research, the key distinction is that we attempt to measure the economic fortunes of different groups rather than taking a strict Phillips-Curve based view of the macro economy.
3. We note that it is *not* necessarily true that an altruistic voter would try to maximize the value of Y_t. If one makes the assumption of diminishing marginal return to income, then maximizing Y_t is not the altruistic choice.
4. These might be called the 'sub-aggregate' level. But we use the term 'aggregate' level to distinguish from the individual level, not to indicate that the level of aggregation is the entire electorate.
5. The national economic measures may also enter in directly, without the interaction.
6. Both CBS/NYT and Gallup survey Americans regularly asking: "In general, do you approve of the way (the incumbent) is handling the job of president?" We aggregated answers to this question over quarters using Stimson's ((1991)) algorithm to aggregate survey data across polling organizations. The algorithm builds dimensional "factor scores" for each survey house and uses them to estimate a single (latent)time series of presidential approval for each of our 4 groups. The algorithm thus allows us to use information from both surveys. This is particularly important given that Gallup adds large numbers of cases to the quarterly observations, but is not available at the necessary level of disaggregation for the full time period. In contrast, CBS/NYT survey data is available over the full period of analysis, but with much smaller samples. See Stimson, *Public Opinion in America: Moods, Cycles, and Swings*, Westview Press: 1991, particularly Appendix 1.
7. Data on Disposable Personal Income Per Capita, is from The US Department of Commerce, BEA (http://www. bea.doc.gov/bea/dn/nipaweb/AllTables.asp), table 2.1: Personal Income and its Disposition. Real Gross Domestic Product is also from The U.S. Department of Commerce, BEA (http://www.stls.frb.org/fred/data/gdp/gdpc1). Both are presented in 1996 chained dollars and are seasonally adjusted.
8. In an effort to clarify this finding, we replicated Beck's ((1991)) standard model of presidential approval, using his data, for a period close to the one we are analyzing: 1979-1999. In particular, we estimated presidential approval as a function of lagged inflation rates, changes in unemployment, lagged presidential approval, a series of administration effects (allowing for mean differences and honeymoons), and an events series. We were able to replicate Beck's results for the full time period covered by his analysis, 1953-88, a period over which inflation and unemployment both influenced presidential approval. However, upon re-estimating this model from 1979-1988, again using Beck's data, inflation did not significantly affect approval.
9. Hibbs (1982) argues that these have different distributional effects as well, but we assume that their effects are homogeneous across voters.

10. The relationship is not likely to be as strong as for education as it is for workers within the same occupation. Workers in the same occupation are more likely to be substitutes for one another then are workers with the same level of education. Education is one measure of human capital. But the level of human capital is going to determine which of many occupations a worker is capable of having. Contingent on level of education, the choice of occupation will still have a large impact on the wage.

11. Using median wage has some theoretical advantages over mean wage: it removes the impact of outliers, and removes some topcoding problems with the data. However, the mean and median wage are highly correlated over time.

12. The Outgoing Rotation files are not available prior to 1979.

13. This may be a problem: we are not necessarily correctly handling life-cycle effects. Over this period the wages of this group will most likely decline just because they are on the wrong side of the life-cycle curve. But we do not want to suggest that they will punish the incumbent for this.

14. We include a minimal series of events in our models to pick up the effects of crisis and "rally" events. These are based on MacKuen, Erikson, and Stimson (1992) include: the Iranian hostage crisis (1979:4=2, 1980:1=1, 1980:2=-1); the assassination attempt on President Reagan (1981:1=+1); the invasion of Granada (1983:4=+1); the Iran-Contra scandal (1986:4=-1); and the Gulf War (1990:4=1, 1991:1=2).

15. This should not actually change the estimates we obtain: we are simply choosing not to try and estimate the form of approval for the first four quarters.

16. This data is available for more recent periods, however we have not finished coding it to get measures corresponding to our education-cohorts.

References

Alesina, Alberto, Nouriel Roubini & Gerald D. Cohen. 1997. *Political Cycles and the Macroeconomy*. Cambridge: Massachussetts Institute of Technology Press.

Beck, Nathaniel. 1991. "Comparing Dynamic Specifications: The Case of Presidential Approval." *Political Analysis* 999:51–87.

Campbell, Angus, Philip E. Converse, Warren E. Miller & Donald E. Stokes. 1960. *The American Voter*. Chicago: University of Chicago Press.

Fiorina, Morris P. 1981. *Retrospective Voting in American National Elections*. New Haven: Yale University Press.

Hibbs, Douglas A. 1982. "The Dynamics of Political Support for American Presidents Among Occupational and Partisan Groups." *American Journal of Political Science* 26:312–332.

Hibbs, Douglas A. 1987. *The American Political Economy: Macroeconomics and Electoral Politics*. Cambridge, Mass: Harvard University Press.

Key, V.O. 1966. *The Responsible Electorate: Rationality in Presidential Voting 1936-1960*. Cambridge, Mass: Harvard University Press.

Kiewiet, D. Roderick. 1983. *Macroeconomics & Micropolitics : the Electoral Effects of Economic Issues*. Chicago, Illinois: University of Chicago Press.

Kinder, Donald R. & D. Roderick Kiewiet. 1979. "Economic Discontent and Political Behavior: The Role of Personal Grievances and Collective Economic Judgements in Congressional Voting." *American Journal of Political Science* 23:495–527.

Kinder, Donald R., Gordon S. Adams & Paul W. Gronke. 1989. "Economics and Politics in the 1984 American Presidential Election." *American Journal of Political Science* 33:491–515.

Kinder, Donald R., Steven J. Rosenstone & John Mark Hansen. 1983. "Group Economic Well Being and Political Choice: Pilot Study Report to the 1984 NES Planning Committee and NES Board." *ANES Pilot Report* 1983:1–34.

Kramer, Gerry. 1971. "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964." *American Political Science Review* 65:131–143.

MacKuen, Michael B., Robert S. Erikson & James A. Stimson. 1989. "Macropartisanship." *American Political Science Review* 83:1125–1142.

MacKuen, Michael B., Robert S. Erikson & James A. Stimson. 1992. "Peasants or Bankers? The American Electorate and the U.S. Economy." *American Political Science Review* 86:597–611.

Mishel, Lawrence, Jared Bernstein & John Schmitt. 1999. *The State of Working American 1998-1999*. Ithaca, New York: ILS Press.

Mutz, Diana C. & Jeffery J. Mondak. 1997. "Dimensions of Sociotropic Behavior: Group-Based Judgements of Fairness and Well-Being." *American Journal of Political Science* 41:284–308.

Ragsdale, Lyn. 1998. *Vital Statistics on the Presidency, Revised Edition.* Washington, DC: Congresional Quarterly Press.

Rawls, John. 1971. *A Theory of Justice.* Cambridge: Harvard University Press.

Stimson, James A. 1991. *Public Opinion in America: Moods, Cycles, and Swings.* Boulder, CO: Westview Press.

Tufte, Edward R. 1978. *Political Control of the Economy.* Princeton, N.J.: Princeton University Press.

Table 1: Descriptive Statistics of Economic Measures – 1979:Q1-1999:Q4
rm

	Mean	Standard Deviation
Δ Aggregate Wages	**0.0016573**	**0.0433018**
Δ Unemployment	**-0.0214286**	**0.3087641**
Δ Real Per Capita Gross Domestic Product	**0.0192066**	**0.0219971**
Δ Real Disposable Per Capita Income	**0.0173585**	**0.0176798**
Inflation	**4.507317**	**3.435541**

Changes should be quarterly *proportional* **changes annualized.**

Table 2: Correlations Between Economic Measures – 1979:Q2 - 1999:Q4

	Change in Unemployment	Change in Real Disp Income Per Capita	Change in Real GDP Per Capita	Inflation	Change in Real Aggregate Wages
Change in Unemployment	1				
Change in Real Per Capita Disp Income	-0.481	1			
Change in Real Per Capita GDP	-0.7366	0.6051	1		
Inflation	0.274	-0.143	-0.2195	1	
Change in Real Aggregate Wages	0.0212	0.1109	0.129	-0.3589	1

Table 3: Correlations Between Economic Measures – 1965:Q1 - 1996:Q4

	dunemp	drdpci	drgdppc	inf	drgdppc L1	drdpci L1	dunemp L1	inf L1
dunemp	1.0000							
drdpci	-0.3474	1.0000						
drgdppc	-0.6771	0.5106	1.0000					
inf	0.2729	0.2255	-0.2374	1.0000				
drgdppc L1	0.5079	0.1380	0.2937	-0.1400	1.0000			
drdpci L1	0.3182	-0.0218	0.2767	-0.0912	0.5100	1.0000		
dunemp L1	0.6340	-0.1093	-0.3936	0.0919	-0.6762	-0.3472	1.0000	
inf L1	0.4501	-0.2261	-0.3706	0.8279	-0.2297	-0.2303	0.2738	1.0000

Table 4: Models of (Gallup) Presidential Approval Time Series by Income Level

Time Period: 1965 - 1996, Quarterly

	Low Income		**Middle Income**		**High Income**	
	Estimated Coefficient	**Std Error**	**Estimated Coefficient**	**Std Error**	**Estimated Coefficient**	**Std Error**
Constant	14.47	3.93	13.22	3.55	12.82	3.73
Approval$_{t-1}$	.771	.062	.765	.059	.745	.067
Δ Unemployment$_t$	-5.44	2.18	-3.07	2.28	-1.86	2.52
Inflation$_t$	-.715	.273	-.581	.289	-.542	.316
Δ RDI-PC$_t$	-.279	.175	-.089	.184	.114	.200
Δ RGDP-PC$_t$	-.081	.210	-.001	.221	-.089	.243
R^2	.7576		.7523		.7753	
RMSE	5.76		6.06		6.65	
N	108		108		108	

Administration dummies were included in the regressions but are not reported.

Table 5: Models of (Gallup) Presidential Approval Time Series by Income Level

Time Period: 1965 - 1996, Quarterly

	Low Income		**Middle Income**		**High Income**	
	Estimated Coefficient	**Std Error**	**Estimated Coefficient**	**Std Error**	**Estimated Coefficient**	**Std Error**
Constant	10.80	3.91	12.82	3.99	5.38	5.61
Approval$_{t-1}$	0.76	0.06	.76	.06	.77	.09
Δ Unemployment$_t$ –	–	–	–	–	–	
Inflation$_t$	–	–	–	–	–	–
Δ RDI-PC$_t$	-3.19	15.87	10.27	16.33	-8.98	27.56
Δ RGDP-PC$_t$	.37	.15	.25	.15	.28	.30
R^2	.7317		.7391		.7974	
RMSE	6.15		6.68		6.80	
N	108		108		108	

Administration dummies were included in the regressions but are not reported.

Table 6: Pooled Time Series Model of Presidential Approval, 1979-1999

Variable	**Coefficient** (Std. Err.)
Lagged Approval	0.886
	(0.051)
Low-Education	-0.006
	(0.005)
High-Education	-0.002
	(0.005)
Low Education ΔGroup Wages	0.034
	(0.103)
Middle Education ΔGroup Wages	-0.047
	(0.080)
High Education ΔGroup Wages	0.036
	(0.146)
Low Education ΔAggregate Wages	0.021
	(0.170)
Middle Education ΔAggregate Wages	-0.070
	(0.138)
High Education ΔAggregate Wages	-0.175
	(0.160)
Low Education ΔReal Disp Per Cap Income	0.101
	(0.258)
Middle Education ΔReal Disp Per Cap Income	-0.045
	(0.255)
High Education ΔReal Disp Per Cap Income	0.027
	(0.253)
Low Education ΔGDP-PC	0.331
	(0.339)
Middle Education ΔGDP-PC	0.358
	(0.340)
High Education ΔGDP-PC	0.293
	(0.342)
inf	-0.002
	(0.003)

Time Period: 1979 - 1999

Variable	**Coefficient** (Std. Err.)
Unemp(t) - Unemp(t-1) (quarterly change)	0.014
	(0.031)
events	0.051
	(0.015)
rwr	0.033
	(0.038)
ghwb	0.018
	(0.041)
wjc	0.042
	(0.042)
rwr2	0.200
	(0.059)
ghwb2	0.025
	(0.053)
wjc2	-0.187
	(0.052)
Intercept	0.028
	(0.049)
Number of Observations	320
R^2	.83

Table 7: Model of Economic Perceptions : 1980 - 1996

	Business Retrospective Economic Evaluations		Personal Retrospective Economic Evaluations	
	Estimated Coefficient	**Std Error**	**Estimated Coefficient**	**Std Error**
Constant	20.9*	6.33	2.70	2.66
Approval$_{t-1}$	0.73*	0.04	0.94*	0.02
ΔGroup Wages$_{t-1}$	40.85**	22.72	-2.07	13.58
ΔGroup Wages$_{t-2}$	59.56*	27.24	-12.93	16.19
ΔGroup Wages$_{t-3}$	13.77	27.37	9.61	16.19
ΔGroup Wages$_{t-4}$	-5.25	23.97	-13.2	14.66
ΔAgg Wages$_{t-1}$	4.95	199.48	64.73	73.78
ΔAgg Wages$_{t-2}$	-8.47	199.29	80.63	73.97
ΔAgg Wages$_{t-3}$	-71.72	198.8	14.55	73.78
ΔAgg Wages$_{t-4}$	-416.35*	189.42	-31.24	70.24
ΔReal Disposable Personal Income$_{t-1}$	0.61	0.49	0.09	0.18
ΔReal Disposable Personal Income$_{t-2}$	0.6	0.52	0.46*	0.19
ΔReal Disposable Personal Income$_{t-3}$	1.12*	0.48	0.25	0.17
ΔReal Disposable Personal Income$_{t-4}$	1.71*	0.53	0.32	0.19
Inflation$_{t-1}$	-2.99*	0.98	-0.3	0.36
Inflation$_{t-2}$	2.00**	1.07	0.44	0.39
Inflation$_{t-3}$	-0.53	1.04	0.03	0.38
Inflation$_{t-4}$	-0.25	0.95	-0.19	0.35
ΔUnemployment$_{t-1}$	-23.4*	6.35	-4.01**	2.27
ΔUnemployment$_{t-2}$	-0.16	8.27	1.44	3.01
ΔUnemployment$_{t-3}$	5.17	8.48	0.21	3.11
ΔUnemployment$_{t-4}$	21.01**	7.37	5.58*	2.73
Events	-2.98	3.93	0.15	1.44
N	880		880	
R2	.83		.87	

Dependent Variables come from the Survey of Consumer Attitudes and Behavior. The unit of analysis is the education-cohort.

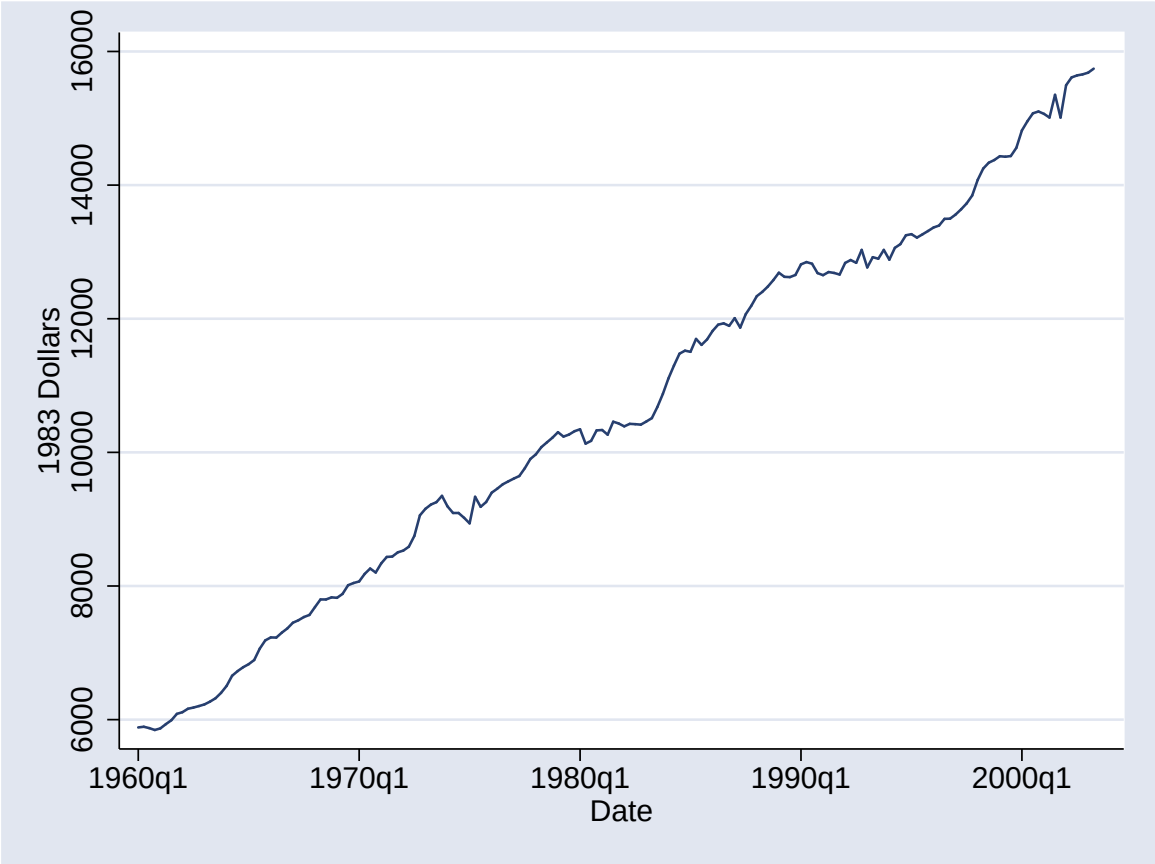

Figure 1: Real Disposable Per Capita Income

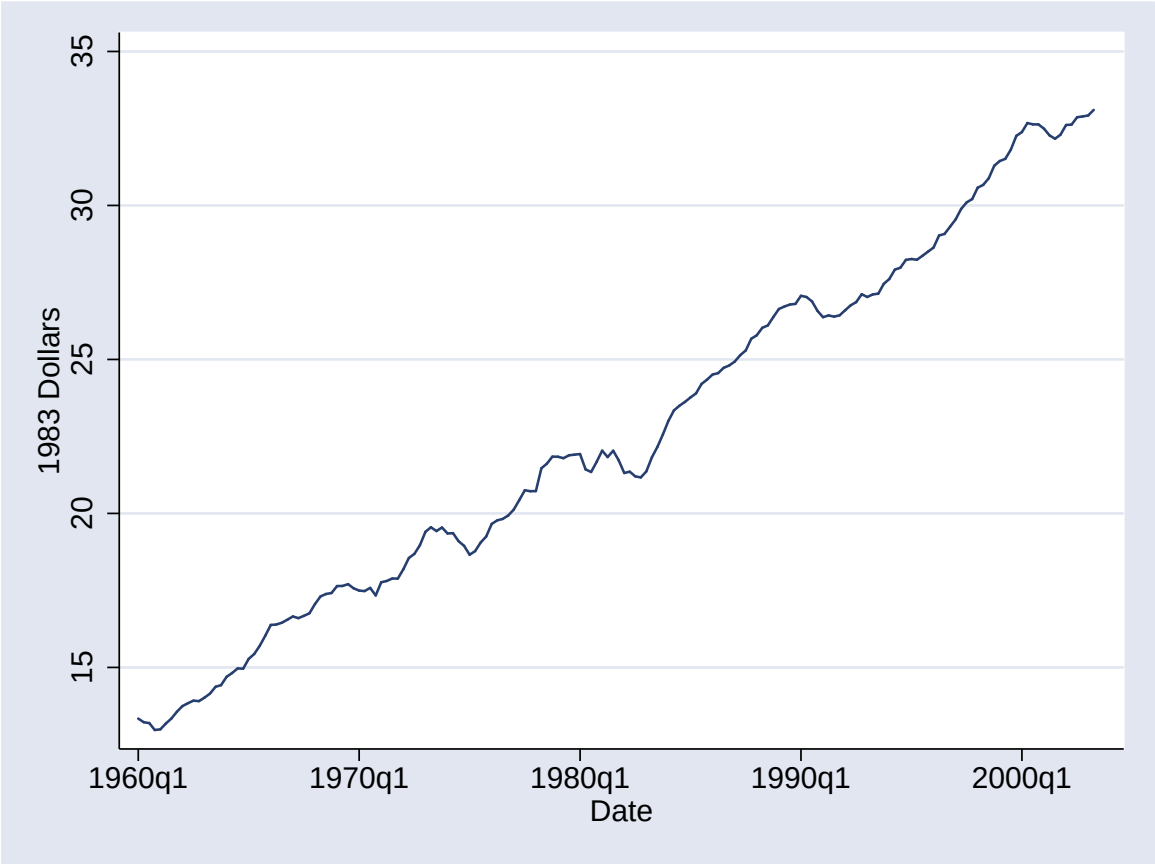

Figure 2: Real Per Capita GDP

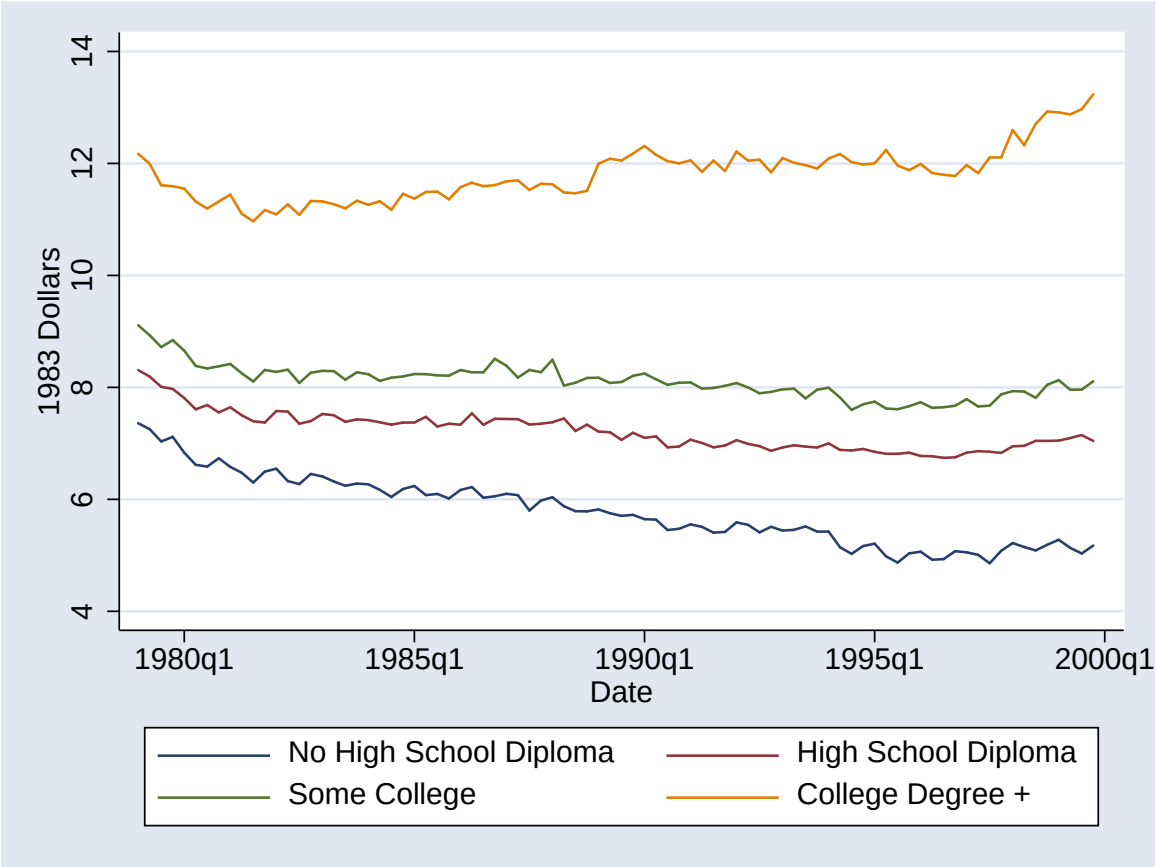

Figure 3: Real Wages by Education

Figure 4: Annual Mean Household Income by Income Quintile