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Nationally poor, locally rich: Income and local context in the 2016 presidential election

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ABSTRACT

When social scientists examine relationships between income and voting decisions, their measures implicitly compare people to others in the national economic distribution. Yet an absolute income level (e.g., \$57,617 per year, the 2016 national median) does not have the same meaning in Clay County, Georgia, where the 2016 median income was \$22,100, as it does in Old Greenwich, Connecticut, where the median income was \$224,000. We address this limitation by incorporating a measure of one's place in her ZIP code's income distribution. We apply this approach to the question of the relationship between income and whites' voting decisions in the 2016 presidential election, and test for generalizability in elections since 2000. The results show that Trump's support was concentrated among nationally poor whites but also among locally affluent whites, complicating claims about the role of income in that election. This pattern suggests that social scientists would do well to conceive of income in relative terms: relative to one's neighbors.

Social scientists often investigate income divisions in voting behavior in order to understand the importance of income in American politics (e.g., Bartels, 2013; McCarty et al., 2006; Stonecash, 2000). McCall and Manza (2010) describe what they call a "class thesis" as follows: "Citizens will think differently about many social political issues depending on where they sit in the stratification order."¹

But *which* stratification order? Researchers examining the relationship between citizens' income differences and vote choice disagree in many respects, but most are unified in their use of a measure of income that implicitly compares survey respondents to others in the national income distribution. This comparison is natural, and may be based on a perspective holding that voters ought to make national political decisions based on national considerations. But assessing one's place in an income distribution may be different than learning about other national issues because economic conditions such as wages, prices for comparable standards of living, and poverty rates vary spatially. A person with a given level of income may experience that income very differently depending on their geographical location, changing the relationship between income and voting behavior. Pioneering research by Gelman et al. (2007) is suggestive in this regard, finding that the relationship between income and voting behavior varies across states (see also Feller et al., 2012).

In the following section, we present our approach, which incorporates information about an individual's place in a local

stratification order based on their ZIP code, by illustrating how income distributions and costs of living vary across geographical locations and by explaining why that may matter for vote choice. We then apply this approach to the behavior of white voters in elections since 2000 using data from the waves of the Cooperative Congressional Election Study (Ansolabehere and Schaffner, 2008–2010) and National Annenberg Election Survey (Annenberg Center for Public Policy, 2000–2004), with a focus on the 2016 presidential election. We find that relationships between income and vote choice differ if income is considered relative to a local distribution or relative to a national distribution. The results contribute to ongoing debates about the role of income in whites' support for Donald Trump, and also the role of income in whites' voting decisions more generally. As discussed in the concluding section, the findings also have implications for research on the relationship between income and a wide range of variables of interest to scholars of public opinion and political behavior.

1. Local income distributions and vote choice

Objective as well as subjective considerations suggest that local income distributions are relevant to economic circumstances. An individual's place in their local income distribution may be particularly crucial because some very important elements of social identity and material comfort, from home size to access to highly-rated education

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¹ Following Prandy (2000), we understand a stratification order as "a set of processes and relationships involved in the distribution of advantage and disadvantage." This is akin to a hierarchy in any dimension or resource. In this paper, we focus on income stratification orders.

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for children, are structured by local economic positionality rather than absolute resources (Frank, 2007).

Americans may gather information about inequality and their own position in the income distribution from local conditions, such as their wage relative to their neighbor's, or relative to the cost of living in their area. Indeed, research suggests that assessments of inequality are based on local levels of inequality (Xu and Garand, 2010; Minkoff and Jeffrey, 2019; Newman et al., 2018; Newman et al., 2015a,b; Mayer, 1986). Psychologists have found that people tend to use local conditions as a heuristic for judging inequality, often leading to misperceptions about the actual distribution of income (Cruces et al., 2013; Newman et al., 2015). In essence, these findings suggest that when Americans are posed the question "how are economic conditions?," they actually respond as if the question were "How are economic conditions around you?" and may use a spatially limited reference group in assessing the income distribution.

But this only matters if local contexts have significant variation from each other. While the United States census estimated the national median household income to be \$57,617 per year in 2016,² this figure varies widely across local contexts and the same amount of income or wealth may have a very different practical meaning in different areas (Reardon and Bischoff, 2011). For instance, the prices of goods vary significantly across contexts in the United States. Purchasing power figures estimated by the Bureau of Labor Statistics show that a dollar is worth about 20 percent more in a place like Danville, IL, or Jefferson City, MO, than in the average American metropolitan area; in the New York City metro area, it is worth about 20 percent less than average.³ Particularly important goods such as housing are especially prone to these spatial differences: while the median home value in Manhattan is more than \$900,000 and more than \$1,000,000 in San Francisco, the median home value is below \$100,000 in about one-third of American counties, and such prices can also vary widely within metro areas, counties, and even the same city.⁴ Because of these significant differences in purchasing power and the cost of living, a person near the middle of the national income distribution may be comfortably affluent in a place with a low cost of living but face tighter economic circumstances in a place with a high cost of living (Albouy, 2009; Handbury, 2013; Basher and Josep Lluís Carrion-i-Silvestre, 2009).

Fig. 1 presents the divergence in median household income across U.S. ZIP codes, low-level aggregations of about 30,000 people that display median incomes ranging from about \$20,000 to over \$200,000. There is significant variation at both small and large geographic ranges. In the map subfigures, darker shades signify areas with higher median household incomes. At a broad scale, the map of the entire U.S. shows that higher income areas tend to be concentrated in metropolitan areas, while many rural areas have median incomes of less than half the national median.

There are many people in the U.S. who live several hours' drive from an area where the local income distribution resembles the national income distribution. Many others live in areas where the local income distribution varies significantly within a few miles, but daily experiences with different income groups are likely limited for many people by metropolitan residential segregation patterns.

Zooming in to one such area as an illustration, the map of Boston at right shows substantial variation within that metropolitan area, with the highest-income areas concentrated in the suburbs. Other metros have similar patterns, with high and low-income areas within

commuting distance of each other. Each of these kinds of contexts may provide different kinds of information about social stratification to their individual inhabitants.

It is not only that median incomes differ across local areas in the United States; income distributions do as well, as shown in Fig. 2. The subfigure at left shows the distribution of household income in four illustrative areas: the entire United States; a very affluent suburban area that includes Greenwich, CT (but also part of less affluent Stamford); a low-income urban area in eastern Brooklyn; and a low-income rural area in southwestern Georgia (including part of Clay County), illustrating some of the distributions behind the contrasts depicted in Fig. 1.

Each curve represents the distribution of household incomes in each of these areas in 2010, and the matching vertical line indicates the median household income.⁵ Not only are the median household incomes of these areas quite different (the medians in poor areas are about half the national median, while the rich area is about twice the national), but they have very differently shaped distributions. Each of the curves is skewed right, with a peak at the left and longer right-tail. Each small area shows a different local context, however. The line for Greenwich is much flatter, indicating that there are many households at all income levels up to about \$175,000. The Clay County distribution is much narrower; while the median of \$27,000 is only a bit more than half the national (sample) median of \$47,500, the modal household is still only about half of that, and only about one in four households is above the national median. Eastern Brooklyn is similar to Clay County, but it is a bit flatter, with about ten percent more affluent households.

These patterns of income, especially those with a distinctive central tendency, narrow dispersion, and physical isolation (such as Clay County), may lead respondents to have a very different picture of the overall income distribution. Differences in the cost of living may further provide citizens with very different lived experiences depending on where they fall in the specific local income distribution, even at the same level of absolute income.

Finally, it may be especially important to consider the importance of local income contexts to voting decisions given recent increases in local income inequality. While recent research has focused on increases in income inequality at the national level in the last few decades, the right-hand panel in Fig. 2 shows that areas of the country have diverged in their fortunes as well, generating significant differences in Americans' income contexts (Galbraith and Hale, 2006).

As the transition to a knowledge-based service economy has led to a "Great Divergence" of fortunes for different areas, income segregation has also increased over the past four decades along with overall income inequality (Moretti, 2013; Reardon and Bischoff, 2016). This pattern is evident from the density plot of ZIP-code-level real median household incomes presented in the right-hand panel of Fig. 2. The figure presents a wide dispersion of local income environments, with large numbers of ZIP codes well above and below the central peak. While the national median household income in 2016 was about \$57,000, the median ZIP-code level median household income (ie, the average of averages) was a bit lower, about \$50,300. The standard deviation of this distribution is \$23,085, suggesting that the distributions in the lefthand panel of Fig. 2 are not particularly exceptional. Furthermore, the distribution flattened

² Illustrative median household income estimates for particular jurisdictions drawn from www.censusreporter.org which reports 2016 ACS 1-year samples unless otherwise noted.

³ See Bureau of Labor Statistics report and associated data from (Cover, 2016). Accessed 15 May 2019.

⁴ See 2017 American Community Survey, Median Home Value, variable B25077.

⁵ This figure is based on data from IPUMS-USA 1-percent sample from the 2010 Decennial Census. The small areas are public use microdata areas (PUMAs). Because we use ZIP codes as our small-area aggregation in other sections of the paper, we would prefer to use ZIP codes here. Unfortunately, individual-level microdata at ZIP code and ZIP Code tabulation areas are not available, but this figure illustrates how the income distributions of small tabulation areas can be quite different; similar differences would likely be observed across ZIP codes. For this figure, household income is estimated by summing the personal income of all household members. Negative total household incomes were coded to zero and household incomes greater than \$250,000 were recoded to \$250,000 for easier visual clarity. See Appendix A for details.

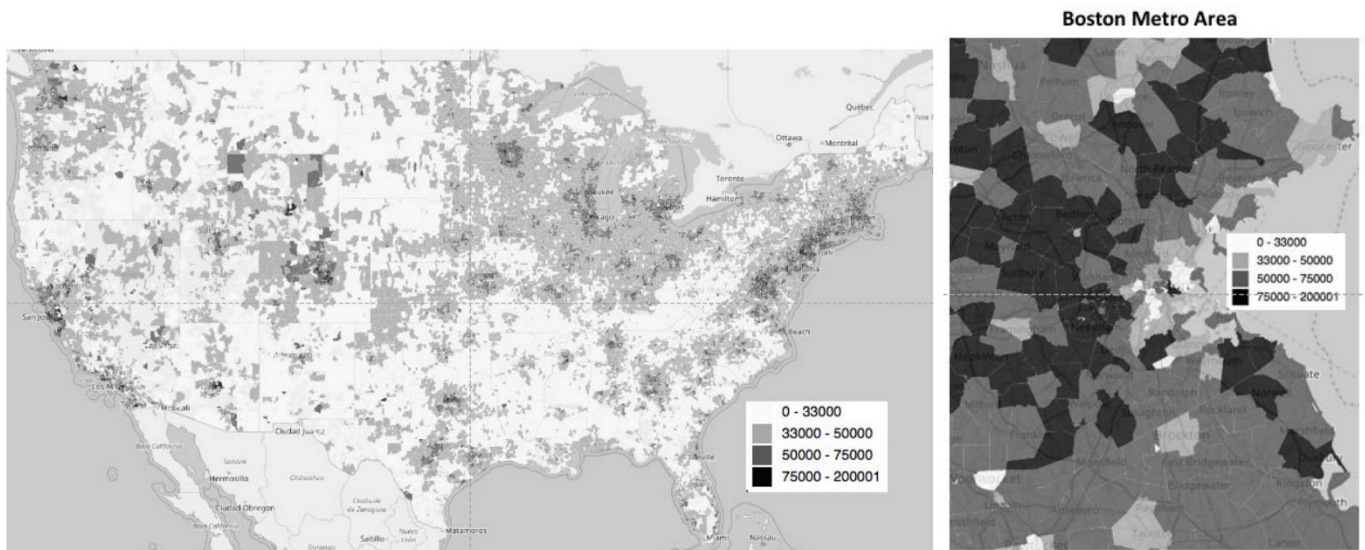


Fig. 1. ZIP-code-level variation in household median income across the nation (Left panel) and within the Boston metro area (Right panel). Darker shades indicate higher local median income. *Source: U.S. Census.*

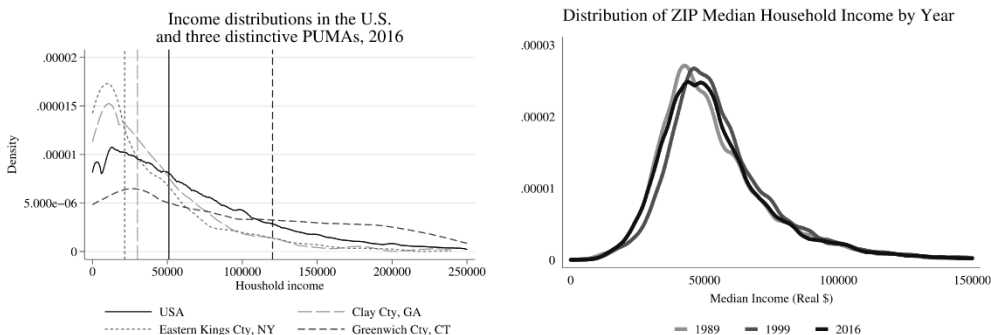


Fig. 2. At left, household income distributions in PUMAs in Clay County (GA), Kings County (NY), the entire U.S., and Fairfield County (CT). Vertical lines indicate the median household incomes of each geography; Clay, Kings, USA, and Fairfield from right to left. At right, density curves depicting over-time changes in the distribution of ZIP code-level real median household incomes. Darker lines are more recent Census years. Lower peaks indicate greater dispersion. *Source: U.S. Census.*

over time from 1989 to 2016, indicating that inequality across ZIP codes has been increasing. This pattern departs from the pattern uncovered by research at the state level, which suggests that income inequality across states has actually been decreasing in recent years (Gelman et al., 2010).

In sum, small areas are quite different from each other in terms of income, and more different than they used to be; therefore, understanding how such differences between localities affects politics may be increasingly important. These differences and divergences in local fortunes mean that an individual's place in the local income distribution is (increasingly) likely to be different from her place in the national income distribution.

People assess their own economic and social positions in part by comparing themselves to others—this insight is true for all manner of reference groups (Merton, 1968)—but it is difficult to assess the national income distribution and identify one's place in it in order to inform a political choice. Many people may turn to local information to learn about inequality. In fact, studies find substantial inaccuracy in citizens' perceptions of national economic inequality but good awareness of local inequality contexts (Newman et al., 2018). Further, these (mis)perceptions of inequality are associated with voting behavior (Hauser and Norton, 2017; Johnston and Newman, 2016).

Foundational accounts of political behavior suggest that economic position influences the process by which voters choose candidates (Downs, 1957; Meltzer and Richard, 1981; Romer, 1975). Indeed, some research has uncovered evidence of important income differences in voting patterns (Campbell et al., 1960; Bartels, 2005). In our view, the

importance of income depends on voters' local economic context. Indeed, there is substantial evidence that suggests that local economic contexts influence public opinion and political behavior. Tingsten (1937) finds that in the early twentieth century, class-based voting in Sweden was more prevalent in areas with high proportions of working-class residents. Similarly, in mid-twentieth century Britain the Labour Party attracted more support in neighborhoods where the working class was concentrated (Butler and Stokes, 1969). In the United States, a panoply of research findings demonstrate the importance of local economic context to public opinion (e.g., Hill and Leighley, 1992; Rogers, 2014; Newman, 2015; Gelman et al., 2010; Franko, 2016; Newman and Hayes, 2019; Newman et al., 2015b; Johnston and Newman, 2016).

Why, then, does previous research on vote choice so often implicitly compare people to others in the national distribution rather than the local distribution? Hopkins (2012) notes that part of the reason is that national benchmarks are “empirically tractable with existing data.”⁶ We now describe how we merge a large survey dataset with Census data in order to render local economic context empirically tractable in the case of the 2016 presidential election. We then compare these results to previous presidential elections since 2000 to show that this pattern was present for past nominees as well.

⁶ Hopkins's focus is slightly different from ours, in that he seeks to explain not voting behavior but perceptions of economic performance. He also cites additional reasons in support of the use of national economic benchmarks, including that previous research has shown these to be relevant to public opinion.

2. Data and methods: the white vote in 2016

The analyses presented here primarily employ Cooperative Campaign Election Studies (CCES) data from 2016. Respondents were asked questions about their income (in dollars) and about many political subjects, including their vote choice in 2016.⁷

In previous elections, higher levels of income have been associated with white support for Republican candidates (Bartels, 2008; Stonecash, 2000), especially in recent decades. However, press coverage of the 2016 presidential election suggested that Trump may have been more appealing to low-income whites than previous Republican candidates. Scholarly analyses of the Republican primaries have been skeptical of this conclusion. Manza and Crowley (2017), for example, find that Republican voters in the 2016 primary were predominantly affluent, such that most of Trump's support came from well-off white voters (see also Carnes and Lupu, 2017). Yet Manza and Crowley (2017) also find that the share of Trump's supporters who were low- or middle-income was greater than the share of low- and middle-income supporters of other Republican primary candidates.

Analyses of the 2016 general election have not yielded clear estimates of the relationship between income and whites' voting decisions. Many of these analyses do not include income as a variable in their models (Frasure-Yokley and Lorrie, 2018; Grossmann and Thaler, 2018; Morgan and Lee, 2017; Ratliff, 2017; Setzler and Yanus, 2018). Those analyses that do include income invariably include variables in the models that may be post-treatment to income, such as partisanship (Hooghe and Ruth, 2018; Schaffner et al., 2018).⁸ We present analyses below that both include and exclude these covariates.

We restrict our analysis to white respondents for several reasons. First, we wish to build directly on previous research that has examined the relationship between income and vote choice by focusing on white voters alone (Bartels, 2006; Brewer and Stonecash, 2001). Second, the relationship between income and political preferences is likely to be different for whites than for other racial or ethnic groups (Dawson, 1994). Third, it is likely that samples of non-whites are of relatively low-quality; for example, the CCES is administered only in English, effectively excluding a large and distinctive group of Latino respondents (Barreto et al., 2017). Finally, focusing on the role of income among white respondents will allow us to speak directly to the public conversation on the 2016 election and white voting behavior.

Our first independent variable of interest is income, measured in absolute dollar terms by the CCES (for the national measure). Of course, there are many possible conceptualizations of class (McCall and Manza, 2010), and we discuss possible ways to adapt our approach to these alternatives in the concluding section. For now, we note that income is a fixture in existing research on the topic, and for good reason. As Brewer and Stonecash (2001) note, income "reflects the resources people have at their disposal, which significantly affects their access to opportunities and quality of life." Furthermore, income is directly related to policy interests (e.g., taxation rates).

Our second independent variable of interest is an individual's place in her local income distribution, measured at the level of ZIP code. Using census data, we estimate each respondent's local income percentile based on their household's reported income (which we coded at the center of the CCES bin) and the income of households in their ZIP code. We make these estimates by summing the percentage of households in the respondent's ZIP code with lower household incomes than the respondent. For instance, if a respondent indicated that they were in

the CCES range of \$20,000-\$29,999, we code them as having an estimated household income of \$25,000, and their income percentile is equal to the summed proportion of residents of their ZIP code in the Census categories of "Less than \$10,000", "\$10,000-\$15,000", and "\$15,000-\$25,000."⁹ For some analyses in this paper, we further recode these raw estimates of income position into 4 categories where it makes interpretation easier or to allow for non-linearities. In the main analyses, however, we use the 16-category CCES variable and a local income position estimate that ranges continuously from 0 to 1, approximating a percentile.

We analyze local income at the ZIP code level because it is the smallest level of geographic aggregation available in the CCES, and small areas are most likely to differ from the national income distribution. They are also likely to provide a more personal and immediate source of information upon which individuals might base their judgments about their place in the stratification order. Although ZIP codes are designed to increase postal efficiency rather than to reflect a meaningful social affinity or community, they are typically quite regular in shape, have roughly the same number of persons across the country, and serve well as an informal local context.

Given the modifiable areal unit problem (Fotheringham and Wong, 1991), we also conduct the analyses in this manuscript with other available units of aggregation in case these results are different at different geographical levels. These alternative specifications of "local" include place/city (placing respondents in the city that includes their ZIP code's centroid), county, metropolitan area, and a survey-based "community" consisting of other CCES respondents within 50 cardinal miles of the respondent (or the 50 closest respondents, if there were fewer than 50 other respondents within 50 miles). In general, the results do not differ substantially, though because smaller units of aggregation deviate more from the national income distribution, the pattern of results is sharper at smaller levels like ZIP codes (See Appendix J for these results using alternative specifications).

Our primary dependent variable is vote in the 2016 presidential election. Because the popular narrative surrounding the 2016 presidential election discusses the extent to which Trump's support came from low-income whites, we code the dependent variable as follows: "1" if the respondent voted for Trump and "0" if the respondent cast a vote for Clinton. The results do not meaningfully change if respondents casting votes for other candidates are coded as 0, or if only voters who could be matched to government records using the CCES-Catalist validation procedure are included (See Appendix E and Appendix J).

In additional models we also include other CCES measures of factors which may affect the estimated relationship between income position and vote choice, either as alternative-explanation covariates or because these relationships may vary by subgroup. Summary statistics of these other variables as recoded for our analyses are included in Appendix B.

The analyses presented here employ the CCES survey weights, although one should bear in mind that the CCES was designed to be representative at the national level, not at the zip code level. The results presented here do not meaningfully change if weights are not used.

In the final analysis, we replicate the core analysis from the 2016 CCES with two previous waves of that survey and two waves of the National Annenberg Election Survey. Summary statistics for the variables used from each of those surveys are provided in Appendix B.

3. Analysis

Fig. 3 shows the national distribution of family income, the standard measure of income in the literature, among white CCES respondents. As

⁷ For full question wordings and details on the CCES, see Appendix A and Ansolabehere and Schaffner (2008–2010).

⁸ While these methodological decisions are perfectly appropriate for the purposes of existing scholarship—the authors are interested in controlling for income, not describing its relationship with vote choice—for our purposes the approaches of existing scholarship do not get us very far.

⁹ The Census breaks respondents into slightly different income categories than the CCES, so small judgments were made to approximate the percentile of each respondent in their ZIP code. For precise details of this coding process see replication files.

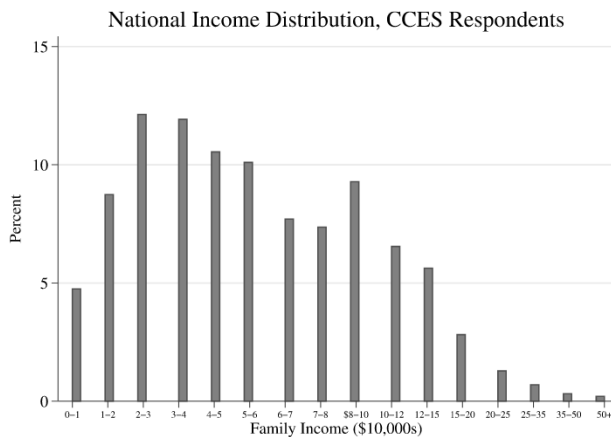


Fig. 3. Distribution of respondents' national income Source: 2016 CCES.

one might expect in a national sample, there is substantial variation in the figure; more important for our purposes is that this standard measure masks variation in many Americans' local income position.

Fig. 4 depicts the joint distribution of our national and local income measures, plotting the distribution of the local income percentiles for respondents in each decile of national income. If all respondents' national and local income positions were the same, this plot would look like a diagonally ascending line, with no overlap across the distributions at each place on the x-axis.

In fact, many respondents' local and national income positions differ, especially near the middle of the income distribution. For instance, CCES respondents in the \$50,000–60,000 bin, who are close to the national median income, range from the 0th to 93rd percentile in their ZIP codes.¹⁰ To the extent that such nationally-average earners draw information about their place in the income distribution by looking at their neighbors, they would come to vastly different conclusions.

We now examine the relationships between these two measures of income and vote choice in the 2016 presidential election, with special attention to (and leverage derived from) the cases in which national and local income position differ for a respondent. First, Fig. 5 presents the bivariate relationship between national income and voting for Trump among white respondents. This provides a point of departure by examining what conclusions one might draw about income and white voting in 2016 using the standard measure. The figure is consistent with the claim that lower-income whites supported Trump at higher levels than higher-income whites did. White respondents in the lowest income category were about 15 percent more likely to support Trump than those in the highest. The predicted probability for all income groups below \$250,000 is greater than fifty percent.¹¹

This bivariate relationship between national income position and vote choice may be masking important variation, given the observation from Fig. 4 that a respondent may have very different locally lived experiences even at a given level of national income. Were white individuals' local income positions associated with vote choice in 2016?

As a first cut, we tabulate the support for Trump across four groups

¹⁰ Sampling variation in the CCES and ACS likely account for the individual in the 0th income percentile in a very small, affluent ZIP code in coastal Rhode Island that the ACS estimates had no households with incomes smaller than \$60,000 in 2015.

¹¹ This relationship is characterized by mild non-linearity: it is flatter at the low end and steeper at the high end of the income distribution (though there are far fewer respondents in the top categories). Appendix 10 shows this bivariate relationship by regressing support for Trump on 16 indicators for each income category. The magnitude of the difference in predicted probability of support for Trump between high and low income white voters is similar to that in the linear model.

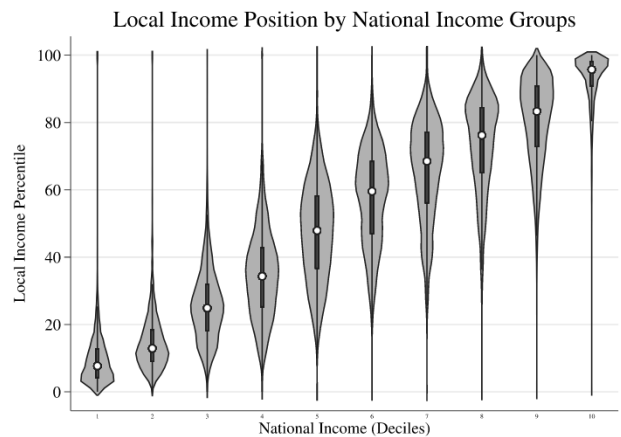


Fig. 4. Joint Distribution of National and Local Income. Each violin plot depicts the distribution of estimated local income percentile for respondents in each decile of the national income across the x-axis. Overlaps in these distributions indicate the frequency of individuals with local income positions that do not match their place in the national income distribution. Source: 2016 CCES, 2015 ACS.

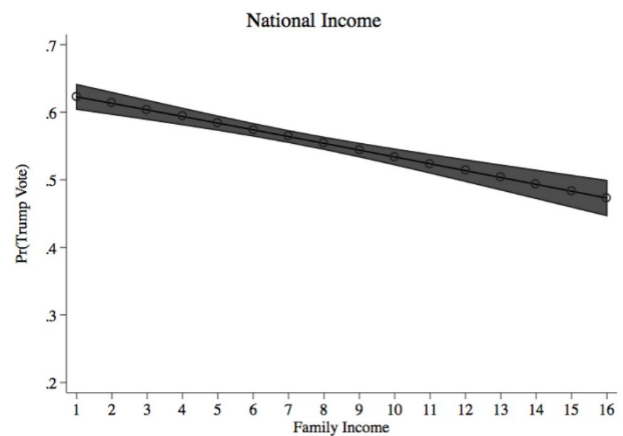


Fig. 5. Predicted Likelihood of Voting for Trump, based on bivariate probit regression of 2016 vote choice on CCES 16-category National Income Measure Source: 2016 CCES.

of white CCES respondents composed of those positioned above or below the national and local median household income, respectively. We explore this first because theory suggests median income is a particularly important point in the income distribution for informing vote choice. The results are presented in Table 1.

Most white respondents were both nationally and locally rich (or poor); their income positions relative to the median did not conflict across levels (we label them “doubly rich” (or doubly poor) for brevity's sake). However, about 16 percent of white respondents were on opposite sides of the local and national medians, either locally rich (but nationally poor) or locally poor (but nationally rich).

The 4.8 percent above the national median but below their area local median were the least likely to support Trump, at 50 percent. In contrast, the 11 percent of respondents who were nationally poor but locally rich were the group most likely to support Trump, at about 65.4 percent.¹² White voters for whom local and national income position differed were distinctive in their vote choices from those at the same

¹² These vote support percentages hold almost exactly when only vote-validated respondents are included, as well as when those at the high and low tails of the national income distribution are excluded.

Table 1
Support for Trump among whites from households with incomes above and below the national and local medians. Source: 2016 CCES.

Local Position		National Position	
		Below Median	Above Median
Above Median	% for Trump	65.4	56.2
	(% of Whites)	(11.0)	(46.0)
Below Median	% for Trump	58.3	50.0
	(% of Whites)	(38.0)	(4.8)

national position but for whom national and local income position did not cross-cut.

For the cross-pressured, local position is associated with Trump support—the locally rich were even stronger Trump supporters than the doubly rich, and the locally poor were even weaker in their Trump support than the doubly poor; they were evenly split between the candidates. Local income positions, not just national income, is associated with white voting behavior.

We proceed to examine the national-local differences using a multivariate regression model of support for Trump using regression models that include both the national and local income measures (both with and without other covariates). We present results of two models: one with only local and national income positions, and one with many other well-known predictors of vote choice, including partisan identification, political ideology, education, church attendance/religiosity, sex, and state indicators. The same basic relationship observed in Table 1 holds: local income position is positively associated with support for Trump in 2016, while national income position is (*ceteris paribus*) negatively associated with support for Trump.

Table 2 includes probit regression coefficients for the models. The key marginal predicted probabilities are plotted in Fig. 6. Interestingly, compared to Fig. 5, the estimated relationship between national income and vote choice is slightly stronger when both measures are included in the same model. The left-hand panel in Fig. 6 shows the predicted probabilities of support for Trump at different levels of national income, holding local income constant at the second quartile.¹³ The magnitude of this relationship is substantively large: the predicted probability of voting for Trump is about eighteen percentage points lower among whites in the highest national income quartile than among whites in the lowest national income quartile.

Next we turn to the relationship between local income position and white voting for Trump, holding national income constant. The right-hand panel of Fig. 6 shows the predicted probabilities of support for Trump at different levels of local income position, holding national income constant at the second quartile. Here we see, consistent with the analyses presented previously, that this relationship is actually *positive*—in the opposite direction from the relationship between national income and vote choice.¹⁴ The figure shows that the predicted probability of voting for Trump is higher for whites in the highest quartile of their local income distribution than for whites in the lowest quartile of their income distribution by about ten percentage points.

Of course, it is possible that any relationships between income and

¹³ The reason local income is held to this value is because it is here that there is maximum variation in national income among respondents who are actually in the dataset. Of respondents in the second quartile of their local income distribution, the distribution of national income is as follows: 651 are in the lowest quartile, 5656 are in the second quartile, 1013 are in the third quartile, and 50 are in the highest quartile.

¹⁴ Here too this decision is made in order to assess the relationship between local income position and vote choice at a value of national income for which local income position meaningfully varies of respondents in the second quartile of the national income distribution, the distribution of local income is as follows: 1572 are in the lowest quartile, 5656 are in the second quartile, 2318 are in the third quartile, and 44 are in the highest quartile.

Table 2
Probit coefficient estimates, support for Trump in 2016. Model 2 includes state indicators (not shown) Source: 2016 CCES, 2015 ACS.

	(1) DJT Vote	(2) DJT Vote
Family Income	-0.085*** (0.0074)	-0.047** (0.014)
Local Income Position (Percentile)	0.71*** (0.081)	0.41** (0.16)
Republican ID (7-cat)		0.51*** (0.011)
Ideology (7-cat)		0.40*** (0.015)
Male		0.18*** (0.035)
Born Again (2-cat)		0.30*** (0.046)
Freq. of church attendance (3-cat)		0.018 (0.011)
College degree		-0.32*** (0.036)
ZIP Population Density (quartiles)		-0.090*** (0.017)
Pseudo R ²	0.007	0.634
Observations	27968	26918

Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

voting decisions are attributable to some other confounding factor not included in the models in Table 2. Our primary purpose is to describe rather than explain these relationships; still, we note that the patterns presented above are present within many subgroups of white respondents, as seen in Fig. 7.

The plot shows the estimated marginal effects of a change from the 5th to 95th percentile of national and local income in a logit regression using Model 1 in Table 2, estimated for different subgroups of white voters. Both the negative relationship between national income and voting for Trump and the positive relationship between local income position and voting for Trump persist among: both whites with and without college degrees, both white men and white women, both whites in the South and whites outside the South, whites in areas with high percentages of black residents and whites in areas with low percentages of black residents, whites in areas with high income inequality and whites in areas with low income inequality, whites in both rich and poor states, and whites in rich and poor ZIP codes. For all subgroups, increased national income is associated with a *decrease* in Trump support, and for every subgroup except for the one-third of white respondents living in ZIP codes with the highest population densities, increased local income position is associated with an *increase* in Trump support.¹⁵

Finally, we examine the generalizability of this pattern. Our analysis was prompted by the observation that the historical relationship between party and income was apparently inverted in 2016, at least among whites: higher national income position was associated with support for the Democratic candidate.

A number of factors may help explain this seeming puzzle. The Republican candidate expressed a range of heterodox economic views during the campaign, including support for some redistributive programs, like Social Security and Medicare, that have long been associated with Democratic positions; similarly, Trump's positions on trade may have been interpreted as anti-business and therefore redistributive (though the actual distributive consequences of trade protectionism depend on details of implementation and design). While his positions were not *more* redistributive than Clinton's, it is possible that they may have made some high-income whites shift away from Republicans

¹⁵ Those living in the densest areas are almost all residents of central cities, an observation reflecting an aspect of the urban-rural divide (Ogorzalek, 2018; Rodden, 2018). As an alternative specification, we also estimate a regression model in which these variables are included as covariates (in Appendix G); here too the diverging relationships between national income, local income position, and white vote choice in 2016 remain. The estimates in this figure are based on the trivariate model in Model 1 in Fig. 2. A similar figure based on models with the covariates in Model 2 from that Table is presented in Appendix 14, with substantially similar results.

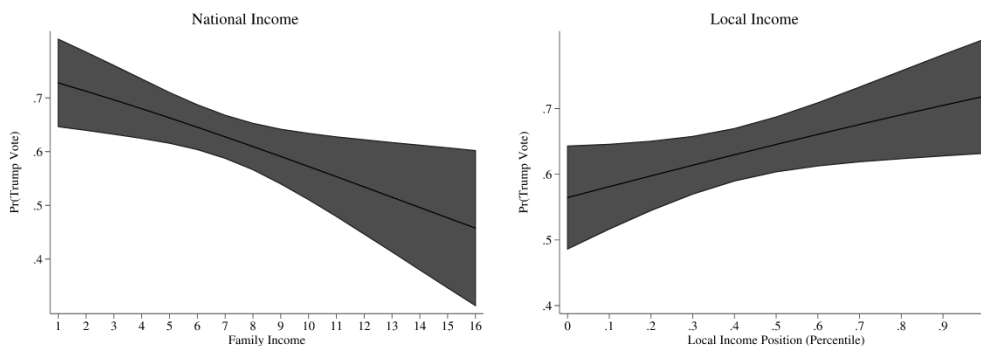


Fig. 6. Predicted Probability of Voting for Trump by National Income (Left) and Local Income (Right). Estimates based on Model 2 in Table 2. Source: 2016 CCES, 2015 ACS.

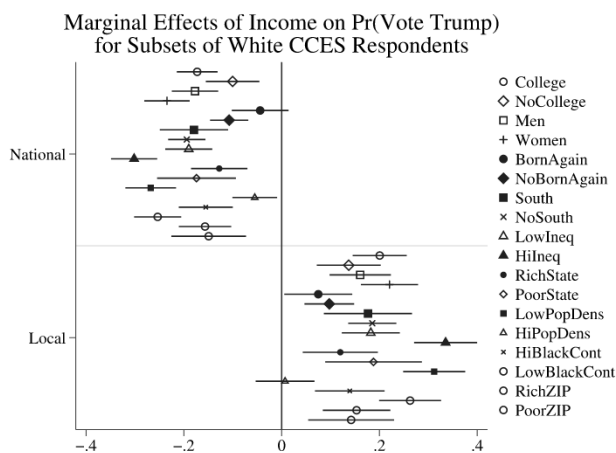


Fig. 7. Estimated Marginal Effects of National and Local Income Measures Across Subgroups of White Voters. Lines represent 95% confidence intervals. Estimates based on Model 1 from Table 2 run on subsets of white respondents indicated at right. See Appendix F for tabular presentation of this data. Source: 2016 CCES, 2015 ACS.

toward a more “establishment” candidate.

Does this pattern of strong support for Republicans among the locally rich hold for other contests, or do platform-specific factors explain this relationship? To examine this question, we estimated Model 2 from Table 2 on data from surveys going back to 2000. We used data from the 2012 and 2008 CCES, and from the 2004 and 2000 National Annenberg Elections Survey.¹⁶ In the models estimated, all of the income variables were rescaled onto a 0–1 interval for ease of comparison.

Fig. 8 shows the estimated independent marginal effects of these national and local income on support for Republican candidates for each year, as well as one in which all respondents across the years are pooled. The pattern holds up remarkably consistently: in every year but 2012, local income position is positively associated with support for the Republican candidate. The magnitude of the effect is quite consistent as well. National income position is negatively associated with support for the Republican candidate in three of the five years. The overall pattern also holds and is more precisely estimated in the pooled model (which also included year fixed effects).

¹⁶ Again, these models include covariates for party identification, ideology, sex, college degree, church attendance, born-again Christianity, and a set of state identifiers. We also gathered contemporaneous data on respondents' ZIP code income distributions from those years to construct the local income percentile variable; for years in which the census was not collected (2004 and 2008) we linearly interpolated this data based on 2000 and 2010.

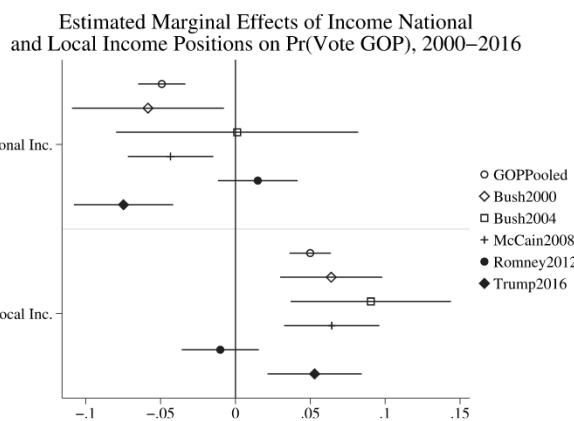


Fig. 8. Estimated Marginal Effects of National and Local Income Measures on Support for Republican Presidential Candidates Among White Voters, 2000–2016. Models include covariates from Model 2 in Table 2. Pooled model also includes year indicators. Lines represent 95% confidence intervals. Source: 2000 NAES, 2004 NAES, 2008 CCES, 2012 CCES, 2016 CCES, U.S. Census.

4. Conclusion

This study uses observational survey data from presidential elections since 2000 to examine the relationships between income and vote choice among white voters. Previous studies examining the relationship between income and vote choice do not account for how local variation in income distributions may affect that relationship. Prompted by an apparently new phenomenon in the 2016 election, when rich whites were relatively unlikely to support Trump (Reny et al., 2019), we find that local income position has a significant independent association with vote choice. While nationally rich whites are relatively unlikely to vote for Republican candidates, locally rich whites are relatively likely to. This relationship holds even when we look closely at particular subsets of the white electorate, and when we account for a range of other factors known to influence vote choice. The fact that local income matters for most previous elections also strengthens our conclusions.

Further research is required to examine the mechanisms by which this relationship might operate, including subjective assessments of local conditions and objective experiences based on cost of living.

We examine the relationship between income and a single dependent variable: white vote choice in presidential elections. Yet existing research establishes important relationships between income and a wide range of variables of interest to political scientists, including political participation (Schlozman et al., 2012), ideology (Dettrey and Campbell, 2013), support for ballot referenda (Franko et al., 2013), partisanship (Kenworthy et al., 2007) and policy positions (Bartels, 2016). To the extent that subjective perceptions of income based on context are likely to matter for these outcomes, incorporating individuals' placements in their local income distribution promises to

inform our understanding of the relationship between income and these standard fixtures in public opinion and political behavior research.

Finally, income represents only one conceptualization of social class. Our approach of considering one's position in a class distribution might productively be applied to other conceptualizations of class (ie, other stratification orders) as well. Does local income position influence subjective class identity as much as occupation, education, or absolute income? Does it matter if a blue-collar worker lives in a neighborhood dominated by white-collar residents? If a homeowner lives in an area primarily populated by renters? If a respondent has a large household, raising the cost of living? If a college-educated family lives in a neighborhood where most residents do not have a high school degree? It is possible that the political relevance of a wide variety of dimensions of social class, including patrimony (Lewis-Beck et al., 2011), occupation (Brady et al., 2009), economic risk (Rehm et al., 2012), individual-level economic changes over time (Margalit, 2013; Mutz, 2018), and class identity (Walsh et al., 2004) hinge on an individual's position in her local social class environment.

Declarations of interest

None.

Notes

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