**FROM *THE BRADY BUNCH* TO *GILMORE GIRLS*:
THE EFFECT OF HOUSEHOLD SIZE ON ECONOMIC VOTING***

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Abstract: This article examines how household structure affects evaluations of personal economic conditions. We argue that moderate or mid-range responses when individuals are asked about their personal financial situation are more likely in multi-person households than in one-person households. Using data from the American National Election Studies from 1966 to 2016, we find that personal financial experiences are a very good heuristic for the assessment of national economic conditions. More importantly, we show that personal economic experiences are endogenous to household size. The aggregation of personal economic evaluations within households reduces the variation across household members, and therefore it is harder for an individual to say that her personal financial situation is good or bad in multi-person households. The main implication of our analysis is that economic voting in advanced societies is expected to be stronger in one-person households and over time, given the downward trend in the average number of household members.

Keywords: economic voting; household size; personal finance experience; sociotropic voting; U.S. presidential elections.

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1. Introduction

The number of household members varies substantially across families, both within countries and over time. In 2019, for instance, 28.4 percent of American households were one-person, while the average household size has declined nearly everywhere in the last decades (United Nations 2017) and this downward trend is expected to continue (OECD 2011). In France, for example, the average household size fell from 3.1 persons per household in 1966 to 2.3 in 2011; in Kenya, from 5.3 in 1969 to 4.0 in 2014 (United Nations 2017); and in the United States, from 3.3 in 1960 to 2.5 in 2019, according to the U.S. Census Bureau. Family TV shows in the United States nicely illustrate this demographic change. In the late 1960s and early 1970s, *The Brady Bunch* was a popular sitcom following the day-to-day lives of a blended family of six children; in the 2000s, *Gilmore Girls* followed a single mother and her daughter.

This article examines whether household structure affects economic voting in United States presidential elections. We argue that household size (i.e., the number of persons who make common provision of food, shelter, and other essentials for living, according to the definition in United Nations 2017: 1) is highly relevant to shaping the influence of the economy on voting decisions. We begin by noting that self-reported retrospective evaluations of the national economy are the best economic predictor of individual-level votes (Lewis-Beck and Stegmaier 2019), and personal financial experience is the best heuristic for the assessment of national economic conditions (Duch, Palmer, and Anderson 2000).

We claim that personal economic experiences are endogenous to household size. Personal financial evaluations (i.e., individuals' opinions about their family's current financial conditions in comparison with those in the past) are to some extent an aggregation of household members' personal experiences. The more household members, the more variation in personal economic experiences within the household. The aggregation of individual financial evaluations in multi-person households will presumably cancel out the variation, thereby leaving more moderate or mid-range retrospective evaluations of personal economic conditions than in one-person households. As a result, the effect of sociotropic economic evaluations on the decision to vote for the incumbent president will decline the greater the household size. The implication of our analysis is that economic voting in advanced societies is expected to be stronger as time goes by, given the downward trend in the average number of household members. In sum, while a classical argument claims that aggregation

eliminates the “noise” contained in mass opinion (Page and Shapiro 1992), we argue that the aggregation of personal economic evaluations within households eliminates, or at least reduces, the variation across household members and therefore weakens economic voting. The argument is examined through an extensive analysis of economic perceptions in the Cumulative Data File of the American National Election Study across U.S. presidential elections from 1966 to 2016.

2. Arguments

A large body of research since the first analyses with individual-level data conducted by the Columbia school (Lazarsfeld, Berelson, and Gaudet 1944; Berelson, Lazarsfeld, and McPhee 1954) has convincingly shown that social influences, in particular the household context, affect political behaviors. As Glaser (1959) argued sixty years ago, “the most influential canvassers are the rest of the people in the voter’s family” (570).¹ The crucial role played by families is not surprising, given that household members are the most frequent discussion partners (Mutz 2006: 126; Bello and Rolfe 2014: 141). The consequence of political interaction within households is the convergence of attitudes and behaviors of family members. Couples, for instance, become more similar in their party preferences (Stoker and Jennings 2005; Verba, Schlozman, and Burns, 2005) and show similar levels of turnout (Verba, Schlozman, and Burns 2005). Interestingly, rather than being a demobilization mechanism, political disagreement within households is beneficial for encouraging debate and political participation, according to the experimental data provided by Foos and de Rooij (2017).

Our argument is that household structure shapes economic voting, in particular personal experience with economic problems, both among individuals in a given election and over time. Surprisingly, research on economic voting pays little to no attention to household and family composition.

In the considerable body of research about how the economy affects incumbent support, there are two emerging empirical consensuses. First, voters are more concerned with the economic well-being of the nation as a whole (“sociotropic voting”) and not simply with their personal economic situation (“pocketbook voting”) (Lewis-Beck and

¹ See Fieldhouse and Cutts (2012) or Sinclair, McConnell and Green (2012) for more recent observational and experimental evidence, respectively.

Stegmaier 2019).² Second, the causal chain connecting economic conditions and voting relies on two links: from the objective economy to voter perceptions, and from voter perceptions to the vote (Lewis-Beck and Paldam 2000: 114–115). Personal financial experience is the main driver of national economic evaluations (Niemi, Bremer, and Heel 1999: 181–182; Duch, Palmer, and Anderson 2000: 640; Tverdova, 2012: 149) and trumps other sources of subjective heterogeneity, such as information and media exposure, political attitudes, and socioeconomic characteristics.

We argue that personal financial experience varies depending on the number of household members. In one-person households a single personal financial situation is considered—for instance, if an individual is unemployed, she will have no trouble saying her economic situation is bad, while an individual with a high-paying job will have the opposite opinion. By definition, the aggregation within the household is equal to the individual's financial situation.

Yet in two- or three-person households, where the personal financial situation of the household members might vary, it is harder for an individual to say that her personal financial situation is good or bad: she is considering several varying economic conditions at the same time, and it is highly unlikely (or at least more unlikely than in one-person households) that all of them are positive or negative. As a result, in the aggregate within the household, individual perceptions will tend to offset one another, even if household members have different baseline levels of a given opinion due to the common information they share. The standard measure of personal finance experience is a survey question asking respondents to compare their current financial conditions and those of their family to their financial conditions from a year ago on a scale of “worse” to “better,” with “the same” being the mid-range response. We expect that mid-range responses when asked about the comparison of past and current financial conditions will be more likely in multi-person households than in one-person households.

It is plausible that a disastrous economy—such as some countries in the Great Recession—would elicit similar personal economic condition for all household members, but when an economy is relatively stable, as is more commonly the case in western democracies, varying personal financial situations within households is much more likely.

² Singer and Carlin (2013), however, show that egotropic voting is more prevalent at the lowest levels of development than in other contexts.

In sum, the restricted variation of economic opinion in multi-person households makes easier to obtain a strong individual-level association between the economy and the vote in one-person households, and a strong aggregate-level association in elections with more one-person households.

In line with Mutz (1992: 488–489), we hypothesize that household size directly affects personal financial evaluations and therefore may have an indirect effect on the probability of supporting the incumbent party. As can be seen in Figure 1, our argument has clear implications for economic voting in a given election and its empirical time trajectory, that is, both for cross-sectional and longitudinal estimates of economic voting. On the one hand, there are substantial differences in the number of household members in a specific point in time. The data from the United States from 1960 to 2019 (U.S. Census Bureau (<https://www.census.gov/data/tables/time-series/demo/families/households.html>)) show that even in 1960, when the percentage of one-person households was at 13.1 percent, its lowest in the period, the effect of the economy on voting behavior was expected to be variable across households/individuals. On the other hand, all else being equal, economic voting should be stronger as time goes by, due to the monotonic and substantial decrease in the average number of people per household. While the average in 1960 was 3.32, it was 2.76 in 1980 and 2.52 in 2019. At the same time, the percentage of one-person households from 1960 to 2019 rose by 2.2, from 13.1 percent in 1960 to 28.4 percent in 2019. In other words, our argument may shed light on a relatively unexplored question: whether economic voting has increased, decreased or stayed the same over time (Dassonneville and Lewis-Beck 2019: 93).

The preceding discussion allows us to identify the following hypothesis relating to how household composition may shape individuals' personal experience:

The greater the number of household members, the more likely mid-range response when respondents are asked to compare their current financial conditions and those of their family to those in the past.

**Figure 1: Average number of persons per household
and one-person households (%) in the US, 1960-2019**

3. Data and methods

The empirical analysis proceeds in two stages. The first stage examines whether personal financial experience influences evaluations of the national economy. In the second stage of our analysis, we investigate the extent to which individuals' financial experience is affected by household size.

The individual-level data employed in this paper are from the Cumulative Data File of the American National Election Study. While the Cumulative Data File includes survey information for presidential elections dating back to 1948, the retrospective evaluation of the national economy question has been included since 1980 (i.e., in 16 years of surveys) and the personal finance experience question since 1966 (i.e., in 20 years of surveys). The data from the different surveys have been pooled in order to maximize the variation in the objective national conditions and in household size.

In the first empirical analysis, the dependent variable is the *Sociotropic Economic Evaluation* with three response categories. The corresponding survey question asks respondents to compare current national economic conditions to those in the past year (i.e., retrospective evaluation). Responses to the question range from

“worse” to “better,” with “stayed the same” as the mid-range evaluation.³ Given that *Sociotropic Economic Evaluation* is an ordered categorical variable, ordered probit models have been run.

Our main independent variable, *Personal Finance Experience*, is the respondents’ retrospective pocketbook evaluation. The corresponding survey question asks respondents to compare their current financial conditions and those of their family to those in the past year. Responses to the question range from “worse” to “better,” with “stayed the same” as the mid-range evaluation.⁴

Of course, there are other issues besides the retrospective pocketbook evaluation that shape perceptions of the national economic conditions. We control for three different sources of subjective heterogeneity in evaluations of national economic conditions and personal financial experiences (Duch, Palmer, and Anderson 2000; see also Krause 1997; Evans and Andersen 2006; Tilley and Hobolt 2011; Tverdova 2012; Hansford and Gomez 2015; Rogers and Tyszler 2018):

Group self-interest. Individuals’ reaction to the objective economy is expected to vary with their social and economic status. Four variables capture economic self-interest: *Female* (2, female; 1, male), *Age* (measured in years), *Work Status*⁵ (5, student; 4, homemaker; 3, retired; 2, not employed; 1, employed), and *Family Income*⁶ (5, 96th to 100th percentile; 4, 68th to 95th percentile; 3, 34th to 67th percentile; 2, 17th to 33rd percentile; 1, 0th to 16th percentile).

Information. Information and political sophistication are expected to affect how respondents perceive economic performance. We include two standard controls: *Education* (4, college or advanced degree; 3, some college [13 grades or more, but no degree]; 2, high school [12 grades or fewer]; 1, grade school or less [0–8 grades]); and *Interest in the Elections*⁷ (3, very interested; 2, somewhat interested; 1, not very interested).

³ In 2000, respondents were randomly assigned to be administered this question using either the standard format or an alternative version in which the order of options read aloud reversed.

⁴ In 2000, respondents were randomly selected to be administered this question in either the Pre or Post.

⁵ For years prior to 1972, this was mostly a respondent self-identification. For years 1972 and later, except 2002 fresh cross, working status is stated after the respondent has first self-identified in one or more occupation categories and then has answered other employment questions related to work history, number of work hours, etc.

⁶ Prior to 1972, this was an estimate of the current year’s income; since 1972, the previous year’s income. Since 1976 the question was not actually asked if the respondent was the only household member age 14 or over; in such cases, data from the question asking for the respondent’s own income was duplicated.

⁷ In 1988, 1992, 2002, 2004 and 2008, this variable was asked in both the pre and post, but only the pre version is represented here.

Political attitudes. Individuals with a strong attachment to the incumbent party may perceive the national economy more positively. Partisanship is captured with a dummy variable, *Party ID*, coded 1 if the respondent is identified with the incumbent party, 0 otherwise.

Finally, in addition to the individual-level control variables, *GDP Growth Rate_{t-1}* and year fixed effects are included separately in the models in order to account for election-to-election variation in the baseline probability of supporting the incumbent party. Economic growth is measured in the year prior to the corresponding survey to give time for its impact to be absorbed in the voter's calculation (Valdini and Lewis Beck 2018: 414).⁸ Because national economic conditions are subsumed by the year fixed effects, it is not possible to include them at the same time.

In the second empirical analysis, the dependent variable is *Personal Finance Experience*, and the main independent variable is the number of household members. In particular, household size is captured with the number of politically eligible adults in the household, *# Household Adult Members*. Eligible persons are those eligible to vote by age and U.S. citizenship status and represented from the primary family.⁹ As the effect of household composition on the respondents' retrospective pocketbook evaluation depends on the economic situation of the other family members and the political discussion within the household, it makes sense only considering adults in the household.

Although the dependent variable is an ordered categorical variable, multinomial probit regressions are run instead of ordered probit regressions. As we expect a U-shaped relationship between *Personal Finance Experience* and the *# Household Adult Members* (i.e., the effect of *# Household Adult Members* is expected to be negative both when comparing "better" and "worse" with "the same" *Personal Finance Experience*), the proportional odds assumption is violated.¹⁰

The controls in this second empirical analysis will again be the three different sources of subjective heterogeneity in evaluations of national economic conditions, *Group self-interest*, *Information* and *Political attitudes*. Three models will be estimated when *Personal Finance Experience* is the dependent variable: two models with *GDP*

⁸ Data obtained from the Bureau of Economic Analysis. GDP is in millions of current dollars. Industry detail for the years 1963–86 is based on the 1972 Standard Industrial Classification (SIC). For the years 1987–97, it is based on the 1987 SIC, and since 1997, it is based on the 2012 North American Industry Classification System (NAICS). Calculations are performed on unrounded data.

⁹ The question is available in all surveys since 1966, with the exception of 1970.

¹⁰ The Brant test of parallel regression assumption is statistically significant at the 0.000 percent level.

$Growth Rate_{t-1}$ and year fixed effects included separately and the interaction between $\# Household Adult Members \times GDP Growth Rate_{t-1}$. According to our argument, we should expect that the effect of the same economic growth will be greater in one-person households.

The descriptive statistics are displayed in Table 1. The values for the variable *Sociotropic Economic Evaluation* are obtained from the estimation in Table 2, while the remaining variables come from the estimation in Table 3.

Table 1. Descriptive Statistics

VARIABLES	Obs	Mean	Std. Dev.	Min	Max
Sociotropic Economic Evaluation	29,233	1.85	0.84	1	3
Personal Finance Experience	29,615	1.92	0.81	1	3
# Household Adult Members	29,615	1.86	0.76	1	7
Female	29,615	1.55	0.50	1	2
Age	29,615	45.35	17.39	17	99
Work Status	29,615	1.85	1.21	1	5
Family Income	29,615	2.87	1.15	1	5
Education	29,615	2.65	0.92	1	4
Interest in the Elections	29,615	2.11	0.74	1	3
Party ID	29,615	0.43	0.50	0	1
GDP Growth Rate _(t-1)	29,615	3.01	1.39	-0.2	4.8

4. Results

Table 2 displays the ordered probit models of sociotropic economic evaluations with the ANES data. The variables are organized into the categories previously distinguished. Consistent with prior research, the results strongly support the importance of personal economic experience when assessing the national economy. In the two models, the estimate for this variable is positive and statistically significant at the 0.01 percent level. The better the respondents' retrospective pocketbook evaluations, the more likely the respondent is to positively evaluate the national economic conditions. Over the entire range of personal financial evaluations (i.e., from "worse" to "better"), a typical respondent's predicted probability of positively evaluated national economy increases by 19.5 percentage points in the first model and 18.0 percentage points in the second model.

On the basis of their statistical significance, being male, education, and, above all, partisanship and economic growth positively influence evaluations of the national economy in the two models (at the 0.01 percent level). The z-statistics for the *Party ID*

variable are larger than those for any of the other independent variables. The remaining controls are not statistically significant or do not have a consistent effect in the two models.

Table 2. Ordered Probit Models of Sociotropic Economic Evaluations

VARIABLES	Model 1	Model 2
Personal Finance Experience (ref. Worse)		
<i>Same</i>	0.394*** (0.0200)	0.423*** (0.0215)
<i>Better</i>	0.711*** (0.0203)	0.712*** (0.0210)
Group Self-Interest		
<i>Female</i>	-0.148*** (0.0164)	-0.159*** (0.0168)
<i>Age</i>	0.00142*** (0.000493)	-0.000445 (0.000660)
<i>Work Status</i> (ref. Employed)		
Not Employed	0.0275 (0.0290)	-0.0360 (0.0308)
Retired	0.0552 (0.0282)	0.0391 (0.0290)
Homemaker	-0.0344 (0.0296)	-0.00759 (0.0304)
Student	0.126*** (0.0483)	-0.00903 (0.0511)
<i>Family Income</i>	-0.00131 (0.00788)	0.0123 (0.00817)
Information		
<i>Education</i> (ref. Grade School or less)		
High School	0.138*** (0.0357)	-0.0365 (0.0394)
Some College	0.266*** (0.0379)	0.0396 (0.0420)
College or Advanced Degree	0.382*** (0.0392)	0.163*** (0.0431)
<i>Interest in the Elections</i>	0.0300*** (0.0113)	0.0201 (0.0118)
Political Attitudes		
<i>Party ID</i>	0.596*** (0.0158)	0.621*** (0.0164)
National Economy		
<i>GDP Growth Rate</i> _(t-1)	0.180*** (0.00594)	
μ_1	1.176*** (0.0576)	1.659*** (0.0710)
μ_2	2.207*** (0.0585)	2.823*** (0.0725)
Year Fixed Effects	No	Yes
Log Likelihood	-28501.973	-25829.145
Observations	29,233	29,233

Robust standard errors in parentheses. *** p<0.01, ** p<0.05.

The multinomial probit models testing our hypothesis about the impact of the number of household members on personal finance experience are displayed in Table 3. “Stayed the same” is the reference category. The important coefficients to focus on for our purposes are those relating to the number of household members. In the previous section, we have argued that we expect them to be negatively signed. The results appear to strongly support our expectation. In the first model, when including economic growth as a control variable, we find that the two coefficients on the log of the *# Household Adult Members* are negative and statistically significant at the 0.01 percent level: the effect of *# Household Adult Members* reduces the probability of deviating from “the same” *Personal Finance Experience*. In other words, the greater the number of household adult members, the more likely mid-responses are.

When economic growth is replaced with the year fixed effects in the second model the results are qualitatively the same; the number of household members once again reduces the probability of positive and negative economic opinions compared to the no change opinion. Although the coefficients are smaller than in the previous model, both are still statistically significant at the 0.01 and 0.05 percent levels.

Finally, the interactive specification in model 3 also supports our hypothesis. The interactions between the number of household adult members and economic growth are negative and statistically significant at the 0.05 and 0.01 percent levels: the greater the household size, the less relevant economic growth is for personal finance experience.

Among the controls, *Age*, *Work Status*, and *Party ID* have significant effects at the 0.01 percent level across the three models and the different responses, with older people more supportive of the mid-range response and the incumbent’s partisans and high-income individuals more inclined to have positive views about their personal economic conditions. Women are consistently more negative about their personal financial experience than men, while those respondents who are employed have more positive views about their financial conditions than the rest of the individuals.

Table 3. Multinomial Probit Models of Personal Finance Experience

VARIABLES	Model 1		Model 2		Model 3	
	Better / Same	Worse / Same	Better / Same	Worse / Same	Better / Same	Worse / Same
(log) # Household Adult Members	-0.165*** (0.0354)	-0.146*** (0.0355)	-0.0977*** (0.0350)	-0.0689** (0.0353)	-0.0139 (0.0789)	0.0206 (0.0760)
Group Self –Interest						
Female	-0.0513 (0.0272)	0.0783*** (0.0277)	-0.0498 (0.0274)	0.0830*** (0.0281)	-0.0511 (0.0272)	0.0785*** (0.0277)
Age	-0.0302*** (0.00103)	-0.0104*** (0.000978)	-0.0303*** (0.00105)	-0.0100*** (0.000999)	-0.0302*** (0.00103)	-0.0104*** (0.000978)
Work Status (ref. Employed)						
Not Employed	-0.251*** (0.0517)	0.564*** (0.0477)	-0.249*** (0.0521)	0.576*** (0.0484)	-0.250*** (0.0517)	0.564*** (0.0477)
Retired	-0.197*** (0.0492)	-0.107** (0.0457)	-0.228*** (0.0497)	-0.147*** (0.0462)	-0.198*** (0.0492)	-0.109** (0.0456)
Homemaker	-0.176*** (0.0416)	-0.0733 (0.0419)	-0.180*** (0.0426)	-0.0724 (0.0431)	-0.176*** (0.0416)	-0.0740 (0.0419)
Student	-0.461*** (0.0858)	-0.162 (0.0865)	-0.502*** (0.0871)	-0.154 (0.0878)	-0.459*** (0.0857)	-0.161 (0.0865)
Family Income	0.0853*** (0.0138)	-0.0816*** (0.0136)	0.0737*** (0.0140)	-0.0980*** (0.0138)	0.0853*** (0.0138)	-0.0817*** (0.0136)
Information						
Education (ref. Grade School or less)						
High School	-0.0674 (0.0515)	0.180*** (0.0481)	-0.0880 (0.0526)	0.165*** (0.0496)	-0.0691 (0.0515)	0.178*** (0.0480)
Some College	0.0539 (0.0558)	0.254*** (0.0536)	0.0496 (0.0582)	0.264*** (0.0565)	0.0525 (0.0558)	0.252*** (0.0536)
College or Advanced Degree	0.0496 (0.0577)	0.131** (0.0566)	0.0554 (0.0603)	0.147** (0.0598)	0.0478 (0.0577)	0.129** (0.0566)
Interest in the Elections	0.0108 (0.0181)	-0.00429 (0.0181)	0.0485*** (0.0185)	0.0276 (0.0186)	0.0105 (0.0181)	-0.00468 (0.0181)
Political Attitudes						
Party ID	0.273*** (0.0252)	-0.240*** (0.0260)	0.289*** (0.0256)	-0.238*** (0.0265)	0.273*** (0.0252)	-0.240*** (0.0259)
National Economy						
GDP Growth Rate _(t-1)	0.0138 (0.00890)	-0.0548*** (0.00881)			0.0436*** (0.0155)	-0.0223 (0.0149)
Household Members×GDP Growth Rate					-0.0511** (0.0229)	-0.0569** (0.0222)
Constant	1.213*** (0.0855)	0.746*** (0.0830)	0.819*** (0.0954)	0.0271 (0.0970)	1.127*** (0.0939)	0.654*** (0.0910)
Year Fixed Effects	No	No	Yes	Yes	No	No
Log Likelihood	-31070.525	-31070.525	-30273.714	-30273.714	-31065.769	-31065.769
Observations	29,615	29,615	29,615	29,615	29,615	29,615

Robust standard errors in parentheses. *** p<0.01, ** p<0.05.

As the interpretation of multinomial regression tables is challenging, in Figure 2 we plot the coefficients and confidence intervals of the three models. In the left and center sides of the figure, the predicted probabilities of the three categories of *Personal Finance Experience* along the number of household adult members are displayed. They correspond to Models 1 and 2. In both cases, the probability of observing a positive or a negative opinion monotonically decreases with the number of household members, while the mid-range response monotonically increases. For instance, in Model 1, the probability of a mid-range response in one-person households is 30.5 percent, 32.5 percent in two-person households, 34.7 percent in three-person households, and 36.8 percent in four-person households. In the right side of the figure, the solid sloping lines indicate how the marginal effect of the number of household adult members on the three response categories changes with economic growth.

Figure 2: Effect of the Number of Household Adult Members on Personal Finance Experience (I)

In Figure 3, the predicted probabilities of the three possible responses about the personal economic experience with 95 percent confidence intervals are computed when there are one, two and three persons in the household. There are three interesting results in the figure. First, in one-person households, the probability of a mid-range response (i.e., the family current financial conditions stayed the same compared to those in the past year), 30.1 percent, is substantially lower than in two- and three-person households, where the respective probability is 33.4 and 35.1 percent. Secondly, while in two- and three-person households the probability of a mid-range response is much higher than a negative one, in one-person households the probabilities are very similar. Finally, the greatest difference between a mid-range and a positive response is clearly observed in one-person households, while there is virtually no difference in three-person households. Given the downward trend in the average household size in the United States (and worldwide), the prediction we can make from Figure 3 is that the economy should exercise an increasing impact on the vote over time.

Figure 3: Effect of the Number of Household Adult Members on Personal Finance Experience (II)

To explore the robustness of our results, we have re-estimated the models explaining *Personal Finance Experience* (Table 3) for the subsample of individuals in one-, two- and three-person households. As the number of household adult members goes from one to seven, but only 5.0 percent of the individuals in the sample live in households with four or more members, it is important to show that our results are not driven by the small percentage of large household sizes. The multinomial probit models are displayed in Table 4 in the Appendix. As can be seen, the results are qualitatively the same. In the additive specifications, Models 1 and 2, the coefficients on the log of the *# Household Adult Members* are again negative and statistically significant at the 0.05 and 0.01 percent levels, while the interactions between the number of household adult members and economic growth are negative and statistically significant at the 0.05 percent level or better.

5. Conclusions

Our analysis supports the argument that household size, measured as the number of adult members, systematically influences evaluations of personal financial situation in U.S. elections. These perceptions are conditioned both by aspects of voters' own personal experiences and those of their households. In fact, we found that moderate or mid-range responses when individuals are asked about their personal financial situation are more likely in multi-person households than in one-person households. The mechanism accounting for the effect of household composition has to do with the aggregation of household members' financial situations. When an economy is relatively stable, varying personal financial situations within multi-person households are quite likely. Thus, it is harder for an individual to say that her personal financial situation is good or bad if she is considering several varying economic conditions at the same time. In other words, the aggregation of economic evaluations within households reduces the variation across household members. More generally, these findings suggest that it is more difficult to obtain a strong correlation between the economy and the vote in multi-person households than in one-person households, due to the restricted variation of economic opinions in the former. As the average household size is declining nearly everywhere, a relevant implication of our analysis is that economic voting should increase over time, as Walczak, van der Brug, and De Vries (2012), for instance, argue.

There are qualifications to these conclusions, but we consider that the main issues can be dealt with effectively. It can be argued that the number of politically

eligible adults in the household is not exactly the same as the number of household members. We have chosen this measure because it is the only available question in the Cumulative Data File of the American National Election Study, but more importantly, we believe that it links directly to our argument. For us, household members are relevant when they have their own personal financial situation and are frequent discussion partners. Of course, these two conditions only apply to adults. Additionally, the measure does not encompass the specific economic status (e.g., work status) of all household members. However, it is plausible to assume that the greater the number of household members, the greater the likelihood of varying economic conditions within the household.

Finally, our analysis opens up two relevant research questions. First, future research should test our argument in other countries and economic contexts. We doubt that our results are specific to the U.S., as demographic changes are universal. Second, our analysis speaks to an ongoing debate concerning the stability of the economic vote in established democracies. Exploring how demographic changes are affecting economic vote is a topic to be pursued in future work.

6. References

- Bello, Jason and Meredith Rolfe. 2014. "Is Influence Mightier than Selection? Forging Agreement in Political Discussion Networks during a Campaign." *Social Networks* 36:134-146.
- Berelson, Bernard R., Paul F. Lazarsfeld and William N. McPhee. 1954. *Voting*. Chicago: University of Chicago Press.
- Dassonneville, Ruth and Michael S. Lewis-Beck. 2019. "A changing economic vote in Western Europe? Long-term vs. short-term forces." *European Political Science Review* 11(1): 91-108.
- Duch, Raymond, Harvey D. Palmer and Christopher J. Anderson. 2000. "Heterogeneity in Perceptions of National Economic Conditions." *American Journal of Political Science* 44(4): 635-652.
- Evans, Geoffrey and Robert Andersen. 2006. "The Political Conditioning of Economic Perceptions." *Journal of Politics* 68(1): 194-207.

- Fieldhouse, Edward and David Cutts. 2012. "The Companion Effect: Household and Local Context and the Turnout of Young People." *Journal of Politics* 74(3):856–869.
- Foos, Florian and Eline A. de Rooij. 2017. "All in the Family: Partisan Disagreement and Electoral Mobilization in Intimate Networks- A Spillover Experiment." *American Journal of Political Science* 61(2): 289-304.
- Glaser, William A. 1959. "The Family and Voting Turnout." *Public Opinion Quarterly* 23(4): 563–570.
- Hansford, Thomas G. and Brad T. Gomez. 2015. "Reevaluating the sociotropic economic voting hypothesis." *Electoral Studies* 39: 15-25.
- Krause, George A. 1997. "Voters, information heterogeneity, and the dynamics of aggregate economic expectations." *American Journal of Political Science* 41(4): 1170-1200.
- Lazarsfeld, Paul F., Bernard Berelson, and Hazel Gaudet. [1944] 1968. *The People's Choice: How the Voter Makes Up His Mind in a Presidential Election*. 3rd. ed. New York: Columbia University Press.
- Lewis-Beck, Michael S. and Martin Paldam. 2000. "Economic Voting: An Introduction." *Electoral Studies* 19 (2-3): 113-121.
- Lewis-Beck, Michael S. and Mary Stegmaier. 2019. "Economic Voting." In *The Oxford Handbook of Public Choice, Vol. 1.*, eds. Roger D. Congleton, Bernard Grofman and Stefan Voigt. Oxford: Oxford University Press, pp. 247-265.
- Mutz, Diana C. 1992. "Mass Media and the Depolitization of Personal Experience." *American Journal of Political Science* 36(2): 483-508.
- Mutz, Diana C. 2006. *Hearing the Other Side: Deliberative versus Participatory Democracy*. Cambridge: Cambridge University Press.
- Niemi, Richard G., John Bremer, and Michael Heel. 1999. "Determinants of State Economic Perceptions." *Political Behavior* 21 (2): 175-93.
- OECD. 2011. *The Future of Families to 2030. Projections, Policy Challenges and Policy Options. A Synthesis Report*. OECD, International Futures Programme.
- Page, Benjamin I and Robert Y. Shapiro. 1992. *The Rational Public: Fifty Years of Trends in American Policy Preferences*. Chicago: University of Chicago Press.
- Rogers, Jonathan and Marcelo Tyszler. 2018. "Information and Economic Voting." *Political Science Research and Methods* 6(4): 753-770.

- Sinclair, Betsy, Margaret McConnell and Donald P. Green. 2012. "Detecting Spillover Effects: Design and Analysis of Multi-level Experiments." *American Journal of Political Science* 56(4): 1055–1069.
- Singer, Matthew M. and Ryan E. Carlin. 2013. "Context Counts: The Election Cycle, Development, and the Nature of Economic Voting." *Journal of Politics* 75(3): 730-742.
- Stoker, Laura and M. Kent Jennings. 2005. Political Similarity and Influence between Husbands and Wives. In *The Social Logic of Politics: Personal Networks as Contexts for Political Behavior*, ed. Alan S Zuckerman. Philadelphia: Temple University Press, pp. 51-74.
- Tilley, James and Sara Hobolt. 2011. "Is the Government To Blame? An Experimental Test of How Partisanship Shapes Perceptions of Performance and Responsibility." *The Journal of Politics* 73(2): 316-330.
- Tverdova, Yuliya. 2012. "The Formation of Economic Perceptions in Post-Communist Countries of East Central Europe." *Political Behavior* 34(1): 137-158.
- United Nations. 2017. *Population Facts. Household size and composition around the world*. United Nations, Population Facts No. 2017/2.
- Valdini, Melody E. and Michael S. Lewis-Beck. 2018. "Economic Voting in Latin American: Rules and Responsibility." *American Journal of Political Science* 62(2): 410-423.
- Verba, Sidney, Kay Lehman Schlozman and Nancy Burns. 2005. Family Ties: Understanding the Intergenerational Transmission of Political Participation. In *The Social Logic of Politics: Personal Networks as Contexts for Political Behavior*. Philadelphia: Temple University Press, pp. 95–114.
- Walczak, Agnieszka, Wouter van der Brug and Catherine de Vries. 2012. "Long- and short-term determinants of party preferences: Inter-generational differences in Western and East Central Europe." *Electoral Studies* 31(2): 273-284.

APPENDIX

Table 4. Multinomial Probit Models of Personal Finance Experience with Three or Less Adults in the Household

VARIABLES	Model 1		Model 2		Model 3	
	Better / Same	Worse / Same	Better / Same	Worse / Same	Better / Same	Worse / Same
(log) # Household Adult Members	-0.163*** (0.0352)	-0.151*** (0.0352)	-0.0987*** (0.0361)	-0.0745** (0.0363)	-0.00879 (0.0762)	0.0581 (0.0740)
Group Self –Interest						
Female	-0.0743*** (0.0253)	0.0656** (0.0258)	-0.0734*** (0.0256)	0.0705*** (0.0262)	-0.0741*** (0.0253)	0.0659** (0.0258)
Age	-0.0308*** (0.000920)	-0.0107*** (0.000915)	-0.0309*** (0.000937)	-0.0104*** (0.000935)	-0.0307*** (0.000920)	-0.0107*** (0.000915)
Work Status (ref. Employed)						
Not Employed	-0.238*** (0.0469)	0.571*** (0.0432)	-0.245*** (0.0476)	0.576*** (0.0440)	-0.238*** (0.0469)	0.571*** (0.0432)
Retired	-0.173*** (0.0447)	-0.0888** (0.0427)	-0.209*** (0.0452)	-0.131*** (0.0434)	-0.175*** (0.0447)	-0.0904** (0.0428)
Homemaker	-0.164*** (0.0392)	-0.0648 (0.0394)	-0.167*** (0.0400)	-0.0622 (0.0403)	-0.165*** (0.0392)	-0.0658* (0.0394)
Student	-0.506*** (0.0763)	-0.139 (0.0791)	-0.546*** (0.0778)	-0.136 (0.0806)	-0.506*** (0.0764)	-0.139 (0.0791)
Family Income	0.0843*** (0.0125)	-0.0793*** (0.0127)	0.0709*** (0.0128)	-0.0969*** (0.0130)	0.0842*** (0.0125)	-0.0794*** (0.0127)
Information						
Education (ref. Grade School or less)						
High School	-0.0661 (0.0478)	0.192*** (0.0454)	-0.0869 (0.0490)	0.177*** (0.0469)	-0.0672 (0.0478)	0.190*** (0.0454)
Some College	0.0578 (0.0525)	0.261*** (0.0508)	0.0534 (0.0545)	0.270*** (0.0532)	0.0569 (0.0525)	0.259*** (0.0508)
College or Advanced Degree	0.0588 (0.0545)	0.135** (0.0534)	0.0644 (0.0569)	0.152*** (0.0561)	0.0577 (0.0545)	0.133** (0.0534)
Interest in the Elections	0.0134 (0.0167)	-0.00669 (0.0168)	0.0482*** (0.0171)	0.0232 (0.0172)	0.0130 (0.0167)	-0.00715 (0.0168)
Political Attitudes						
Party ID	0.280*** (0.0235)	-0.229*** (0.0241)	0.294*** (0.0240)	-0.229*** (0.0247)	0.280*** (0.0235)	-0.229*** (0.0241)
National Economy						
GDP Growth Rate _(t-1)	0.0151 (0.00818)	-0.0558*** (0.00821)			0.0437*** (0.0151)	-0.0173 (0.0145)
Household Members × GDP Growth Rate					-0.0521** (0.0228)	-0.0717*** (0.0224)
Constant	1.232*** (0.0780)	0.754*** (0.0778)	0.854*** (0.0910)	0.0507 (0.0935)	1.149*** (0.0863)	0.645*** (0.0849)
Year fixed effects	No	No	Yes	Yes	No	No
Log likelihood	-29494.977	-29494.977	-28758.596	-28758.596	-29489.529	-29489.529
Observations	28,573	28,573	28,573	28,573	28,573	28,573

Robust standard errors in parentheses *** p<0.01, ** p<0.05.