

# Understanding Public Perceptions of Growing Economic Inequality

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## **Abstract**

While most Americans appear to acknowledge the large gap between the rich and the poor in the U.S., it is not clear if the public is aware of recent changes in income inequality. Even though economic inequality has grown substantially in recent decades, studies have shown that the public's perception of growing income disparities has remained mostly unchanged since the 1980s. This research offers an alternative approach to evaluating how public perceptions of inequality are developed. Centrally, it conceptualizes the public's response to growing economic disparities by applying theories of macro-political behavior and place-based contextual effects to the formation of aggregate perceptions about income inequality. It is argued that most of the public relies on basic information about the economy to form attitudes about inequality and that geographic context—in this case, the American states—plays a role in how views of income disparities are produced. A new measure of state perceptions of growing economic inequality over a 25-year period is used to examine whether the public is responsive to objective changes in economic inequality. Time-series cross-sectional analyses suggest that the public's perceptions of growing inequality are largely influenced by objective state economic indicators and state political ideology. This research has implications for how knowledgeable the public is of disparities between the rich and the poor, whether state context influences attitudes about inequality, and what role the public will have in determining how expanding income differences are addressed through government policy.

# Introduction

With President Obama recently declaring that income inequality is “the defining challenge of our time,”<sup>1</sup> it appears the issue of inequality has continued to gain prominence since the recent financial crisis. This attention is perhaps unsurprising when considering the remarkable expansion of economic inequality in the U.S. over the past several decades. As researchers establish a better understanding of the causes and consequences of growing inequality, a commonly asked question is whether Americans are aware of this transformation of the income distribution. Are the public’s collective perceptions of inequality reflective of objective changes in the income gap?

While most of the public appears to acknowledge the gap between the rich and the poor in the U.S., it is not clear if they are aware of *changes* in income inequality over time. As Figure 1 demonstrates, even with the substantial growth in inequality in recent years, public opinion data suggest perceptions of growing economic disparities have remained mostly unchanged since the 1980s. As one author comments, “The fact that public perceptions of economic inequality bear so little relationship to actual trends in inequality must temper an overly optimistic assessment of the extent to which ordinary people are aware of changes in the relative fortunes of the rich and the poor (Bartels 2008, 146).” This finding has important implications since the public’s understanding of inequality can shape the discourse surrounding the issue, who participates in discussions about inequality, and how policy debates related to income differences evolve. After all, a public that is unaware of or ambivalent about inequality is unlikely to demand political or economic change on the basis of growing income differences.<sup>2</sup>

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<sup>1</sup> President Obama’s remarks were made on December 04, 2013 at the Town Hall Education Arts Recreation Campus (THEARC) in Washington, D.C. (<http://www.whitehouse.gov/the-press-office/2013/12/04/remarks-president-economic-mobility>).

<sup>2</sup> Of course, it is possible that debates about income inequality can influence how the public views inequality. The main point here is that public involvement in discussions about inequality is less likely to occur if most people are unaware of the issue to begin with. The importance of the public’s understanding of inequality is discussed more fully in the next section.

[Figure 1 about here]

The current work on public perceptions of inequality, however, is somewhat limited in how it assesses the link between actual and perceived income inequality. These studies mostly examine attitudes at the individual level and have largely treated the issue of inequality as a national phenomenon. Additionally, when evaluating how the public views income differences researchers tend to use a relatively narrow conceptual definition of inequality. This study provides a framework for understanding how the public has collectively responded to over time changes in economic inequality, something that is not offered by the current literature. This is done by integrating existing theories—those that address aggregate change in public opinion over time, the types of information that may lead to collective opinion change, and the influence of geographic context on opinion—which are then used to develop expectations for how the public has collectively responded to the rise in income inequality in recent decades. The result is an approach that emphasizes the dynamic nature of how the public perceives inequality.

More specifically, this study departs from existing research by using a macro-behavior approach to evaluate the public's collective perceptions of income disparities. Examining aggregate trends in opinion is particularly useful when change in opinion over time is expected to be important. This is certainly the case with perceptions of inequality where it is essential to determine whether citizens are responsive to objective changes in income differences over recent years. Much of the current literature on this topic has focused on beliefs about inequality at the individual level, which makes it difficult to assess change in attitudes over time.

Additionally, expectations about how people understand inequality are developed by generalizing theories of macro behavior. Existing research on beliefs about inequality has almost exclusively relied on approaches that focus on how citizens view the concept of equality—and its relationship to attitudes like egalitarianism and individualism—without spending much time considering how the public consumes information about the economy or whether we should expect the public to systematically respond to changes in economic circumstances. In other words, scholarship on economic inequality has largely emphasized aspects of the issue associated with fairness

and has given less attention to the role of general perceptions of economic outcomes and how these perceptions might shape views of inequality.

Finally, the American states are used to assess whether variations in economic and political context shape the public's understanding of inequality. With few exceptions, the rise in U.S. inequality is used as the reference point for examining shifts in people's perceptions of income differences. This may be restricting our view of how the public understands inequality when considering the very different economic and political environments citizens experience from state to state. Explored in more detail below, the states have produced quite distinct forms of inequality that may shape how their residents view differences in income (e.g., see Figure 2).

To assess the public's understanding of economic inequality, a new measure of state-level perceptions of growing inequality is developed using recent advances in public opinion estimation. The measure of perceived growth in inequality is analyzed using time-series cross-sectional analyses to determine whether objective indicators of state income inequality, as well as other political and economic factors, affect the public's awareness of changes in the income distribution. The results reveal that when assessed from a macro perspective the public is remarkably aware and responsive to trends in observed inequality.

## **Who Cares? The Public's Understanding of Rising Inequality**

Making sense of how people perceive income inequality and where these perceptions come from is important for several reasons. First, if the public is completely unaware of growing economic disparities it is unlikely they will demand a policy response to the issue. In other words, it will be difficult to justify any kind of government intervention on the basis of an issue most Americans do not recognize. Alternatively, if people are aware of growing inequality this knowledge may provide an important link between the distribution of income and policy outcomes, particularly policies designed to redistribute wealth.

Second, the factors that influence the public's perceptions of inequality will have impli-

cations for the types of government policies people will be willing to consider as a way to make economic outcomes more equitable (McCall and Kenworthy 2009). To appreciate the significance of this point, it is important to recognize that how income inequality is defined and the policies that influence the income distribution can be quite diverse. When thinking about income inequality, average Americans may take into account a number of relevant economic factors. Expanding top incomes, stock market performance, the growth of the middle class, poverty rates, and more general measures of the income distribution (e.g., the Gini coefficient) are just some characteristics of the economy that might shape how an individual views inequality.

Similarly, the public policies that shape income disparities can take on many forms, including taxes and government transfers, as well as policies like the minimum wage and financial regulation that influence pre-redistribution incomes (Kelly 2009; Kelly and Witko 2012). Since a variety of government programs can address inequality in different ways, the preferred solutions to address growing income differences may depend on the aspects of the economy that affect the public's perceptions of inequality. For example, if people's view of inequality is mainly driven by the rapid escalation of incomes among the super-rich, placing a heavier tax burden on top income earners might become a favorable solution to growing inequality. If views about inequality are instead largely shaped by a perceived growth in poverty, it is possible the public will place more emphasis on policies that direct resources to the poor. These are obviously very basic illustrations and in reality these relationships are much more complicated. In any case, the main point is that the factors that structure perceptions of income inequality have the potential to influence subsequent policy debates connected to the issue of inequality.

Finally, an important line of research that connects economic inequality to government policy argues that the public is likely to demand more government redistribution as income inequality increases (Benabou 2000; Kelly and Enns 2010; Lupu and Pontusson 2011; Meltzer and Richard 1981; Moene and Wallerstein 2001). This work often relies on the assumption that the public is aware of changes in the income distribution but this assumption is rarely supported with empirical evidence. Because of this, it is unclear whether citizen attitudes about redistribution

are being shaped by changes in inequality or if some other process is at work. To more fully understand whether inequality shapes how the public views the role of government in addressing economic outcomes, we first need to answer the essential questions of whether people are aware of inequality and, if so, what factors influence the public's perceptions of income disparities. The recent literature on citizen beliefs about inequality provides a good starting point for assessing these questions.

### **Existing Research on How the Public Views Inequality**

While research on attitudes about income inequality continues to grow, the extant literature on the public's views of inequality provides a number of important insights. Early studies of how individuals understand inequality found that core values, such as individualism and equal opportunity, play a large role in shaping beliefs about why inequality exists and whether unequal outcomes should be tolerated (Feldman 1988; Kluegel and Smith 1986; McClosky and Zaller 1984). Equipped with an increasing number of opinion polls with questions focusing on economic outcomes and policy attitudes, recent research has provided a more comprehensive and nuanced understanding of the public's relationship with inequality (Bartels 2005; 2008; Hayes 2013; Lupia et al. 2007; McCall 2013; McCall and Kenworthy 2009; Page and Jacobs 2009).

One conclusion resulting from these studies is that many Americans have at least a basic understanding of income inequality (Bartels 2008; McCall and Kenworthy 2009; Page and Jacobs 2009). In recent years, for instance, a strong majority of the public consistently agrees that "Differences in income in America are too large (McCall and Kenworthy 2009)." Additionally, beliefs about inequality appear to shape people's policy attitudes. These studies suggest those who are more concerned about income differences and place more emphasis on egalitarian principles are also more likely to support redistributive policies like taxing the rich or providing assistance to the poor (Bartels 2008; Franko, Tolbert and Witko 2013; Hayes 2013; McCall 2013; McCall and Kenworthy 2009). Less agreement exists, however, on the extent to which changes in the distribution of income actually factor into attitudes about government. For instance, studies have also found

that a majority of Americans favor largely regressive policies (Bartels 2005; 2008) and that support for redistributive policies has changed very little during recent periods of expanding inequality (McCall and Kenworthy 2009).

The uncertainty surrounding the connection between inequality and preferences for redistributive policy again brings up the fundamental question of how aware the public is of income inequality. Although most people correctly acknowledge an income gap between the rich and the poor, when more closely evaluating the public's response to questions about the growth of inequality over time the results are less encouraging. Referring to the survey question inquiring about income differences over the last 20 years, Bartels suggests that even though most people say these differences have grown, this appears "to reflect cynical folk wisdom more than close attention to actual economic trends (2008, 129)." Similarly, when examining aggregate responses to a Harris Poll question asking individuals whether it is true that "the rich get richer and the poor get poorer," a question consistently asked since the 1960s, the public's perceptions of economic inequality are seemingly unresponsive to the remarkable expansion of inequality beginning in the 1980s (Bartels 2008; also see Figure 1).

These findings cast doubt on how much the public really knows about income inequality. Nonetheless, evidence of whether a connection exists between growing inequality and citizen perceptions of growing inequality is mixed and far from conclusive. Some of the uncertainty surrounding the nature of the relationship between economic outcomes and citizen perceptions may be resolved by taking a different approach to how we examine the public's understanding of economic inequality.

## **Macro Opinion, State Context, and Economic Inequality**

One potential reason researchers have had trouble determining whether a connection exists between growing income inequality and the public's perceptions of inequality is that individuals simply do not have the appropriate knowledge required to comprehend changes to the income



distribution. This is a prominent explanation in Bartels's (2008) work where he suggests a lack of information prevents most people from associating inequality with their political attitudes (also see Bartels 2005). This argument is consistent with some of the earliest research on political behavior suggesting that many individuals have a somewhat shallow understanding of the political world (Campbell et al. 1960; Converse 1964).

Although the prospect of uncovering an informed public that understands and cares about economic inequality seems doubtful in the context of this evidence, a number of notable studies argue that public opinion is actually quite stable and meaningful when observed in the aggregate (Erikson, Mackuen and Stimson 2002; Page and Shapiro 1992; Soroka and Wlezien 2010). This research suggests that some individuals do respond to questions about politics in ways that are inconsistent and even illogical, but many people also have rational responses to the same questions. When taken collectively, we can make sense of public opinion because those views on a given topic that are essentially random will cancel out in the aggregation process. For most issues this leads to a collective public opinion that is stable over time with changes generally occurring slowly in response to changes in the political or economic environment. This implies that those who systematically change their attitudes will be the main cause of shifts in aggregate public opinion. Since aggregation is the key to understanding public opinion from the macro perspective, emphasis is typically placed on viewing the structured movements of opinion over time.

Particularly relevant for the study of income inequality, various facets of the economy appear to have a substantial influence on macro opinion. For instance, a long line of research links economic conditions to voting behavior (Kinder and Kiewiet 1981; Lewis-Beck 1988; Lewis-Beck and Stegmaier 2007) and electoral outcomes (Abramowitz 1988; Bartels and Zaller 2001; Gelman and King 1993; Lewis-Beck and Rice 1992). In addition to elections, the economy also affects other aspects of political behavior (e.g., presidential approval and partisanship) and aggregate perceptions of economic conditions tend to reflect objective measures of economic growth (De Boef and Kellstedt 2004; Erikson, Mackuen and Stimson 2002; Hopkins 2012). So even though most Americans are not experts on the economy, macro opinion seemingly follows general economic

trends. This is somewhat impressive when considering the low levels of economic information among individuals (e.g., Blinder and Krueger 2004; Conover, Feldman and Knight 1987; Curtin 2008), but the findings make sense from a macro interpretation. Most people do not actively seek out detailed information about the economy but they are regularly exposed to signals related to current economic conditions. Media coverage of topics like unemployment, inflation, and the stock market filters down to the public directly when individuals follow the news and indirectly through people's everyday interactions with others. This latter mechanism is consistent with studies demonstrating that the public often obtains relevant information needed for decision making through the use of heuristics (Lupia and McCubbins 1998; Lupia 1994; Popkin 1991; Soroka and Wlezien 2010). As Erikson, Mackuen and Stimson explain, "citizens are exposed to much free or accidental information about the economy, emanating in large part from observable indicators and expert commentary. Thus, the average of economic perceptions . . . is reasonably informed (2002, 83)."

The macro perspective offers a different approach to studying the public's perceptions of inequality. Since nearly all of the work examining attitudes about inequality has focused on individual-level beliefs (see the discussion in the previous section), it is reasonable to suggest that studying views of inequality in the aggregate will provide additional insight into how Americans understand the recent rise in income differences. Similar to general perceptions of the economy, the public does not need complete information about income differences to have meaningful attitudes about inequality in the aggregate. At the same time, at least some available indicators related to inequality are required for the collective public to systematically shift its perceptions of changes in income disparities. But what aspects of the economy are likely to influence aggregate views of inequality?

It may be the case that the public views inequality as an issue directly associated to the unequal distribution of income. This is similar to the way many scholars think about inequality and suggests macro opinion would be responsive to changes in the overall distribution of incomes. It is not clear, however, what information the public would potentially be exposed to that would

signal a change in the income distribution. While it is unlikely that the general public will be aware of distributional measures of economic inequality like the Gini coefficient, the media may discuss topics such as the growth or expansion of inequality—but this too seems improbable. In fact, McCall’s (2013) recent work suggests specific news coverage of income inequality is quite limited. Over a 30-year period going back to 1980, the largest total number of articles covering inequality in a given year is five.<sup>3</sup>

While the media might not explicitly discuss the issue of economic inequality, McCall (2013) shows that the media covers inequality in other ways by emphasizing comparisons among groups or by focusing on inequality related themes. For instance, articles on the topics of social class and job insecurity tend to use phrases related to executive salaries, the rich, and unemployment. This suggests the possibility that the public might use information about various aspects of economic outcomes when thinking about income inequality. Some will place more importance on particular aspects of the economy than others, and not everyone will have the same factors in mind when developing perceptions of inequality. Some may focus more on CEO pay or the stock market, while others are more concerned about unemployment and poverty. The result is that aggregate perceptions of inequality will likely reflect an assessment of different aspects of salient economic outcomes rather than thinking about inequality as a distributional issue.<sup>4</sup>

Up to this point, the discussion of how the economic and political environment influences public perceptions of growing inequality has not explicitly stated what makes up one’s environment. When attempting to better understand how people view inequality it is certainly reasonable to expect national economic and political indicators to affect public behavior, but this approach would ignore the often times very different political and economic contexts of the American states.

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<sup>3</sup> The sources included in the search for newspaper articles includes *Newsweek*, *TIME*, and *U.S. News and World Report* (McCall 2013).

<sup>4</sup> Not only is it unlikely that the public thinks about inequality in terms of distortions in the distribution of income, creating a measure of what the public believes the income distribution looks like would be difficult if not impractical. This is particularly true in the context of this study, which would require an over time measure of how the public views the distribution of income.

To use an example relevant to this study, consider the growth in state economic inequality over the past few decades. Similar to the now well-known trends in inequality at the national level, income differences in the states have certainly expanded in recent years. The extent of this growth, however, has been considerably different from state to state (Frank 2009; Kelly and Witko 2012; Langer 1999). For instance, Figure 2 demonstrates that states like Ohio and Iowa have experienced a steady climb in top incomes since the 1980s, but the overall growth of inequality in these states is relatively modest when compared the dramatic rise in inequality observed in states like California and New York.<sup>5</sup> This suggests the public's experience with income inequality can be quite distinct depending on the place where one lives.

[Figure 2 about here]

It is perhaps unsurprising that the states can produce such dissimilar environments. Differences in the political, economic, and social contexts of the American states have substantial consequences for political outcomes (e.g., see Erikson, Wright and McIver 1993), which have important implications for state economies. And many people appear to be aware of these state differences. Evidence suggests state-level economic factors influence voting behavior (Books and Prysby 1999; Ebeid and Rodden 2006; Reeves and Gimpel 2012) and that opinion is generally responsive to local economic conditions (Newman et al. 2013). These distinctions in state context may have a significant influence on public beliefs about inequality, yet nearly all research of this kind has focused on national opinion. In two important exceptions to this emphasis on the national income gap, Xu and Garand (2010) look at public views of inequality at the state level and Newman, Johnston and Lown (2015) examine whether local income differences influence individual attitudes about the economy. But again, these studies are unable to assess the collective response to over time changes in inequality, a relationship that is essential to understand if we want to know the extent of the public's reaction to the recent expansion of income inequality. This study addresses this gap in the literature by considering variations in state economic conditions when

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<sup>5</sup> Figure A.1 in the appendix shows the trends in top income share growth for all contiguous states.

assessing how the public develops perceptions of inequality as it has evolved over time.

To summarize, existing research has largely emphasized the role of individual attributes in shaping the public's perceptions of income inequality, making it difficult to assess whether the expansion of the income gap in recent decades has influenced how the public understands inequality. This study focuses on changes in collective perceptions of inequality, rather than individual attitudes, by applying theory from macro behavior research to the issue of how the public comprehends inequality. The macro behavior literature shows that aggregate opinion is broadly responsive to changes in economic conditions, implying that the public may be aware of changes to the economic circumstances of particular groups (e.g., the rich and the poor) and uses this knowledge to inform their perceptions of changing inequality. Finally, consistent with a number of studies demonstrating that geographic context affects how people understand inequality, the states are used as the context within which this macro approach to examining views on changing inequality is applied.

## **Measurement, Analysis, and Results**

### **Measuring Perceptions of Inequality**

To better understand the public's perceptions of economic inequality a measure of perceptions over time for each state is needed. One explanation for why so few studies have examined views of inequality over time is that data limitations have prevented researchers from conducting thorough analyses of attitudes on the issue. The main barrier is that survey questions asking people about income inequality are rarely asked consistently from year to year. Fortunately, one question in particular has been asked by several polling organizations dating back to the 1980s. The relatively straightforward question (briefly mentioned above) asks if people believe the rich are getting richer and the poor are getting poorer. Not only has the question been asked regularly over time, but it also uses a simple comparison—between those who are rich and those who are poor—to tap into perceptions of income differences. Altogether, the question was asked on 34 national surveys

during the 1987-2012 period, with an average of more than 1,500 respondents per survey and a combined total of over 53,000 individuals polled.

While all of these polls are national surveys designed to make inferences about the country as a whole, a public opinion measurement approach known as multilevel regression and post-stratification (or MRP) allows for the estimation of aggregate state opinion using typical national opinion polls. Research has shown that MRP provides accurate estimates of state and local opinion even when using a single national survey (Lax and Phillips 2009a;b; 2012; Park, Gelman and Bafumi 2006). This is the approach taken here to create a unique measure of state-level perceptions of growing economic inequality. A detailed description of the estimation procedure used to create the measure, along with the results of a simulation analysis conducted to assess the accuracy of the estimates, can be found in the appendix.<sup>6</sup> The result is a series of aggregate opinion for all 48 contiguous states from 1987 to 2012 indicating the percentage of those agreeing with the “rich are getting richer” statement, capturing the extent to which the collective public views inequality as growing. This variable is used throughout the remainder of this study to account for state-level perceptions of growing inequality.<sup>7</sup>

A first look at the state estimates of perceived growth in inequality is presented in Figure 3. The plot shows the over time trends and variation in perceptions for each state and also provides a general comparison of opinion across the states. The figure suggests that not only do the states

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<sup>6</sup> The studies cited above demonstrate that the MRP measurement approach is superior to the more straightforward disaggregation approach to measuring aggregate state opinion (i.e., simply using opinion percentages for each state) in that MRP produces estimates that are more accurate (closer to true opinion) and more stable (less error) than disaggregation. The simulation results presented in the appendix are consistent with these studies, showing that MRP estimates of perceived inequality outperform disaggregation estimates. While MRP has many advantages over alternative measurement approaches, it should be noted that many studies have used state MRP opinion measures as independent variables in applied research and less is known about the performance of MRP estimates when used as dependent variables. It would be helpful for future research to examine the general performance of MRP measures when they are used as dependent variables in applied contexts.

<sup>7</sup> The terms *perceptions of growing inequality* and *perceived growth in inequality* are used interchangeably to refer to the measure.

differ in how inequality is understood in recent decades, but it also demonstrates that there is variation in how much perceptions of growing inequality change within the states. While opinion in most of the states generally trends toward seeing less inequality over this period, many states have distinct changes in the public's perceptions of growing inequality. The sharp downward trend in perceptions exhibited by Georgia and Texas are certainly different than the less pronounced trends seen in Maryland, Michigan, and Rhode Island. It is also of value to note that, regardless of the general trend in a state, perceptions of growing inequality in every state increased and decreased quite regularly over the entire period. This point is important since, as discussed above, actual levels of income inequality have grown substantially since the 1980s (see Figure 2). If one were to only focus on overall trends in the public's perceptions of growing inequality and trends in objective inequality indicators, it would be reasonable to conclude that Americans are not well informed about economic inequality. An alternative possibility, however, is that the regular changes in perceived growth in inequality reflect real changes in state environments, including shifts in income differences, which would be consistent with expectations based on the macro opinion literature.

[Figure 3 about here]

So is it the case that while general trends in observed and perceived inequality do not appear to be related, the public is aware of short-term changes in inequality and these changes do influence their understanding of whether economic inequality is growing? One way to begin to assess this possibility is to compare over time shifts in observed income inequality and over time shifts in the public's perceptions of growing inequality—in other words, examine inequality and perceived inequality in “first differences” rather than in “levels.” Figure 4 demonstrates annual changes in perceived growth in inequality along with changes in the top 10% share of total income for several select states.<sup>8</sup> Top income share is simply the proportion of total income held by the top 10% of

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<sup>8</sup> While the eight states presented in Figure 4 are not intended to be representative of all states, the selected states do provide a mix of small and large states and states from different parts of the country. In any case, the main intention of the plot is to show how changes in state inequality and public perceptions of inequality can be related.

income earners in the state. Recent studies have found that the rise of income inequality since the 1970s is largely due to the rapid expansion of top incomes (see Piketty and Saez 2003; 2006; Saez 2008). This finding is central to Hacker and Pierson’s (2010) now well-known account of what they refer to as America’s winner-take-all economy, where the benefits of economic growth are almost exclusively concentrated among the richest individuals in the country. In addition to top incomes being the main determinant of modern inequality, the public may also be more likely to understand and be exposed to information about top incomes (e.g., exorbitant CEO bonuses) than a concept like the skewed distribution of income. Examining the relationship between inequality and the public’s perceptions of growing inequality, Figure 4 illustrates a remarkable association between changes in state top incomes (i.e., whether actual inequality is growing) and changes in the perceived rise of inequality (i.e., whether the public believes inequality is growing). The frequent shifts in public perceptions of growing inequality that could easily be dismissed as arbitrary opinion change appear to be, to a certain extent, a result of similar changes in the share of top incomes.<sup>9</sup>

[Figure 4 about here]

Of course, this is only preliminary, descriptive evidence of the link between trends in actual economic inequality and the public’s perceptions. More robust models of perceived growth in inequality are used below to examine the influence of various objective measures of income disparities while also accounting for additional economic and political factors that may affect views of inequality.

## **Modeling Perceived Growth in Inequality**

The top 10% income share measure introduced in Figure 4 is used as a primary indicator of state inequality, along with a related top 1% income share measure. Perhaps the most commonly employed indicator of inequality is the Gini coefficient, which measures the distribution of income

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<sup>9</sup> This is an example of over-time relationships being masked by variable “trending,” which is a phenomenon that is well known in the time-series literature (e.g., see Enders 2015).



on scale from 0 to 1 with larger values reflecting more inequality. Since this measure is often used in studies of economic inequality, the Gini coefficient is also evaluated to test whether public perceptions of inequality are responsive to changes in the income distribution.<sup>10</sup> It is important to keep in mind that according to the expectations discussed above it is not necessary for the public to know the precise share of income held by the top 10% or the value of the Gini coefficient in order for aggregate perceptions of inequality to trace actual changes in inequality. Instead, it is more likely that through exposure to a variety of information from a number of sources people are generally aware of how well the rich are doing, for example, and this information will shape the public's collective perceptions of inequality.

Several additional economic and political factors are also included in the analysis to account for other potential influences on the public's perceptions of growing inequality.<sup>11</sup> State unemployment rates and poverty rates are used as indicators of how well lower income groups are faring economically. When thinking about income differences the public will likely consider information related to these factors since they are topics that are typically covered in the news. Similar to the way individuals might perceive a connection between top incomes and economic inequality, information related to poverty and unemployment may also provide signals about income differences. To reiterate, the argument here is not that most people have specific information about the rate of unemployment or poverty. Rather, these objective indicators are used to assess whether the public's perceptions of growing inequality are at least partially based on changes to the economic

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<sup>10</sup> The measures of top 1% income share and top 10% income share were developed by Frank et al. (2015), and the Gini coefficient measures were created by Frank (2009). Similar to the pioneering work of Piketty and Saez (2003; 2006), Internal Revenue Service tax data is used to construct all of the measures, which means they are based on pretax gross income. The sources of income include wages, salaries, capital income, and entrepreneurial income. The top income share data are available at <http://www.wid.world/> and the Gini coefficient measures can be found at [http://www.shsu.edu/~eco\\_mwf/inequality.html](http://www.shsu.edu/~eco_mwf/inequality.html).

<sup>11</sup> Discussed in more detail below, all of the variables included in the analyses presented here are tested to ensure that they are of the same order of integration. This is important for any time series analysis so that meaningful inferences can be made based on results of the models (Enders 2015)

fortunes of those at the bottom of the income ladder.<sup>12</sup>

Median income (in thousands of dollars) is also considered to examine the possibility that aggregate opinion on income inequality is driven by perceptions of the strength of the middle class and general trends in the economy. When the state as a whole is doing well financially, people may view this as a sign that everyone is prospering and that inequality is not growing or is even in decline.<sup>13</sup> A particularly interesting finding from Bartels's (2008) work is that political ideology can be an important intervening influence between the public's views on inequality and other political attitudes. This is largely because ideology tends to reflect core beliefs that are closely related to ideas like egalitarianism and individualism. This suggests the possibility that the public in a more liberal-leaning state where more emphasis is placed on the ideal of egalitarianism will be more likely to view economic outcomes as unequal. A measure of state policy liberalism is used in the models to examine whether it affects perceptions of growing inequality. Finally, the racial composition of the states is accounted for by including the percentage of the state that identifies as white in the models of perceived growth in inequality.<sup>14</sup>

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<sup>12</sup> State poverty rate data were obtained from the U.S. Census website (<http://www.census.gov/>) and unemployment data are from the Bureau of Labor Statistics (<http://www.bls.gov/>).

<sup>13</sup> As a robustness check, the models presented below were also estimated with the addition of a variable accounting for state per capita income. The results, which can be found in Table A.4 in the appendix, lead to substantively similar conclusions and indicate that per capita income does not have a statistically significant effect on perceived growth in inequality. This finding is likely a result of the high level of correlation between state per capita and median income.

<sup>14</sup> Data on median income and race were accessed through the U.S. Census website (<http://www.census.gov/>). Estimates of state policy liberalism were developed by Caughey and Warshaw (2016) and are available at: <http://dx.doi.org/10.7910/DVN/ZXZMJB>. Models of perceived growth in inequality were also estimated using the Enns and Koch (2013) measure of policy mood as an alternative to the Caughey and Warshaw (2016) measure. The results can be found in appendix Table A.5, which are mostly consistent with the results presented below in the main text. However, it should be noted that the Caughey and Warshaw (2016) measure of ideology is preferred since it is clearly a non-stationary series for all states—like all other variables included in the models—while the Enns and Koch (2013) measure was found to have a substantial number of state series (over half) that are stationary. Thus, the appendix models using the measure of policy mood should be interpreted with caution. The Caughey and Warshaw (2016) measure, having the same order of integration as the other variables used in the models, is viewed as the better

Since public perceptions of growing inequality are measured over time at the state level, a modeling approach for time-series cross-sectional (TSCS) data is needed. When modeling TSCS data researchers must be aware of issues related to repeated measures over time (e.g., non-stationarity and autocorrelation) as well as the clustered nature of the data (e.g., over time measures grouped by state), and a number of strategies have been proposed to address these common methodological obstacles (Pesaran, Shin and Smith 1999; Wilson and Butler 2007). To assess whether the public's understanding of inequality has followed objective measures of income inequality, an error correction model (ECM) is used to estimate the relationship between changes in perceived growth in inequality and actual shifts in state income differences.

Specifically, the first difference of the dependent variable, perceptions of economic inequality, is regressed on a lagged version of the dependent variable and a lagged and differenced version of each explanatory variable. The ECM is employed here since it is one of the most general time-series models and allows researchers to account for both long- and short-term effects over time (De Boef and Keele 2008; Kelly and Enns 2010). The main distinction to make between short- and long-term effects is that short-term effects occur immediately while long-term effects are distributed over time. When the effect of a variable is distributed over time, the long-run multiplier provides an estimate of the total effect of the variable for all periods.<sup>15</sup>

When estimating these models using TSCS data it is important to consider both over time dynamics and the potential for cross-sectional heterogeneity. One way to analyze grouped time-series data is to pool all states into a single model and attempt to control for cross-sectional differences using fixed effects or random intercepts. Both approaches, however, assume that the effect of each regressor in the model on the dependent variable is equal across states. This may not only be an inappropriate assumption to make conceptually, but if the effects are not equivalent across groups the estimated model can possibly lead to inconsistent results and misleading inferences (Frank 2009; Pesaran and Smith 1995). An alternative approach, and the one used here, is to allow

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choice in this context.

<sup>15</sup> A discussion of how the long-run multiplier is calculated can be found in the appendix.

the coefficients, intercepts, and error variances to be uniquely estimated for each individual state. This is the model proposed by Pesaran and Smith (1995), referred to as the mean-group estimator, where separate time series models are estimated for each group (in this case, each state) and the effects are then averaged across all models to obtain a final set of estimates.<sup>16</sup>

Fisher augmented Dickey-Fuller stationarity tests (specifically designed for TSCS data) were conducted to ensure that each variable used in the analyses are the same order of integration so that meaningful inferences can be made based on results of the models (Enders 2015). All variables for each state time series used in the model estimates have a unit root (i.e., they are non-stationary series). Importantly, cointegration tests were also performed and suggest that there is a long-run relationship between changes in inequality and the public's perceptions of income differences. Pedroni's panel cointegration tests (Pedroni 2004) show that the null hypothesis of no cointegration between objective inequality and perceptions of inequality can be clearly rejected for all three measures of income inequality (i.e., the top 10% income share, top 1% income share, and the Gini coefficient). Finally, all models presented below include a time trend in the estimation of each state panel to account for any remaining trending in the first-differenced dependent variable. A more detailed discussion of the model estimation can be found in the appendix.

## **Results**

Three sets of error correction model results are presented in Tables 1, 2, and 3, where the top 1% income share, top 10% income share, and the Gini coefficient are used, respectively, as different approaches to operationalizing objective levels of inequality in the states. For each measure of inequality, the results for two separate models are reported. When assessing the order of integration for each variable and each state (see the discussion above), a small number of state panels appear to have stationary series for the measure of poverty (three states) when all other

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<sup>16</sup> As a robustness check, the model results presented below were replicated using a fixed-effects approach as an alternative to the mean-group estimator. While some of the results do differ across models the main conclusions from both sets of models are similar. The results of these additional model estimates can be found in the appendix.

variables included in the models have unit roots. To allow for an unambiguous interpretation of the estimated effects of state poverty, the particular panels that are of different orders of integration can simply be dropped from the models. The model specifications for each measure of income inequality demonstrate the results when state poverty rates are not included (model 1) and when the measure of poverty is included (model 2).

Examining the results in Table 1, both models show a positive and statistically significant long- and short-run effect of top 1% income share on the public's perceptions of inequality. As expected, this indicates that the public is collectively more likely to view inequality as growing when the richest portion of society increases its overall share of state income. Similarly, the estimated long-run effect of a state's unemployment rate on perceptions of growing inequality is also positive and significant for each of the models. This shows that growth in unemployment leads to higher levels of perceived growth in inequality, suggesting that the public uses information related to trends in employment to inform their views on economic disparities. Model 2 in Table 1 introduces the poverty rate as a regressor with the intention of capturing how well those at the bottom of the income ladder are doing in each state, and the results again conform to the expectations developed above. As state poverty rates increase, the public appears to be more likely to believe that inequality is growing. Finally, both models suggest that state ideology might shape how the public view economic inequality. The results indicate that when a state is more liberal, its residents are collectively more likely to view income inequality as growing. The long-run effect of state policy liberalism is statistically significant from zero at the 0.10 level in model 1 and significant at the 0.05 level in model 2.

[Table 1 about here]

Similar results are found in Table 2, where the top 1% income share is replaced with the top 10% share. Again, the estimated (long-run and short-run) effects in both models suggest that the public's perceptions of growing inequality do respond to objective trends in state inequality. Also, consistent with the previous results, public perceptions of growing economic disparities increase along with rises in unemployment rates and poverty rates. The estimated long-run effects

of unemployment and poverty are positive and statistically significant in each model. Consistent with the results in Table 1, Table 2 shows that the public's perceptions of rising inequality increase when a state is more liberal (again, these estimates are significant at the 0.10 level).

[Table 2 about here]

The final set of results is provided in Table 3 where the Gini coefficient is used in place of top income share. As discussed earlier, the Gini provides a more intricate way of accounting for income inequality since it is a distributional measure that is calculated using individuals from all income groups. Although the Gini coefficient can be a useful summary measure of inequality, changes in the Gini can be difficult to interpret since the measure does not indicate which portions of the income distribution are driving the changes.<sup>17</sup> Furthermore, it is unlikely that the general public thinks about economic inequality in terms of how skewed the income distribution is becoming, meaning it may be less reasonable to expect to find a substantial relationship between changes in the Gini and how the perceives inequality. In any case, it is still possible that the underlying factors that shape changes in the overall distribution of income—those conceivably captured by the Gini, like shifts in low, middle, and upper incomes—have a collective influence on the public's understanding of inequality.

[Table 3 about here]

The estimated effects shown in Table 3 suggests the public's understanding of economic inequality does follow changes in state Gini coefficients. Both the long- and short-run effects of the Gini are positive and significantly different from zero in all three models. Consistent with the estimates using top income shares to account for inequality, there is also a positive long-run effect between unemployment and perceptions of growing inequality that is statistically significant in

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<sup>17</sup> For instance, an increase in the Gini coefficient could potentially be the result of the rich pulling away from everyone else, the poor becoming poorer, or those in the middle of the income distribution becoming poorer. The Gini does not indicate which of these scenarios, or any other number of potential changes, is causing the measure to grow.

model 1, but does not reach conventional levels of significance in model 2. The estimated effect of state poverty on views of inequality is positive, but the long-run effect is only significant at the 0.10 level. The differences in the unemployment and poverty results relative to the top income share models are likely due to the more general trends in the income distribution being captured by the Gini coefficient, thereby leading to the appearance that unemployment and poverty rates are more modest than what is found in the other model specifications.

While Tables 1, 2, and 3 demonstrate that the public's understanding of changes in economic inequality are driven by objective indicators of inequality, there are differences in the extent to which the public responds to the various measures of inequality. One way to assess the substantive effect of the inequality indicators on perceived growth in inequality is to calculate the average total effect of the variables when changing them by a comparable amount. In this case, the influence of each inequality measure on public perceptions of growing inequality is assessed by increasing the top 1% income share, top 10% share, and the Gini coefficient from their values at the 5th percentile to their values at the 95th percentile.<sup>18</sup> Changing the top 1% income share from the 5th to 95th percentile would lead to an estimated increase in perceived growth in inequality of 16 percentage points, and a similar change in the top 10% share would increase the collective view that inequality is growing by 15.6 percentage points. Due to the complexity of the Gini coefficient it was suggested that the public's response to changes in the Gini would be relatively modest, which is the case when examining the substantive effect of the measure on perceived growth in inequality. An increase of the Gini from the 5th to 95th percentile is estimated to increase public perceptions of growing inequality by around 9.6 percentage points, about 60% of the effect found for each of the top income measures.

To summarize, the public appears to be quite responsive to changes in objective measures of income inequality overall, and are relatively more responsive to more straightforward indicators of

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<sup>18</sup> Estimates of the substantive effects presented here are based on calculations of each inequality variable's total effect from model 1 of Tables 1, 2, and 3. See the discussion in the appendix for details on how ECM total effects are estimated.

inequality (i.e., top incomes) than the more intricate Gini coefficient. Additionally, the public's understanding of inequality is seemingly shaped by changes in the aggregate economic circumstances of both the poor and the rich, which is demonstrated through the observed effects of unemployment and poverty rates on perceived growth in inequality. Contrary to the argument that Americans' understanding of inequality reflects a vague cynicism that is unresponsive to actual changes in income inequality over time (Bartels 2008), these findings demonstrate a collective opinion that responds dynamically to shifts in the economic circumstances of the rich and the poor that is consistent with the expectations based on macro opinion discussed above. This evidence suggests that views of inequality are not only driven by political ideology as studies at the individual level have shown (e.g., Bartels 2008; Kluegel and Smith 1986), but that aggregate perceptions of growing inequality change in response to changes in objective measures of income differences. These results also build on existing evidence from cross-sectional research that finds attitudes about inequality are shaped by geographic context (Xu and Garand 2010) by showing that collective opinion is attuned to shifts in economic disparities at the state level.

These findings do not necessarily imply that citizens have precise knowledge of how much of their state's total income is concentrated among the rich or how many people in their state are unemployed. It is more likely that many people are exposed to information related to the prosperity of groups at various positions on the income ladder and, in the aggregate, the public changes its perceptions of growing inequality based on this knowledge.

Consistent with previous research focusing on individual behavior (Bartels 2008; Kluegel and Smith 1986; Xu and Garand 2010), the time series analysis also shows that perceptions of growing inequality are at least moderately influenced by changes in state policy liberalism. That is, when states are more liberal, the public collectively views economic outcomes as becoming more unequal (see Tables 1 and 2). While these results focus on over time changes in policy liberalism within the states, it is also possible that the relative differences in ideology across the states shape political attitudes on perceptions of growing income inequality. One way to look at how variation in policy liberalism between states can influence the public's understanding of inequality can be found



in Figure 5. The plot shows the relationship between the state averages of inequality perceptions and policy ideology, which indicates that more liberal-leaning states (on average) are more likely to view income inequality as growing relative to more conservative states. This finding is consistent with the expectation that the core beliefs associated with political ideology likely influence how inequality is understood (e.g., Bartels 2008) and suggests the possibility that differences in policy ideology across the states may shape how the collective public views inequality.<sup>19</sup>

To provide a closer assessment of how state political context can influence the public's perceptions of inequality, the models presented in Tables 1, 2, and 3 are replicated for subsets of the states based on average levels of citizen liberalism.<sup>20</sup> A straightforward way of separating the states is to use the average value of state ideology as a dividing point between liberal and conservative states, which is the approach taken here. This will allow for an examination of whether political ideology conditions how the public forms its perceptions of inequality.

The results of the subsample models are included in the appendix, and the total effects for the measures of income inequality, unemployment, and poverty are presented graphically in Figure 6. The plot shows that, for the most part, the three measures of inequality have a similar effect on perceptions of growing inequality regardless of whether the states are mostly liberal or mostly conservative. The largest differences in how views about inequality are shaped by ideology can be seen in the total effects for the unemployment and poverty rates. In both cases, changes in these two factors have a substantial effect on how inequality is perceived in liberal states with higher levels leading more people to view inequality as growing, but a much smaller effect for those in more conservative states. This is particularly true for the top income share models, where the long-run effect of state poverty is approximately 2.5 times larger in liberal states than it is in conservative states. A comparable effect is found for the effect size of state unemployment rates,

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<sup>19</sup> While the relationship presented in Figure 5 is not particularly strong, the main intention of the plot is to highlight differences in perceived inequality and ideology *between* the states since to this point the focus of the analysis has been on variation *within* the states.

<sup>20</sup> Specifically, the models from the analyses that include the poverty rate measure (i.e., model 2 from each table) are replicated.

but only in the top 1% income share model. In other words, factors related to how well those at the bottom of the income distribution are doing appear to be more relevant in liberal-leaning states when it comes to the public's views on income differences. This result provides evidence supporting the possibility that state political context plays a role in bringing issues of equality to the attention of the public.

While this finding is consistent with micro level research that demonstrates a gap in perceptions of growing income differences between liberals and conservatives (Bartels 2008), it also expands on this literature by providing insight into how these ideological biases in the public's understanding of inequality are formed. From a macro perspective, the analysis suggests that the type of information used by the public to inform its views of inequality is dependent on political attitudes, where the collective public in liberal states are more likely to encounter information emphasizing the economic status of lower-income groups than are those in conservative-leaning states.<sup>21</sup>

## Conclusion

The recent expansion of economic inequality in the United States has not only raised moral concerns about fairness but it has also been linked to a number of tangible societal consequences. Income inequality may lead to decreases in economic productivity, stability, and growth (Stiglitz

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<sup>21</sup> Future research could certainly expand on these findings by carefully focusing on the factors that lead to differences in the information used to shape beliefs about growing inequality between liberal and conservative states. The literature suggests these differences may be a result of individual efforts to maintain ideological consistency (Bartels 2008) or the information the public is exposed to from elites and the media that may be influenced by ideological predispositions (Erikson, Mackuen and Stimson 2002; McCall 2013). Another explanation that could be further explored is whether existing state policies affect how the public understands changes in inequality. From a policy feedback perspective, those states with more liberal policies might make it more likely for people to consider the economic fortunes of lower-income groups while more conservative policy tends to place less emphasis on these groups (e.g., see Campbell 2012; Pierson 1993).

2012), more political power for the wealthy (Solt 2011; Solt, Habel and Grant 2011), increases in party polarization (McCarty, Poole and Rosenthal 2006), less political participation (Solt 2008; 2010), and deficient health outcomes (Wilkinson and Pickett 2011). The public is likely to play a role, perhaps even a significant one, in how income disparities and the problems resulting from them are addressed. A public that is unaware or ambivalent about the state of American inequality, however, is unlikely to emphasize income differences as an important political issue and insist on solutions that are intended to alleviate inequality.

This suggests that understanding how the public perceives inequality is an important first step in determining how the issue is addressed in the future. In general, research on the public's knowledge of inequality is mixed. Although evidence indicates people are generally aware of existing income differences, these attitudes do not appear to be connected to recent trends in growing inequality. This study builds on the current literature by taking a more nuanced approach in assessing how people view income inequality. A key aspect of this research is the use of a macro politics foundation to conceptualize how the public develops perceptions of inequality. This aggregate view of political behavior is ideal for examining how citizens collectively respond to over time changes in inequality. To this point, nearly all related studies have analyzed perceptions of income disparities at the individual level, largely concentrating on how beliefs about equality and individualism shape views of economic inequality. While this work has certainly produced a good deal of knowledge pertaining to attitudes about income differences, the approach used here may be more appropriate when evaluating perceptions of growing inequality.

Using the macro model and previous research on economic evaluations as a starting point, this paper also offers an alternative perspective on how the public understands inequality that is straightforward and practical. Rather than comprehending inequality as a distributional issue, it is more likely that aggregate perceptions of inequality are developed through exposure to information about various economic factors like the health of the stock market, issues related to poverty, and general economic growth. From this view, the public is not expected to have detailed knowledge about recent changes in the income distribution in order for collective perceptions of inequality

to make sense. Some are more attentive to record-breaking corporate profits while others care more about increases in homelessness. In the aggregate, information about these characteristics of the economy leads to perceptions of growing inequality that are largely reflective of objective indicators of economic disparities.

Finally, while most research has studied views of inequality from a national perspective we also know that state context can shape economic and political attitudes. This study takes advantage of the differences in inequality growth within and between the states to examine whether the public is aware of changing income differences. Using a unique measure of state-level perceptions of inequality, the results presented here show that the public is cognizant of changes in economic inequality. Over time changes in state top income shares, unemployment rates, and state poverty rates are three key economic indicators that significantly shape perceived growth in inequality. Political context also appears to influence how the public views inequality, with changes in unemployment and poverty having a stronger effect on perceptions of inequality in more liberal-leaning states relative to those states that are more conservative.

Providing evidence of an American public that is aware of changing economic inequality is essential for the general study of attitudes about income differences. While awareness of inequality does not necessarily translate to greater demand for action, a public that is responsive to wealth disparities has a greater potential to be involved in political discussions about inequality than a public that is unaware of these economic changes. Using the perspective developed in this work it is conceivable that researchers will have a more robust foundation for evaluating the relationship between expanding inequality and political behavior and whether the public's attitudes about inequality influence government action.

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## Tables and Figures

Table 1: The Effect of State Income Inequality on Public Perceptions of Growing Inequality, Top 1% Income Share

	$\Delta$ Perceptions of Growing Inequality			
	(1)		(2)	
	<i>b</i>	( <i>se</i> )	<i>b</i>	( <i>se</i> )
<i>Error Correction Rate</i>				
Perceived Inequality <sub><i>t</i>-1</sub>	-0.77***	(0.04)	-0.80***	(0.04)
<i>Long-Run Coefficients</i>				
Top 1% Income Share <sub><i>t</i>-1</sub>	0.89***	(0.13)	0.93***	(0.15)
Unemployment Rate <sub><i>t</i>-1</sub>	0.60***	(0.14)	0.55**	(0.18)
Poverty Rate <sub><i>t</i>-1</sub>			0.36*	(0.14)
Policy Liberalism <sub><i>t</i>-1</sub>	3.74+	(2.05)	4.32*	(2.14)
Median Income <sub><i>t</i>-1</sub>	-0.15**	(0.06)	-0.06	(0.08)
Percent White <sub><i>t</i>-1</sub>	1.69	(1.07)	1.60	(1.24)
<i>Short-Run Coefficients</i>				
$\Delta$ Top 1% Income Share	0.59***	(0.09)	0.60***	(0.11)
$\Delta$ Unemployment Rate	0.34*	(0.14)	0.27	(0.19)
$\Delta$ Poverty Rate			0.22*	(0.09)
$\Delta$ Policy Liberalism	2.88+	(1.60)	2.68	(1.72)
$\Delta$ Median Income	-0.07+	(0.05)	-0.03	(0.06)
$\Delta$ Percent White	0.58	(0.97)	0.98	(1.12)
Constant	-86.80	(87.57)	-84.53	(102.82)
N	1200		1125	
Wald Chi <sup>2</sup>	545.95		455.70	

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: Entries are mean-group estimator coefficients with standard errors in parentheses. Each model specification includes a time trend—these estimates are not included in the table. Models accounting for state poverty rates have fewer observations since stationarity tests indicated that three state series for this variable were stationary. To ensure appropriate model specification, state panels found to be stationary were not included in the estimation.

Table 2: The Effect of State Income Inequality on Public Perceptions of Growing Inequality, Top 10% Income Share

	$\Delta$ Perceptions of Growing Inequality			
	(1)		(2)	
	<i>b</i>	( <i>se</i> )	<i>b</i>	( <i>se</i> )
<i>Error Correction Rate</i>				
Perceived Inequality <sub><i>t</i>-1</sub>	-0.76***	(0.04)	-0.79***	(0.04)
<i>Long-Run Coefficients</i>				
Top 10% Income Share <sub><i>t</i>-1</sub>	0.74***	(0.13)	0.75***	(0.13)
Unemployment Rate <sub><i>t</i>-1</sub>	0.33**	(0.12)	0.25*	(0.13)
Poverty Rate <sub><i>t</i>-1</sub>			0.45***	(0.13)
Policy Liberalism <sub><i>t</i>-1</sub>	3.70+	(2.21)	4.21+	(2.28)
Median Income <sub><i>t</i>-1</sub>	-0.12*	(0.06)	-0.01	(0.08)
Percent White <sub><i>t</i>-1</sub>	2.18+	(1.12)	1.92	(1.22)
<i>Short-Run Coefficients</i>				
$\Delta$ Top 10% Income Share	0.46***	(0.08)	0.50***	(0.10)
$\Delta$ Unemployment Rate	0.13	(0.11)	0.09	(0.14)
$\Delta$ Poverty Rate			0.30***	(0.09)
$\Delta$ Policy Liberalism	3.58+	(1.94)	3.53+	(2.00)
$\Delta$ Median Income	-0.07	(0.05)	0.01	(0.06)
$\Delta$ Percent White	1.41	(1.10)	1.66	(1.20)
Constant	-145.44	(92.96)	-132.25	(101.55)
N	1200		1125	
Wald Chi <sup>2</sup>	623.36		605.32	

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: Entries are mean-group estimator coefficients with standard errors in parentheses. Each model specification includes a time trend—these estimates are not included in the table. Models accounting for state poverty rates have fewer observations since stationarity tests indicated that three state series for this variable were stationary. To ensure appropriate model specification, state panels found to be stationary were not included in the estimation.

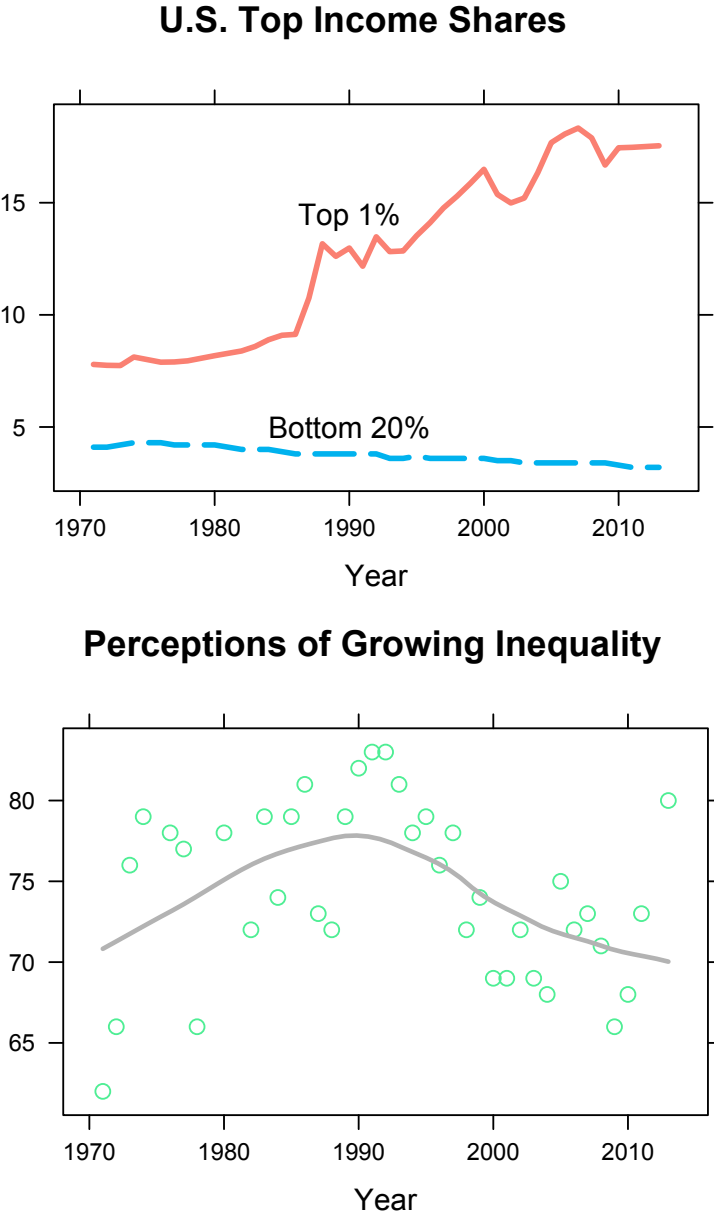
Table 3: The Effect of State Income Inequality on Public Perceptions of Growing Inequality, Gini Coefficient

	$\Delta$ Perceptions of Growing Inequality			
	(1)		(2)	
	<i>b</i>	( <i>se</i> )	<i>b</i>	( <i>se</i> )
<i>Error Correction Rate</i>				
Perceived Inequality <sub><i>t</i>-1</sub>	-0.81***	(0.04)	-0.86***	(0.05)
<i>Long-Run Coefficients</i>				
Gini Coefficient <sub><i>t</i>-1</sub>	0.69***	(0.10)	0.72***	(0.10)
Unemployment Rate <sub><i>t</i>-1</sub>	0.26*	(0.13)	0.26	(0.16)
Poverty Rate <sub><i>t</i>-1</sub>			0.20+	(0.11)
Policy Liberalism <sub><i>t</i>-1</sub>	1.12	(1.81)	1.64	(1.96)
Median Income <sub><i>t</i>-1</sub>	-0.05	(0.06)	-0.02	(0.07)
Percent White <sub><i>t</i>-1</sub>	1.05	(0.96)	0.69	(1.07)
<i>Short-Run Coefficients</i>				
$\Delta$ Gini Coefficient	0.44***	(0.08)	0.45***	(0.08)
$\Delta$ Unemployment Rate	-0.29**	(0.11)	-0.34**	(0.13)
$\Delta$ Poverty Rate			0.15+	(0.09)
$\Delta$ Policy Liberalism	1.83	(1.43)	1.73	(1.58)
$\Delta$ Median Income	-0.03	(0.05)	-0.01	(0.06)
$\Delta$ Percent White	0.61	(1.13)	0.91	(1.21)
Constant	-55.28	(78.78)	-25.77	(88.80)
N	1200		1125	
Wald Chi <sup>2</sup>	583.22		436.75	

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note: Entries are mean-group estimator coefficients with standard errors in parentheses. Each model specification includes a time trend—these estimates are not included in the table. Models accounting for state poverty rates have fewer observations since stationarity tests indicated that three state series for this variable were stationary. To ensure appropriate model specification, state panels found to be stationary were not included in the estimation.

Figure 1: U.S. Income Inequality and Public Perceptions of Growing Inequality



Note: Income share data were retrieved from the The World Wealth and Income Database (<http://www.wid.world>) and the U.S. Census Bureau (<http://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>). Perceptions of growing inequality are measured using the percentage of survey respondents agreeing that “the rich are getting richer and the poor are getting poorer.” This question is regularly asked by the Harris Poll, and the data were collected from various Harris Poll reports available at <http://www.theharrispoll.com>.

Figure 2: Changes in the Top 10% Income Share in Four States, 1987-2012

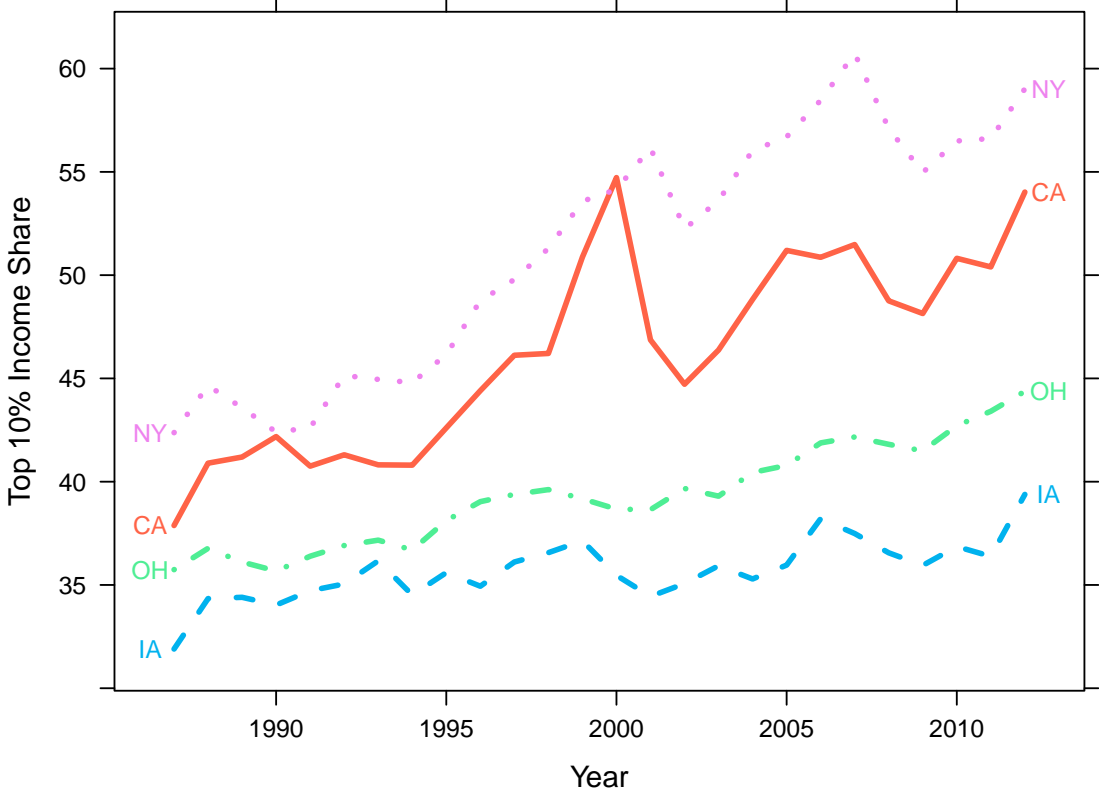




Figure 3: Trends in State Perceptions of Growing Inequality, 1987-2012

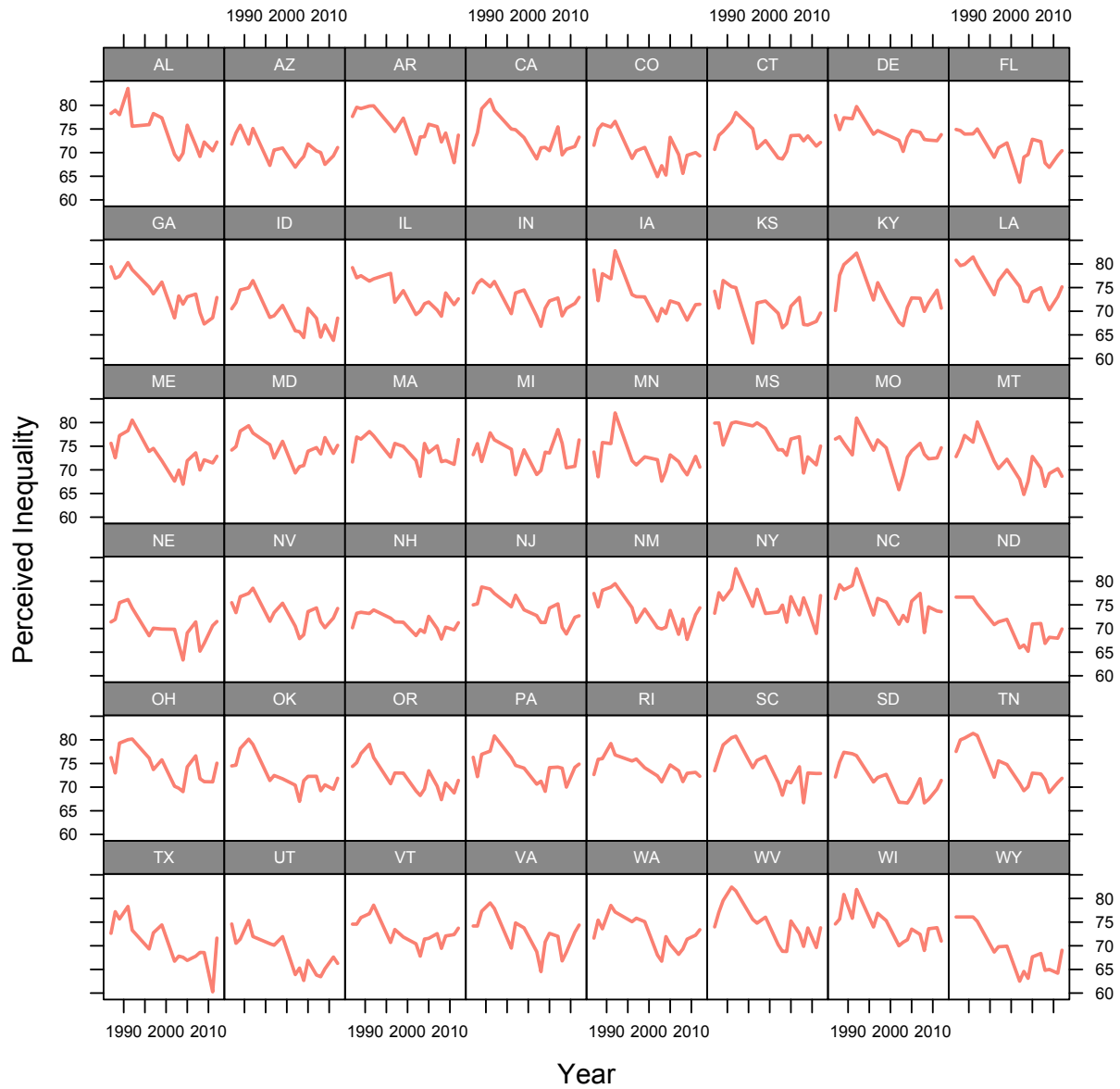


Figure 4: Changes in Perceptions of Growing Inequality and Top 10% Income Share in Eight States, 1987-2012

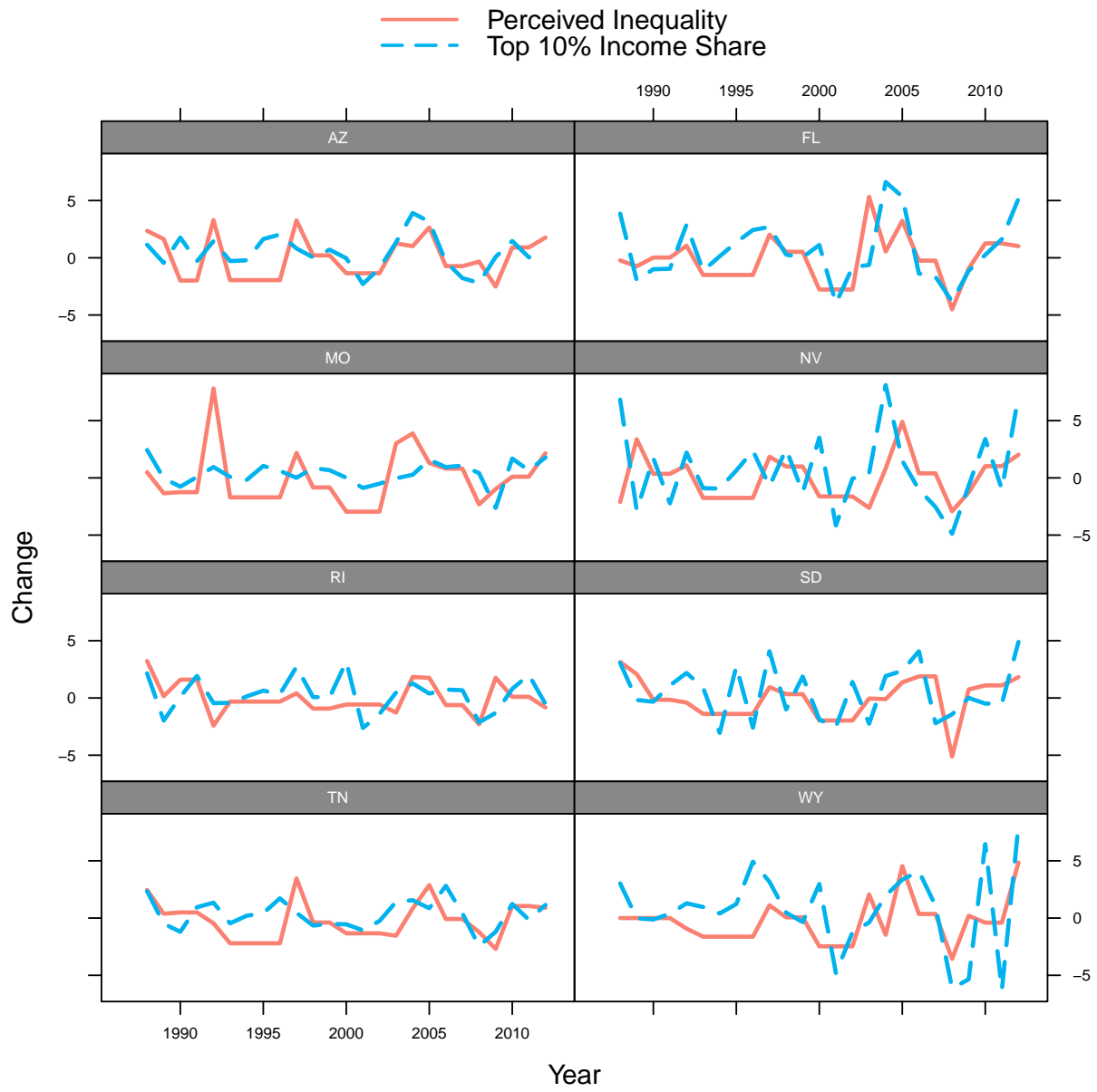
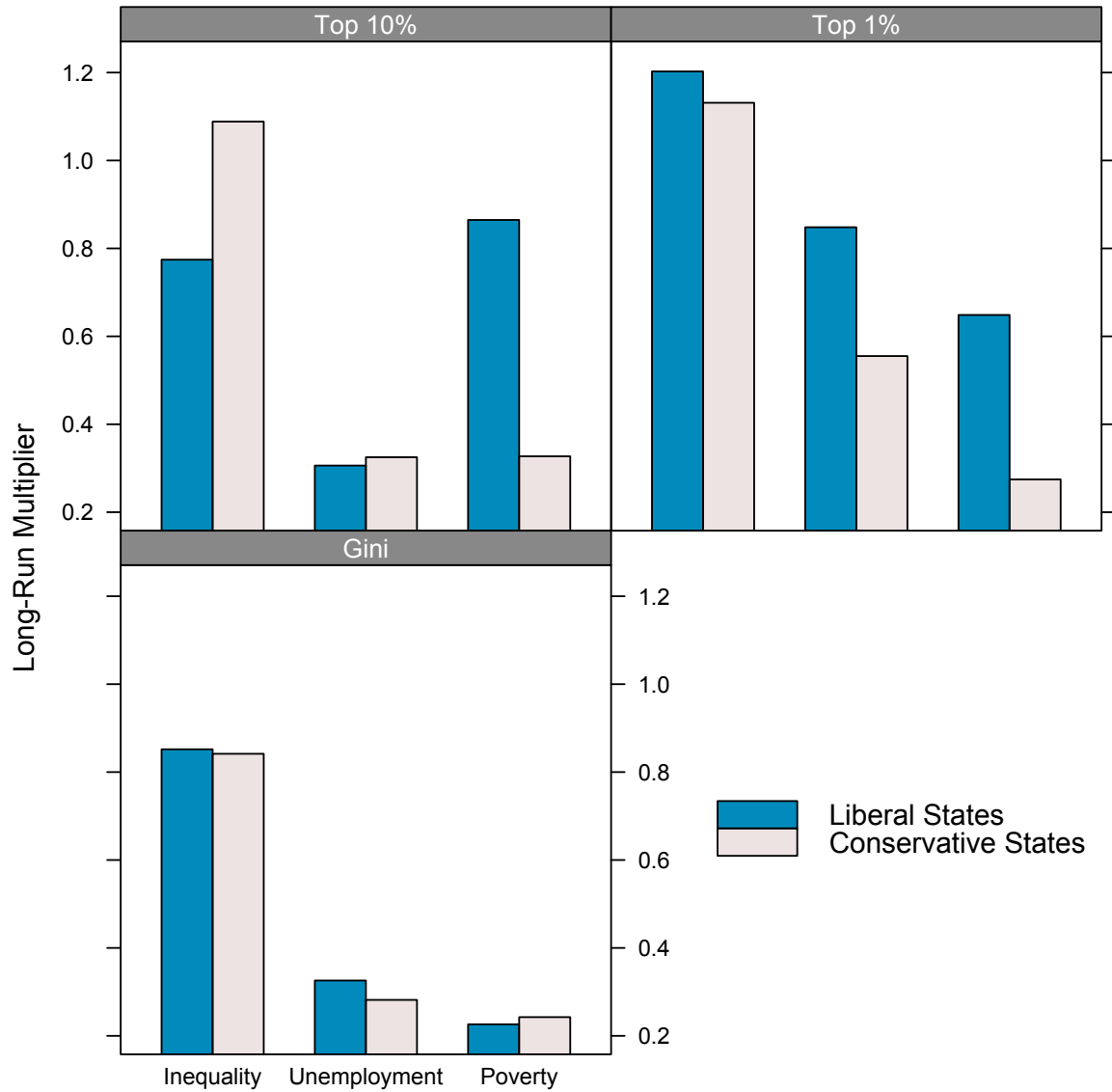




Figure 6: The Effect of Income Inequality on Public Perceptions of Growing Inequality for Liberal and Conservative States



Note: Long-run multiplier estimates are based on the model results presented in Tables A.1, A.2, and A.3 of the appendix.