

# Whose Economy? Perceptions of National Economic Performance During Unequal Growth

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January 7th, 2011

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\*Earlier versions of this paper were presented at the 2009 Political Science Networks Conference (Harvard University, Cambridge, MA) and the 2010 Harvard-Manchester Summer Workshop on Inequality (University of Manchester, UK). The author gratefully acknowledges research assistance by Hui Feng, Anton Strezhnev, William Tamplin, and Marzena Zukowska. Joseph Bafumi, Michael Bailey, Justin Grimmer, Georgia Kernell, Jonathan M. Ladd, Gabriel Lenz, Andrew J. Reeves, Erik Voeten, and Mark Williams provided helpful feedback, data, or other assistance. The MIT Department of Political Science provided institutional support.

## Abstract

Perceptions of national economic performance are a cornerstone of American public opinion and of Presidential approval. Yet much of our knowledge about economic perceptions comes from political surveys conducted in the 1970s and 1980s, prior to the recent increase in income inequality. This paper updates our understanding of economic perceptions by combining the 1978-2010 Michigan Surveys of Consumer Attitudes with various economic indicators. It first uses aggregate data to show that despite rising inequality, Americans of all incomes continue to agree about national economic performance. In past work, snapshots from elections create the impression that these assessments of economic performance are influenced only by income growth among the wealthy. Examining more than 215,000 respondents over three decades, however, we learn that *income growth among the poor is frequently more influential*. This paper thus identifies an attitudinal mechanism by which the poor's economic condition can profoundly influence American politics.

# 1 Introduction

If the study of American Presidential elections were reduced to a single finding, it might well be the central role of national economic performance. Political scientists have repeatedly documented that incumbent Presidents receive higher approval and more support when the economy has grown in the period prior to the election (e.g. Kramer, 1971; Kiewiet and Rivers, 1984; Vavreck, 2009). Since World War Two, the most lopsided Presidential elections have taken place during periods of rapid growth (e.g. 1972, 1964, 1984) or economic stagnation (e.g. 1980). The influence of economic performance is not limited to campaigns and elections: past research connects the state of the economy to outcomes as disparate as political trust (Hetherington and Rudolph, 2008) and aggregate partisanship (Erikson, MacKuen and Stimson, 2002). Given the predictive power of economic performance, it is not surprising that political scientists have devoted hundreds of articles to understanding its influence on voters' preferences (see Kiewiet and Rivers 1984 and Vavreck 2009 for reviews).

Yet in the U.S., much of the foundational research was conducted decades ago. Since that time, the U.S. economy has undergone a structural shift, and has entered what some term a “new gilded age” (Bartels 2008; see also Hacker 2004, McCarty, Poole and Rosenthal 2006, Piketty and Saez 2006, McCall and Kenworthy 2009, Page and Jacobs 2009 and Kelly and Enns 2010). Over the last three decades, real wages for poor Americans have been nearly stagnant while those for wealthy Americans have grown rapidly. According to the Current Population Survey, in 1978, Americans at the 95th income percentile made 6.7 times as much as their counterparts at the 20th percentile. This was just prior to the peak of economic voting studies. By 2003, that ratio had grown by 27%, to 8.5. These diverging fortunes were just beginning in the 1970s, and they raise a challenge that the early economic voting literature did not know to address: how is economic performance perceived in a period of rising inequality?

Studying Americans' economic assessments in recent decades will provide insight into the ongoing debate about the rationality of collective opinion. Using surveys during postwar Presidential elections, one recent study contends that low-income voters reward income growth among the affluent more than they reward overall income growth (Bartels, 2008). Unlike older work,

that study innovates by disaggregating the economic conditions experienced by different groups of voters. Its results suggest that voters may be prone to perceptual errors that decouple their own economic well-being from their perceptions. Economic perceptions are a critical case in part because economic information is so readily available in everyday life. If voters make perceptual errors with respect to the economy, they may be even more prone to do so on issues that are remote from their day-to-day experience.

By understanding the correlates of retrospective economic assessments, we will also gain insight into the potential for political accountability in an era of rising inequality. As the findings in Bartels (2008) suggest, if Americans' economic perceptions are disproportionately influenced by income growth at the top, they might inadvertently reward politicians that promote growth among that group. However, the opposite is potentially true as well: to the extent that Americans emphasize the condition of the poor when assessing the economy, they will hold politicians accountable for growth at that end of the income distribution. If operative, this possibility represents a sharp departure from past work, which has consistently emphasized mechanisms that *reduce* the prospects of holding politicians accountable for economic outcomes among the poor.<sup>1</sup>

Empirically, past inferences have been limited by their reliance on a relatively small number of political surveys conducted during U.S. election campaigns. This paper takes a different approach, instead employing more than 215,000 respondents to the Michigan Survey of Consumer Attitudes (SCA). By analyzing monthly time-series cross-sectional data from 1978 to 2010, we can observe a broader range of economic and information environments than has previously been available.<sup>2</sup> Following Krause (1997), we can compare relationships among subsets of the population, allowing us to identify whether the wealthy, the middle class, and the poor respond differently to economic changes. We can thus reassess claims about voter misperceptions with greater empirical leverage.

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<sup>1</sup>There are solid economic grounds for studying these assessments as well. Economic assessments are close correlates of consumer sentiment, and are related to future economic consumption (Carroll, Fuhrer and Wilcox, 1994; Gerber and Huber, 2009). For more on the possibility of a reverse relationship between present-day consumer sentiment and future economic behavior, see especially Bafumi (2010).

<sup>2</sup>For prior uses of these data in political science, see MacKuen, Erikson and Stimson (1992), Krause (1997), DeBoef and Kellstedt (2004) and Bafumi (2010).

To be sure, the move away from analyzing political surveys has costs. This paper can shed light only on economic perceptions, not on the vote choices that they ostensibly influence. And in fact, its evidence suggests that these attitudinal mechanisms are dampened during Presidential campaigns, which could reflect partisan priming. Also, the SCA lacks information on respondents' partisanship, an important liability given studies of its influence on economic perceptions (DeBoef and Kellstedt, 2004; Gerber and Huber, 2009). But in the aggregate, partisanship varies only slowly over time (Green, Palmquist and Schickler, 2002). Its absence is unlikely to confound the inferences here, which explore the relationship between economic conditions and economic perceptions over 388 months.<sup>3</sup>

The paper's conceptual contribution, outlined in the next section, is to integrate research on economic perceptions with recent trends in income inequality. It advances three hypotheses: one based on claims of a "rational public" (e.g. Page and Shapiro, 1992), a second based on the class-bias claims in Bartels (2008), and a third based on studies of happiness and relative income (e.g. Clark, Frijters and Shields, 2008). After introducing the data and empirical methods, the paper proceeds in two empirical sections. The first is largely descriptive. To understand the mechanisms at work, it considers whether the rising gap between the wealthy and the poor is visible in Americans' assessments of personal economic performance, although the paper's ultimate goal remains to explain assessments of the national economy.<sup>4</sup> The analyses show that Americans' personal economic assessments diverge in predictable ways, with the poor consistently reporting worse assessments of their own situation. But those gaps did not grow at all from 1978 to 2010. Thus low-income Americans do not appear to be evaluating their personal economic situation by comparing themselves to the wealthiest. Strikingly, the wealthiest 5% are indistinguishable from the wealthiest 25% in their personal economic assessments, despite having enjoyed concentrated economic gains as a group in this period. What's more, poor and wealthy Americans are generally in close agreement about the state of the national economy.

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<sup>3</sup>MacKuen, Erikson and Stimson (1992) make a similar argument. They defend their use of the same survey by saying: "these data from economic surveys are decidedly free of the problem of political response rationalization that plagues micro analysis" (599).

<sup>4</sup>Put differently, this section considers both self-oriented or egoistic retrospections and society-oriented or sociotropic retrospections.

That agreement about national economic conditions despite rising inequality leads us to the question pursued next: do Americans agree because they are all assessing economic performance at the top, as the results of Bartels (2008) might imply? For these data, the answer is no. In fact, for wealthy respondents, for middle-income respondents, and for poor ones, annual income growth at the 20th percentile is a stronger predictor of economic assessments than income growth at the 95th. Considering the period from 1978 to 2010, this analysis does not find evidence of systematic misperceptions by the poor. It instead finds considerable evidence that sociotropic economic assessments are related to income growth among poorer Americans. Whether intentionally or not, if they were to act based on these economic perceptions, voters would punish or reward politicians who promote income growth at the low end of the income distribution. As in other cases (e.g. Page and Shapiro, 1992), when viewed in the aggregate, public perceptions of the economy generally appear to respond in a rational and parallel manner to real-world conditions. In fact, to the extent that this paper uncovers irrationality, it is most likely to be among the wealthiest, whose improved economic position is not reflected in survey responses.

## **Hypotheses: Assessing Economic Performance**

Scholars of American politics have studied economic and retrospective voting for at least forty years (e.g. Key, 1966; Kramer, 1971), and many of the core theoretical claims emerged decades ago. Theoretical interest in the impacts of rising economic inequality is more recent (e.g. Hacker, 2004; Piketty and Saez, 2006; Bartels, 2008)—and as a result, studies of economic perceptions have not yet been integrated with our understanding of economic inequality. This section thus adapts three theoretical approaches to the task of explaining economic perceptions. To be sure, none of the approaches was developed primarily to explain perceptions of economic performance, and none is a perfect fit. Yet all yield predictions about how national economic perceptions might shift in a period of rising economic inequality.

At the aggregate level, research has noted a strong and consistent relationship between economic performance, Presidential approval, and election outcomes (e.g. Kramer, 1971; Vavreck,

2009). These findings make intuitive sense: the economy influences day-to-day life in a multitude of ways, from wages to gas prices, meaning that people have access to considerable amounts of economic information. Reinforcing this intuition, DeBoef and Kellstedt (2004, pg. 635) show that objective economic conditions strongly predict perceptions of economic performance.

These results are in line with the claims made by Page and Shapiro (1992) that in the aggregate, *public opinion responds rationally to changing objective conditions*. The “rational public” view does not contend that all individuals necessarily hold accurate perceptions. Instead, it claims that in the aggregate, perceptual errors tend to be offsetting, a fact which generates aggregate trends that respond in predictable ways to the real world (see also Erikson, MacKuen and Stimson, 2002). This viewpoint further holds that even if subgroups have different baseline *levels* of a given opinion or perception, those opinions are likely to *change* in ways that are parallel across groups, as they respond to common information or events. The authors dub this phenomenon “parallel publics.” These claims about aggregate rationality constitute the first of the three hypotheses advanced in this section.

Yet at the individual level, past work disagrees about the relationship between personal economic evaluations and support for the incumbent President (e.g. Kinder and Kiewiet, 1981; Kiewiet and Rivers, 1984; Kinder, Adams and Gronke, 1989). The weak observed relationships might stem from the fact that personal economic events typically have little to do with government policy (Kramer, 1983). Alternately, the weak relationships might indicate that economic voting is largely sociotropic—that is, influenced chiefly by perceptions of aggregate conditions (Kinder and Kiewiet, 1981; Kinder, Adams and Gronke, 1989). Since Americans have personal information about only a tiny fraction of the nation’s economic transactions, the possibility of sociotropic voting necessarily focuses attention on how Americans come to perceive national economic performance as good or bad (e.g. Mutz, 1994).<sup>5</sup>

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<sup>5</sup>In the early economic voting research, the relative influence of retrospective versus prospective perceptions was one source of disagreement (e.g. MacKuen, Erikson and Stimson, 1992). Do Americans reward the President for past economic performance, or for anticipated economic performance in the future? Nonetheless, it is fair to say that models of economic voting within political science still put more emphasis on past economic performance (e.g. Kiewiet and Rivers, 1984; Kinder, Adams and Gronke, 1989; Bartels, 2008; Vavreck, 2009). Moreover, we are interested here in the accuracy of assessments, and retrospective assessments are firmly grounded in an observed reality. It is far more difficult to assess the accuracy of predictions.

One source of disagreement in the earlier research centered on which aspects of the economy were most influential (e.g. Kiewiet and Rivers, 1984). Economic performance is not a self-evident fact: at any given time, one might perceive the economy to be doing better or worse depending on the indicator one chooses. In assessing the economy, do Americans focus on unemployment, inflation, income growth, stock values, housing prices, exports, some combination of those factors, or something else entirely?

Economic changes since the peak of the academic debates have added yet another complication. Beginning in the 1970s, economic gains in the U.S. have been increasingly earned by the wealthiest Americans (Hacker, 2004; McCarty, Poole and Rosenthal, 2006; Piketty and Saez, 2006; Bartels, 2008; McCall and Kenworthy, 2009; Page and Jacobs, 2009). For example, in 1970, a household at the 20th percentile received an income that was 15.9% of a household income at the 95th percentile. In 2003, the final year covered in this study, the comparable figure was 11.6%. Even when disagreeing about other issues, the canonical studies of economic voting conceived of economic performance as something experienced uniformly across the electorate (but see Krause, 1997). But in an era of rising income inequality, that assumption becomes less tenable.

Advancing that possibility, one of the analyses in Bartels (2008) uses empirical evidence from 14 National Election Studies during Presidential years to show that what correlates with support for the incumbent is not income growth overall but income growth among the wealthy. In his words, “low-income voters seem to be more sensitive to the election-year growth rates for more affluent families than they are for families at their own income level”(113). In this analysis, overall income growth does not prove a strong predictor of Americans’ vote choices. Thus Americans are either principled believers in supply-side economics or else holding incumbents to the wrong retrospective standard. Like the “parallel publics” view, this approach leads us to expect that different income groups’ perceptions will move in parallel. But the origins differ: here, the parallel movement is because of a perceptual error among low-income Americans.<sup>6</sup>

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<sup>6</sup>To be clear, Bartels (2008) argues that these misperceptions are only one of several pathways through which the political system has fostered economic inequality in recent years. But for this paper’s purposes, this pathway is the most central.

Still, this provocative possibility merits more exploration, and more consideration of the underlying mechanisms that translate economic conditions into subjective perceptions. Is it truly the case that low-income voters perceive the level of economic growth incorrectly, or perhaps that campaign effects or other intervening factors de-emphasize income growth as a voting criterion among those with low incomes? Bartels (2008) demonstrates that income growth among the wealthy is predictive of low-income voters' choices, but that does not necessarily imply that these choices are based on misperceptions. We thus need a direct test of the hypothesis that *low-income voters' perceptions of economic performance are chiefly influenced by income growth among the affluent*. We also need to acknowledge the possibility that if economic assessments do incorporate performance at the low end of the income distribution, they could be a potent vehicle for representing that group's political interests.

The implication from Bartels (2008) is that voters acknowledge and reward income growth even if it accrues to a small subset of society. Yet if we assume that people assess their economic position relative to others, as studies of happiness and subjective well-being commonly contend (Frank, 1985; Luttmer, 2005; Clark, Frijters and Shields, 2008), we might hypothesize precisely the opposite. To assess their personal financial situations, people need points of comparison. One potential benchmark is temporal, as individuals compare their financial situation today with their own situation at some point in the past. Even so, they need a way to calibrate their experience. Is a 1% raise an improvement, especially if others' incomes are growing at 5%? This raises the possibility that perceived financial situations might not be absolute, but might be assessed relative to others. For decades, sociological research has emphasized the importance of reference groups with whom individuals can compare themselves (e.g. Hyman, 1942). There are many potential reference groups one might use, from one's family or neighbors to one's friends or coworkers (Frank, 1985, Chapter 2). Broader, "imagined communities" such as economic groups may be a point of reference as well (Kinder, Adams and Gronke, 1989). Certainly, there is reason to think that relative income is influential on political attitudes such as vote choices (McCarty, Poole and Rosenthal 2006, pgs. 92-3; see also Gelman 2008). And if low-income Americans use the wealthiest as one benchmark in their economic perceptions, *we should expect*

*their personal economic assessments to decline as income is increasingly concentrated at the top.*

Whether low-income Americans commonly assess themselves relative to the wealthiest remains an open question. We now test these competing possibilities.

## Data and Methods

To understand how economic conditions influence Americans' economic perceptions, it is critical to observe attitudes under a range of different economic conditions. In that respect, the University of Michigan's SCA is an unparalleled data source (see also MacKuen, Erikson and Stimson, 1992; DeBoef and Kellstedt, 2004). Since the 1950s, the SCA has polled Americans about their economic attitudes and expectations. This survey is one of the main sources of data on consumer sentiment, and it has consistently included the same battery of questions about economic performance and expectations. It asks one question on government economic policy midway through the survey, but is otherwise apolitical, a fact which should reduce the priming of partisan cues. As with past analyses (e.g. Krause, 1997), this paper begins in 1978 because that is the first year for which consistent monthly data are available. It includes all data until April 2010, covering 388 months. The monthly sample sizes range from 492 to 1,459. We can thus observe a wide variety of economic conditions over a 33-year period, and can disaggregate responses by the wealthy, the poor, or other groups. This section outlines the benefits of using the SCA and then justifies the methods employed.

The SCA also provides another advantage to scholars of income inequality: beginning in the middle of 1986, its measure of income was not top-coded, leaving respondents free to report their annual income.<sup>7</sup> At all times, the survey asked respondents: "thinking about your total income from all sources (including your job), how much did you receive in the previous year?" Prior to 1986, respondents were given fixed response categories. After that point, their responses were open-ended, making it easier to identify narrow income percentiles. For example, in the final month available, respondents provided 124 unique numbers in response to this question, from a low of \$5,000 to a high of just under one million dollars. The median personal income reported

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<sup>7</sup>On the top-coding of income, see also pages 122-3 of McCarty, Poole and Rosenthal (2006).

was \$60,000. As with other surveys, there is considerable rounding and non-response<sup>8</sup>, and there are likely to be other reporting errors as well. Nonetheless, the data enable us to identify people in the upper echelons of the income distribution with rare precision. We know, for instance, that 841 of our respondents overall earned over 250 thousand dollars (in constant 1991 dollars).

Retrospective assessments of national economic conditions are consistently related to Presidential voting (e.g. Kiewiet and Rivers, 1984). Yet they matter even when elections are not imminent, as they correlate with outcomes as disparate as Presidential approval (DeBoef and Kellstedt, 2004) and political trust (Hetherington and Rudolph, 2008). Since these attitudinal and behavioral outcomes in turn are related to policymaking (Canes-Wrone and de Marchi, 2002), this paper focuses on the mass-level sociotropic economic assessments that lie at their foundations. The relevant question in the SCA asks: “would you say that at the present time business conditions are better or worse than they were a year ago?” In this question, respondents are asked to assess a slope or change rather than an absolute level of economic performance. The subsequent analyses follow suit by specifying the core independent variables such as income growth in terms of annual changes.

Still, because personal economic assessments are potential precursors to national economic assessments (Ansolabehere, Meredith and Snowberg, 2010; Gomez and Wilson, 2006), and because they are especially informative on questions of relative economic standing, this paper also considers data on respondents’ assessments of their own economic situation in places. Here, the SCA question asks respondents, “we are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?” Both questions provide three categories, with a middle option of “same” or “about the same” (3) and then options for better (5) and worse (1).

There are 223,793 respondents to the SCA’s monthly surveys over this period. But because our hypotheses are about responses to economic conditions, that number dramatically overstates the empirical leverage we have. More important is the fact that the respondents are grouped in 388 months. Some of the analyses below aggregate the responses of low- or high-income

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<sup>8</sup>On average, 6.9% of respondents refuse to report their income.

Americans into 388 monthly time-series observations. Others use multilevel modeling (Gelman and Hill, 2006) with random year effects to model the clustered nature of the data. In both cases, the goal is to accurately represent our level of uncertainty.

## A Tale of Two Economies?

This section is primarily descriptive, and it aims to summarize the trends in Americans' economic perceptions in an era of rising economic inequality. Empirically, we know that Americans in the highest income brackets have seen marked income growth, while those in the lowest income brackets have seen much less. Do such differences appear in Americans' economic assessments?

Figure 1 provides initial evidence on this question. At top, it charts income levels at the 20th, 40th, 60th, 80th, and 95th percentiles from 1978 to 2008.<sup>9</sup> At the 20th percentile, real incomes grew by only 8% in this period. At the 80th percentile, they grew by 26%, while at the 95th percentile they grew by 41%. These facts are likely to be familiar, as they have been extensively documented (Hacker, 2004; McCarty, Poole and Rosenthal, 2006; Piketty and Saez, 2006). The figure also illustrates that despite different baselines and levels of growth, incomes tend to grow for the poor and middle-class at the same time that they grow for the well-to-do. Table 2 in the Appendix confirms this observation by presenting the Pearson's correlations for income growth at each available income percentile. Annual income growth at different levels is always correlated at above 0.68, and the correlations are especially high when considering adjacent income levels. This correlation structure explains why the paper emphasizes income growth at only the two most extreme levels, the 20th and 95th percentiles.<sup>10</sup>

Less familiar is the middle panel of Figure 1, which illustrates Americans' personal, retrospective assessments for survey respondents in the top 5% (black dashed line), top 25% (blue dashed line), and bottom 25% (solid green line) of the surveyed income distribution. The line for the top 5% is available only beginning in June 1986, when the response format of the income

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<sup>9</sup>These data come from the U.S. Census Bureau's Current Population Survey. See [www.census.gov/hhes/www/income](http://www.census.gov/hhes/www/income).

<sup>10</sup>In fact, if we use factor analysis to decompose the variation in growth at different income levels, we learn that two factors account for 88% of the variation. The two factors are well characterized as low-end and high-end income growth, providing support for the model specifications emphasized below.

question changed.<sup>11</sup> And visually, it is indistinguishable from the line for the top 25%. Nor are they statistically different: their average difference is 0.06 on a 1-5 scale. Despite their unparalleled income growth, those at the highest echelon of the income distribution were not more likely to report a strong personal financial situation.

The figure illustrates a very consistent gap between high-income and low-income Americans. On average, the wealthiest 25% are 0.88 units higher than the poorest 25%, a difference which is highly statistically significant given the 1 to 5 scale.<sup>12</sup> Very consistently, respondents who are wealthy at the time of the survey report better personal financial situations than do poorer respondents.

The middle panel of Figure 1 also shows little evidence of an increasing gap between the rich and the poor, but we should subject that possibility to a formal test. We next run a basic regression model predicting the gap between the top 25% and the bottom 25% as a function of time in years. The estimated coefficient for years since 1978 is -0.0023, and it has a standard error of 0.0017. Put differently, the rich-poor gap in economic assessments over the prior year declines by 0.0023 units annually, a result that is statistically insignificant and substantively small. (By comparison, the gap's standard deviation is 0.31.) This absence of an increase might reflect the fact that wealthier individuals were quicker to report improvements after the recession of the early 1980s. Also, poor respondents seem less negatively influenced in the period after September 11th, 2001 or by the 2008 financial crisis. Overall, Americans' objective income levels diverged over this period, but their views on their personal financial situations did not. The notion of "parallel publics," with different baselines and common responses to external shocks, is an apt description of the broad trends.

The absence of an increasing perceptual gap also provides a hint about how Americans assess their own financial situation. The poorest quarter of Americans do not appear to be assessing

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<sup>11</sup>The analyses employ these percentile cut-offs because of the granularity of the income data, especially prior to June 1986. Given the change to an open-ended income question, only beginning in June 1986 can we calculate the top 5% with any consistency. On average, 22 respondents had incomes above the 95th percentile in a given month.

<sup>12</sup>The p-value from a two-sided t-test is less than 0.00001. By way of comparison, the standard deviation for the assessments of those below the 25th income percentile is 0.29, and for those above the 75th income percentile it is 0.43.

their personal financial situation relative to the richest: if they were, we would have seen declines over this period. And while both groups shift with the business cycle, the absence of a clear upward trend among the wealthiest is perplexing. Why do the personal retrospections of wealthy Americans not improve during a period of such strong income growth for that group? It seems plausible that the three-category response format truncates variation at the high end, although this would lead us to expect the time-series to diverge as they trend downward. They do not. Alternatively, it might be the wealthy who think in terms of relative income in assessing their financial situation—and that they are comparing themselves to their co-workers, their neighbors, or to other Americans whose incomes have grown rapidly as well (e.g. Frank, 1985).

Having considered Americans' personal economic retrospections, we now turn to perceptions of the country's economic performance. In the bottom panel of Figure 1, we again subdivide the survey respondents by month into the poorest 25%, the wealthiest 25%, and the wealthiest 5%. The first observation that stands out is the general agreement of rich and poor on how the national economy has performed. There remains a statistically significant gap between the two groups, with those in the top quarter in terms of income 0.27 units more upbeat on average on a 1 to 5 scale. But here, the difference between the groups is dwarfed by the variation within groups: for the top 25%, the standard deviation is 0.93, and for the bottom, it is 0.68. Visually, the lines representing the three groups cannot be distinguished in most months. What matters is when you ask about economy, not whom you ask. Moreover, the difference appears to come in part from the fact that the upper echelons of the income distribution are quicker to report improvement after recessions.<sup>13</sup> This fact is most visible in the mid-1980s, but is seen again in the early 1990s and the mid-2000s.<sup>14</sup> The same general conclusions even hold when we separately track the top 5% of income earners. In fact, there is no significant difference between

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<sup>13</sup>In interpreting these moments of divergence, it is important to note that the time-series stems from a question asking respondents to compare business conditions in the present with conditions one year prior. For both poor and wealthy respondents, the *change* in national unemployment over the last year is much more strongly correlated with national economic assessments than is the *level* of unemployment at the time of the survey. This suggests that in aggregate, both income groups are responding to question being asked. The relationship is slightly stronger for the perceptions of the wealthy ( $\beta = -0.64, SE = .03$ ) than for the perceptions of the poor ( $\beta = -0.44, SE = .02$ ), giving rise to the possibility that wealthy people have more accurate perceptions of conditions one year prior.

<sup>14</sup>This observation is confirmed via a regression model, where the national unemployment rate is a significant predictor of the gap between wealthy and poor ( $\beta = 0.037, SE = 0.015$ ).

the sociotropic assessments of the top 5% and the top 25%.

To formally test these descriptions, we again run a regression model predicting the gap between sociotropic assessments at the top 25% and the bottom 25% of the income distribution. Here, the coefficient for time is -0.0007 with a standard error of 0.003, indicating that the rich-poor gap that is essentially constant. Rising income inequality has no clear analog in Americans' sociotropic assessments of the economy. Whether wealthy or poor, Americans are reporting the same perceptions when it comes to overall economic performance. Given rising political polarization by income in at least some parts of the country (McCarty, Poole and Rosenthal, 2006; Gelman, 2008) and given the strong likelihood of partisan differences in economic perceptions (Gerber and Huber, 2009), this near-unanimity is all the more striking. When asked about the nation's economy, Americans at various income levels give answers that are quite similar. This finding undercuts the "relative income" hypothesis, at least when applied to poorer Americans. But to adjudicate between the hypothesis emphasizing aggregate rationality and that emphasizing systematic misperceptions, we turn to individual-level data.

## Whose Growth?

The fact that Americans largely agree about the state of the national economy leads to a second empirical question, one inspired by Bartels (2008): whose economic growth do we actually perceive? As the economic fortunes of the wealthy and the poor have diverged, it is certainly possible that Americans have come to assess national economic performance based on the returns to the wealthy. But if the opposite is true, it may represent an under-appreciated mechanism through which the fortunes of the poor influence perceptions and politics. This section tests that possibility using individual-level SCA data, monthly economic data, annual information on income growth, and multilevel models (Gelman and Hill, 2006). Unlike the vast majority of studies of economic voting, we focus here on economic perceptions and thus are not limited to surveys conducted during election campaigns. This expands our empirical leverage considerably. Our dependent variable is the respondents' retrospective assessment of national business conditions.

The multilevel model accounts for the clustered nature of the data. For these analyses, we observe 215,723 respondents from 1978 to 2008,<sup>15</sup> but only in 372 different months in 31 consecutive years.<sup>16</sup> The multilevel approach allows us to model year-specific shocks, and such an approach helps us avoid falsely attributing such shocks to a time-varying independent variable. It also appropriately inflates the standard errors.<sup>17</sup>

At the individual level, the basic model includes all the available demographics. Some are coded continuously, such as income,<sup>18</sup> years of education, age in years, and age squared. The baseline model also includes indicator variables for Blacks, Hispanics, Asian Americans, American Indians, and married respondents. To condition on other over-time influences, it includes several monthly economic measures as well. Specifically, the model uses one-month lags of unemployment, gas prices, oil prices, and the change in stock prices.<sup>19</sup> As shown below, the results prove robust with or without these measures.

There are two key independent variables in the initial models: current year income growth at the 20th percentile and at the 95th percentile. Both are measured in percentage terms, so that a one percentage-point increase reflects the growth at that income percentile over the prior year. To allow for heterogeneity in the population, we subdivide our data set into wealthy respondents (incomes above the 75th percentile), middle-income respondents (incomes between the 35th and 65th percentiles), and poor respondents (incomes below the 25th percentile).<sup>20</sup> Given that income growth has been concentrated at the top in recent decades (e.g. Piketty and

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<sup>15</sup>An earlier version of this paper reached highly similar conclusions using data from 1978 to 2003.

<sup>16</sup>Income growth data is not yet available for 2009 or 2010, so these analyses exclude the 8,070 respondents to the SCA after December 31st, 2008. For a detailed study of response rates to the SCA, see Curtin, Presser and Singer (2000, ft. 2). From June 1979 to December 1996, they estimate the AAPOR Response Rate 2 to be 70%.

<sup>17</sup>The multilevel models are implemented using the lme4 package in R (Bates and Maechler, 2010).

<sup>18</sup>Income is divided by the consumer price index, which standardizes it to 1991 dollars.

<sup>19</sup>Unemployment data is from the Bureau of Labor Statistics, available online at [www.bls.gov](http://www.bls.gov) [accessed December 16 2010]. Stock market data were obtained from Robert Shiller's website at [www.econ.yale.edu/~shiller/data.htm](http://www.econ.yale.edu/~shiller/data.htm) [accessed September 8 2010], and supplemented with 2009 and 2010 data from Yahoo Finance <http://finance.yahoo.com> [accessed December 17 2010]. The stock measure is the percentage change in stock prices over the previous month. Oil and gas prices are available via the U.S. Energy Information Administration at [www.eia.doe.gov](http://www.eia.doe.gov) [accessed September 8 2010]. In the preliminary models, gas and oil price data are missing in 1978 and 1979. Subsequent models show no substantive changes when we remove these measures and thus include two additional years of data.

<sup>20</sup>Here again, more finely grained subdivisions are not advisable because income was only assessed in an open-ended question beginning in 1986. The median number of fully observed respondents in the top quartile in a given month was 113.

Saez, 2006), it is especially instructive to consider those with middle incomes and those with low incomes separately.

[Table 1 Here]

Table 1 reports the results of the initial models. The first and second columns provide the coefficients and standard errors for the poor respondents, while the third and fourth columns provide estimates for the middle-income subset. The final two columns report the results for the wealthy subset. The results show that for all three groups, *income growth at the 20th percentile is a stronger predictor of positive economic assessments than income growth at the 95th percentile*. If income growth at the 20th percentile increased by 0.01 in a given year—that is, by one percentage point—we should expect sociotropic assessments among the poorest quarter of Americans to improve by 0.16 on the 1-5 scale, with a standard error of 0.03. This impact is sizable given the dependent variable’s standard deviation of 1.82. By contrast, the same income growth at the high end of the income distribution is conditionally correlated with an improvement in sociotropic assessments of only 0.028 (SE=0.034).<sup>21</sup> In predicting sociotropic assessments, income growth among the wealthiest is not statistically significant.

To be sure, income at the top has grown at a more rapid rate than has income at the bottom in recent decades. However, this issue is already incorporated into the model by specifying income growth in percentage terms. If the 20th percentile income grows by the same percentage as the 95th percentile income, inequality continues to increase, as those at the 95th percentile are building from a higher baseline. In fact, for our respondents, the median annual income growth over this period is 1.6 percentage points at the 95th percentile and 1.1 percentage points at the 20th. Given that, it is reasonable to compare the coefficients from the model directly to one another. The core conclusion stands. *Low-income voters may not make their voting decisions based on income growth at the bottom, but it certainly shapes their sociotropic perceptions.*

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<sup>21</sup>Given the substantial item non-response to the income question and the missing gas prices for 1978 and 1979, listwise deletion eliminates 18% of poor respondents. The analyses were thus replicated using five multiply imputed data sets (King et al., 2001). For the poor, the resulting coefficient was 4.32 (SE=3.74) for income growth at the 95th percentile and 15.77 (SE=3.69) for income growth at the 20th percentile. The substantive conclusions do not depend on the missing data strategy. In fact, the same conclusions emerge from a multilevel time-series analysis which predicts monthly economic assessments among the poorest 25% as a function of annual income growth at the low and high ends. The estimated coefficients are 20.9 (SE=4.2) and 4.0 (SE=4.2) respectively.

Strikingly, the same can be said of middle- and upper-income voters, as is shown in the third and fifth columns of Table 1. In fact, the coefficients for these two groups are almost indistinguishable, so for simplicity, we focus here on the wealthy. Among that group, given a one percentage-point uptick in income at the 20th percentile, we should expect a 0.22 increase in average sociotropic retrospections. The corresponding standard error is 0.07. The same increase in income at the 95th percentile would lead us to expect only a 0.02 improvement in perceptions, an insignificant estimate given its standard error of 0.08.<sup>22</sup> These results make it clear that whether they are wealthy, poor, or neither, Americans do perceive income growth at the lower end of the income distribution, and update their perceptions accordingly. A one percentage-point increase in income at the 20th percentile leads to a much larger expected increase in sociotropic assessments than the same increase at the 95th percentile.

Figure 2 depicts these results graphically by plotting simulated draws from the distributions of each coefficient of interest. The peak of each density corresponds to the mean estimated coefficient. As the density curves overlap less, the associated coefficients are more and more distinguishable. At left, the estimates are for the bottom 25% of survey respondents, while in the center, they are for the middle 30% of respondents. At right, they are for the top 25%. For all three income groups, the figure illustrates that income growth at the bottom of the income distribution is more strongly related to Americans' perceptions than similar income growth at the top.

For each key independent variable, the figure presents three densities, corresponding to three separate models estimated as robustness checks. The lightest grey densities provide the distribution of estimated coefficients given the basic model described above.<sup>23</sup> The standard grey densities show a pared-down model that includes no individual-level covariates. The dark grey densities provide still more evidence by estimating models with only the two measures of

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<sup>22</sup>Using multiple imputation increases the sample size by 8%, to 43,219 respondents between 1978 and 2008. There, the relevant coefficients are 3.49 (SE=7.37) for income growth at the 95th percentile and 21.66 (SE=7.24) for income growth at the 20th percentile. Here, too, the use of multiple imputation does little to change the magnitude of the estimates. Estimation of a multilevel model using the time-series data discussed above leads to a coefficient of 26.8 (SE=5.8) for low-end income growth and 6.4 (SE=5.8) for high-end income growth, further reinforcing the core findings.

<sup>23</sup>The only subtractions are oil and gas prices, which allow us to estimate the models for 31 years.

income growth as predictors. These parsimonious models are especially likely to indicate that income growth at the bottom is more predictive than income growth at the top. Still, in all cases, the substantive results are consistent, suggesting that the conclusions are quite robust to pronounced changes in model specification. Consider the light grey densities, indicating the fully specified models. For poor respondents, income growth at the bottom is a stronger predictor than income growth at the top in 93% of simulations, for a one-sided p-value of 0.07. For middle-income respondents, the comparable p-value is the same, while for wealthy respondents it is 0.12.<sup>24</sup> Irrespective of the respondent’s income, her economic assessments seem to be driven more by growth at the bottom than growth at the top.

There are multiple reasons why these results might differ from those in Bartels (2008). One is simply that the two studies consider different dependent variables. Here, the focus is on perceptions, without regard for their downstream consequences on voting decisions. A second explanation is that they study different points in history, or else different times of the year. This paper considers all months since January, 1978, while Bartels (2008) covers elections back to 1952. It is plausible that election campaigns activate certain fundamental predispositions (Gelman and King, 1993), perhaps changing the influence of income growth. It is also plausible that political surveys themselves activate those predispositions, inducing stronger relationships between partisanship and economic perceptions.

The evidence bears out the hypothesis that political time matters: when we interact annual income growth at the low end with responses during election campaigns<sup>25</sup>, we find a significant negative interaction for the poor ( $\beta = -6.31$ ,  $SE=3.16$ ) and the wealthy ( $\beta=-10.50$ ,  $SE=3.053$ ), although not those with middle incomes. In both cases, the point estimate for low-income growth remains slightly larger than that for high-income growth, but the potential campaign effect is

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<sup>24</sup>An additional robustness check considered the possibility that the results stem from mis-measuring income growth, since a respondent surveyed in January of a given year will not have been exposed to that year’s income growth for as long as a respondent in the following December. To address this possibility, the analyses were replicated using a multilevel model for all respondents in only January (at the year’s beginning) or December (at its end). For the wealthy and the poor, at the beginning of the year and the end, income growth among the poor is a consistently stronger predictor than income growth among the wealthy. The *smallest* difference appears for poor respondents during the month of December, when the impact of income growth among the poor is larger than that for the wealthy in 72% of simulations. For the full results, see Table 3 in the appendix.

<sup>25</sup>Election campaigns are formally defined as the two months prior to a Presidential election.

noteworthy. Low-income growth is less influential on sociotropic retrospections at precisely the points in time when Americans are asked to cast their Presidential votes. This observation puts limits on the capacity of Americans' sociotropic economic views to ensure that elected officials are held accountable for growth among poorer Americans.

Our initial focus on income growth at the 95th percentile was governed by data availability, by the precedent provided by Bartels (2008), and by the covariance structure of income growth across income levels. Still, the comparisons embedded in the models above are not perfectly parallel, since we are using income growth at the 95th percentile to predict sociotropic attitudes among the upper 25% of the income distribution. There has been tremendous heterogeneity in income growth even within the top quarter of the income distribution (Piketty and Saez, 2006), so it might be misleading to assume that income growth at the 95th percentile has the same impact for those throughout the top quarter. To address this empirically, we now consider income growth at the 80th percentile instead. Figure 3 replicates the earlier models, but replaces annual income growth at the 95th percentile with income growth at the 80th percentile. Again, income growth at the 20th percentile is not shaded, while income growth at the 80th percentile is.

Income growth at the 80th percentile produces larger coefficients than does income growth at the 95th percentile—and that is true among all three economic groups.<sup>26</sup> In fact, the coefficients for income growth at the 20th percentile and income growth at the 80th percentile are not easily distinguished, as Figure 3 makes clear. There is a hint that growth at the high end has more predictive power for those who are wealthier themselves—the shaded densities represent higher values as income rises—but the differences are not statistically significant. Put differently, income growth at the 80th percentile acts as expected if voters are more responsive to income growth when it occurs closer to their income level. When the measure of higher income growth is closer to the median, its relationship to Americans' sociotropic assessments grows stronger. Growth at both the 20th and 80th percentiles appears to matter in Americans' sociotropic assessments. And as Figure 4 in the Appendix shows, the same holds true if we consider growth at the 20th

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<sup>26</sup>For the poorer subset of respondents, the coefficient using the fully specified model is 13.36 with a standard error of 5.23. For the wealthiest subset, the coefficient is 21.66 with a standard error of 8.35.

and 60th percentiles instead. This pattern of findings is broadly in keeping with the notion of “rational public,” as outlined by Page and Shapiro (1992). As a group, the public responds in expected ways to changing conditions, and its subgroups tend to move in tandem. There is not a strong pro-wealthy bias in Americans’ sociotropic perceptions.

## Conclusion

Income inequality has been increasing in the U.S. for a generation, as wages among top earners have grown dramatically while wages at the bottom of the income distribution have not. These changes have not gone unnoticed. Surveying a random sample of Americans in 2007, Page and Jacobs (2009) found that 72% believed that differences in income in the U.S. are too large (40). Thus the question becomes, are recent trends in income inequality reflected in Americans’ sociotropic economic perceptions? The answer, simply put, is no.

To identify the mechanisms at work, we first considered personal economic assessments. Among poorer Americans, wages have grown slowly since the 1970s, and personal economic assessments have varied around roughly the same mean for decades. There is little evidence of assessments relative to the rich: poor Americans have not become more pessimistic about their personal finances because others have been earning more. The same empirical trends hold for wealthy Americans, although that group *has* experienced considerable income growth. These observations suggest the value of future research considering the benchmarks that different Americans use to assess their personal economic situation. They also caution us against assuming that the wealthiest are necessarily the benchmark used by those lower in the income distribution. Framing the issue as “income inequality” encourages the assumption that low-income Americans are assessing themselves relative to those in upper-income brackets. But while income is increasingly concentrated at the top, optimistic personal assessments are not.

Rich and poor, Americans usually agree when asked about the state of the national economy, and those assessments prove highly influential in election outcomes. At a time when economic fortunes are diverging, it is valuable to ask, whose economy are Americans assessing? In line with arguments about a “rational public,” the answer from the SCA is that Americans at all income

levels weigh income growth at the low end in their responses. When Americans report that the state of the economy is good or bad, they are reporting not only for the wealthy, but for the poor as well. For economic issues, this key precondition of retrospective political accountability does exist. In recent decades, sociotropic voting based on national economic assessments has provided a pathway through which the poor's economic condition shapes American politics.

Research designs that are effective for addressing some questions are often unable to address related questions, and the work presented here is no exception. The SCA data provide unusual leverage to examine over-time variation in economic perceptions. Still, another future direction is to probe Americans' sources of economic information. Such work—already underway by Ansolabehere, Meredith and Snowberg (2010)—might consider the relative importance of social networks, daily experiences, and mass media in providing economic information. Future research could also continue to connect economic perceptions with vote choices and other forms of political decision-making, following the lead of Zaller (2004). Even if economic perceptions are firmly grounded in real-world economic conditions, as this paper has demonstrated, the resulting political decisions need not be.

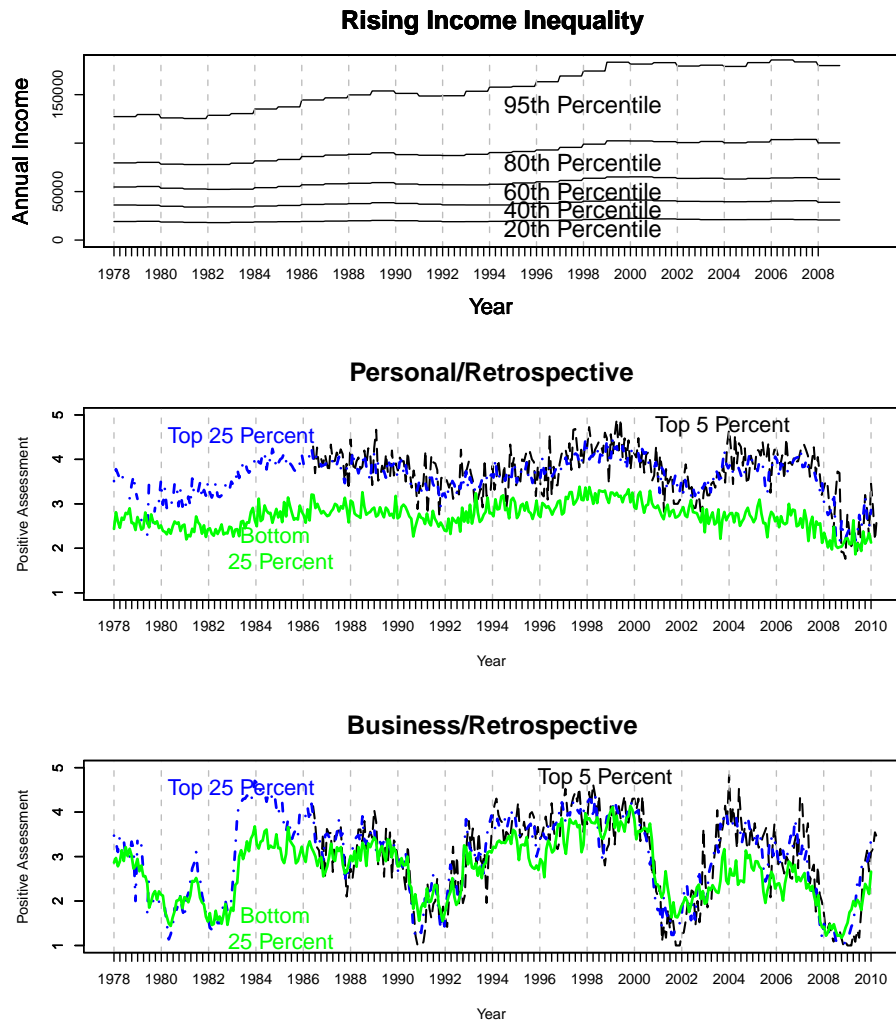


Figure 1: At top, we see the rising income inequality from 1978 to 2008. In the middle, we see Americans' personal assessments of their economic condition from 1978 to 2010. At bottom, we see Americans' sociotropic assessments by month, with higher values indicating better economic performance

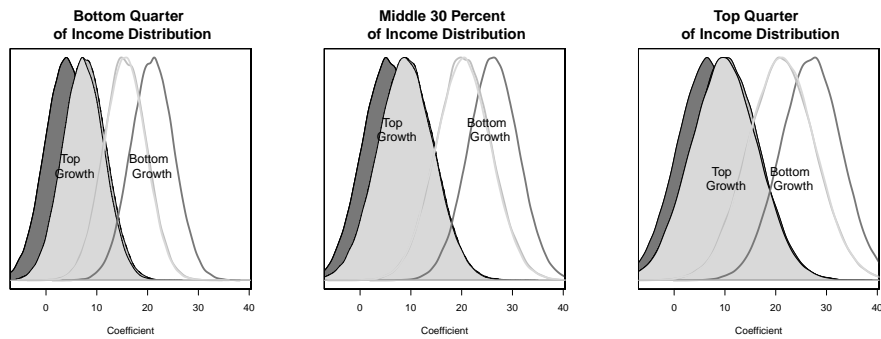


Figure 2: For the poor subset (at left), the middle-income subset (center), and the wealthy subset (at right), these figures depict the distributions of the estimated coefficients for income growth at the 20th and 95th percentiles. In each case, the three different colors correspond to various model specifications. The darkest grey depicts the coefficients when modeled with no other covariates. The middle grey depicts the distribution of the coefficients when modeled alongside monthly economic indicators. The lightest grey shows the results from a full model with demographics as well.

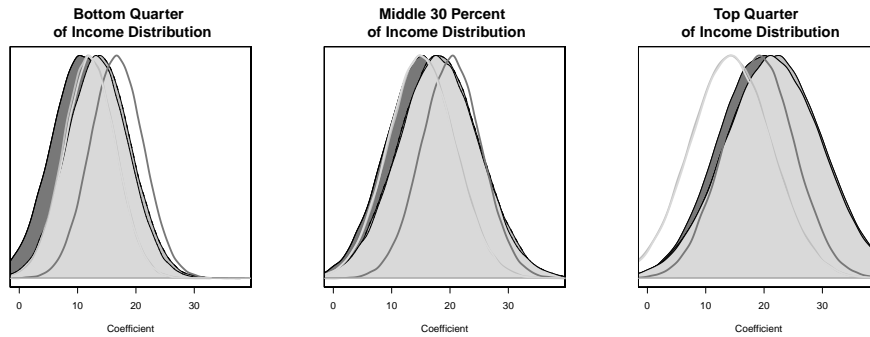


Figure 3: For the poor subset (left), the middle-income subset (center), and the wealthy subset (right), these figures depict the estimated impact of income growth at the 20th and 80th percentiles. The three shades of grey correspond to three different models: a model that only includes income growth (dark grey), a model that adds monthly economic indicators (grey), and a model that also adds individual-level demographics (light grey). Densities for growth at the 20th percentile are not shaded, while those for growth at the 80th percentile are. Across all variables and models, the coefficients are almost entirely indistinguishable.

Table 1: Multi-level models of sociotropic, retrospective evaluations of the economy. Model fit to poorest 25% (left), middle 30% (center), and wealthiest 25% (right). Note: the coefficients for age squared are multiplied by 100.

	$\beta_l$	SE	$\beta_m$	SE	$\beta_u$	SE
Intercept	48.314	14.745	73.186	22.227	87.065	27.746
Income Growth (95th)	2.802	3.405	2.167	5.674	1.661	7.510
Income Growth (20th)	15.801	3.401	19.891	5.657	21.532	7.481
Natl Unemp (1)	-0.233	0.025	-0.279	0.026	-0.261	0.026
Gas Prices (1)	0.001	0.001	0.002	0.001	0.004	0.001
Oil Prices (1)	-0.011	0.002	-0.019	0.002	-0.024	0.002
Month	-0.031	0.007	-0.045	0.011	-0.053	0.013
Stock Change	1.594	0.255	1.735	0.246	3.021	0.248
Adj. Income	9.364	1.954	3.002	1.690	-0.157	0.149
Education	0.015	0.005	0.003	0.005	0.003	0.005
Black	-0.110	0.025	-0.228	0.031	-0.297	0.041
Hispanic	0.017	0.035	-0.007	0.040	-0.063	0.052
American Indian	-0.072	0.076	-0.079	0.092	-0.091	0.117
Asian American	0.036	0.082	-0.048	0.066	-0.059	0.054
Married	-0.040	0.020	-0.007	0.018	0.012	0.023
Age	-4.368	0.260	-3.108	0.306	-2.308	0.370
Age Squared	3.463	0.250	2.410	0.315	1.846	0.389
Degrees of Freedom	37,903		42,310		39,854	
Years	29		29		29	

# Appendix

Table 2: Pearson's correlations among annual income growth at different income levels.

	20th	40th	60th	80th	95th
20th Percentile	1.000	0.858	0.814	0.761	0.683
40th Percentile		1.000	0.897	0.860	0.747
60th Percentile			1.000	0.924	0.807
80th Percentile				1.000	0.886

Table 3: Multilevel model results, estimating retrospective sociotropic assessments for the poor (left) and wealthy (right) December respondents. The coefficient for age squared was multiplied by 100.

	$\beta_l$	SE	$\beta_u$	SE
Intercept	-15.847	33.951	-98.609	48.511
Income Growth (95th)	8.104	6.605	11.320	9.366
Income Growth (20th)	13.635	7.321	25.043	10.374
Natl Unemp (1)	-0.098	0.103	0.068	0.146
Year	-0.001	0.015	0.032	0.022
Stock Change (1)	2.803	2.141	4.415	3.051
Adj. Income	4.078	6.713	-0.224	0.472
Education	0.026	0.017	-0.032	0.017
Black	-0.055	0.086	-0.359	0.134
Hispanic	-0.022	0.124	0.236	0.161
American Indian	0.207	0.245	0.420	0.416
Asian American	-0.212	0.293	-0.419	0.171
Married	-0.003	0.063	0.024	0.073
Age	-0.034	0.008	-0.022	0.012
Age Squared	0.037	0.008	0.008	0.012
Degrees of Freedom	3,422		3,279	
Years	31		31	

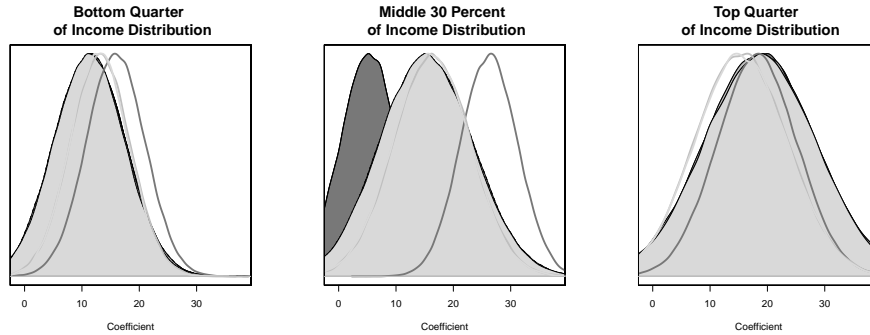


Figure 4: For the poor (left), middle-income (center), and wealthy (right) respondents, these figures depict the impact of income growth at the 20th and 60th percentiles. The three shades of grey correspond to different models: a model that only includes income growth (dark grey), a model that adds monthly economic indicators (grey), and a model that also adds individual-level demographics (light grey). Densities for growth at the 20th percentile are not shaded, while those for growth at the 60th percentile are. Across all variables and models, the coefficients are almost entirely indistinguishable.

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