Partisan Bias, Economic Expectations, and Household Spending

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Abstract

The well-documented rise in political polarization among the U.S. electorate over the past 20 years has been accompanied by a substantial increase in the effect of partisan bias on survey-based measures of economic expectations. Individuals have a more optimistic view on future economic conditions when they are more closely affiliated with the party that controls the White House, and this tendency has increased significantly over time. Individuals report a large shift in economic expectations based on partisan affiliation after the 2008 and 2016 elections, but administrative data on spending shows no effect of these shifts on actual household spending.

Economists have long believed that economic expectations are crucial to understanding economic activity and the effect of government economic policy. But how do individuals actually form economic expectations? One line of research in economics examines responses to survey questions. For example, the University of Michigan Survey of Consumers asks individuals the following question: "Looking ahead, which would you say is more likely – that in the country as a whole we'll have continuous good times during the next 5 years or so, or that we will have periods of widespread unemployment or depression or what?"

Economists typically treat an individual's answers to these questions as a reflection of the individual's expectations of future income growth. The evolution of such expectations could reflect information the household receives on fundamental changes in the economy. Alternatively, household beliefs about future income growth may reflect sentiment, or changes in expectations that are orthogonal to future economic conditions. A large body of research in economics has focused on these issues (e.g., Barsky and Sims (2012), Azariadis (1981), Benhabib and Farmer (1994), Lorenzoni (2009), and Angeletos and La'O (2013)). Beyond the academic literature, the answers to such survey questions receive widespread coverage from the financial press, which likely reflects the view that the answers contain valuable information for predicting income and spending growth.[1]

However, research in political science suggests caution when evaluating responses to surveys on economic conditions because of potential partisan bias. As an example of such bias, it has been shown that individuals have a more positive assessment of current economic conditions when the White House is occupied by the party they support (e.g, Bartels (2002)). The idea of a "partisan perceptual screen" has been present in the literature since the seminal work by Campbell et al. (1960); Gerber and Huber (2009) summarize the idea succinctly by writing: "In short, this evidence portrays partisan voters as individuals who tend to see what they want to see." A separate but related line of research in political science documents a large increase in social and affective polarization across political parties (e.g., Iyengar et al. (2012); Mason (2013); Mason (2015); Gentzkow (2016); Boxell et al. (2017)). Political parties are increasingly homogeneous in the ideology of their members, and partisans show increasing hostility toward members of the opposite political party. This line of research suggests that partisan bias in evaluations of the economy may

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[1]For example, the release of the August 2017 consumer sentiment index from the University of Michigan was covered by CNBC, the Financial Times, and the Wall Street Journal. Further, answers to consumer sentiment questions are considered a leading economic indicator by most economic forecasters.

be growing over time.

In this study, we investigate three related questions. Does partisan bias influence an individual's assessment of future economic conditions as reported in surveys? If so, has partisan bias in expectations formation risen over time? And finally, do movements in economic expectations driven by partisan bias influence household spending?

We find that partisan bias exerts a significant influence on survey measures of economic expectations, and this bias is increasing substantially over time. Using two independent data sources (the University of Michigan Survey of Consumers and Gallup), we show that individuals who affiliate with the party that controls the White House have systematically more optimistic economic expectations than those who affiliate with the party not in control. This has been true at least since the Reagan administration in the 1980s. Further, the bias is becoming larger over time. For example, Republicans have economic expectations since January 2017 that are on average 1 to 1.5 standard deviations more optimistic than Democrats. The difference was less than one-half a standard deviation prior to the first Obama administration. The explanatory power of party affiliation on economic expectations, as measured by the R^2 from a linear regression, has risen four-fold from 0.07 to 0.28 from the George W. Bush to Trump administrations.

How does the rise in partisan bias in economic expectations affect household spending? To answer this question, we focus on changes in economic expectations right around Presidential elections, which give us the "cleanest" estimates of the pure effect of political outcomes on economic expectations. Following the 2008 and 2016 Presidential elections, we find that individuals supporting the party of the winning presidential candidate witness a substantial relative rise in optimism about the economy immediately after the election. The relative change in economic expectations is particularly large after the 2016 election. Individuals identifying themselves as Republicans see a 1.5 standard deviation increase in economic optimism from November 2016 to January 2017, whereas Democrats see a 0.75 standard deviation decline in economic optimism.

One hypothesis is that economic expectations of partisans are driven by the party controlling the White House because the actual economic condition improves for partisans if their party is in control. We examine county-level and state-level measures of tax rates, personal income growth, and transfers around elections, and we find little evidence that economic circumstances change to the benefit of areas supporting the new President after elections.

We also test this hypothesis using a simple assumption: individuals living in the same zip code should be similarly affected by whatever economic factors are associated with the occupant of the White House. Using the data set from Gallup, which contains large samples and detailed geographic identifiers, we show that our estimates of partisan bias are unchanged with the inclusion of zip code by month fixed effects. For example, Democrats and Republicans experience sharply diverging views on the economy after the election of Donald Trump in 2016 even if they live in the same zip code.

As a further test, we examine answers to a question in the Gallup survey on whether the firm for which an individual works is hiring or letting go of employees. We find substantial partisan bias in the answers to these questions right around elections, and this bias is also unchanged with the inclusion of zip code by month fixed effects. In other words, after the election of Donald Trump, a Republican is much more likely to report that her firm is hiring workers while a Democrat living in the same zip code is much more likely to report that her firm is firing workers. Taken together, these results lead us to the conclusion that the sharp relative changes in economic optimism around Presidential elections are pure partisan bias as opposed to a response to changes in economic circumstances of partisans.

How do these large changes in economic optimism around elections translate into household spending? We utilize two types of data to measure household spending: survey questions where individuals report information on their spending, and administrative data that records actual spending at the county and zip code level. We find mixed evidence on spending in the survey questions. In the Michigan data, we find almost no evidence of a change in spending patterns based on questions on whether it is a good time to buy major household items or a car. In the Gallup data, Republicans report higher spending after the election of Donald Trump in 2016, but they do not report lower spending after the election of Barack Obama in 2008.

In the administrative data, we find no evidence of a change in spending driven by changes in economic expectations due to partisan bias. Geographic locations seeing a large relative rise in economic optimism due to the election outcome see no change in auto purchases or credit card spending. The evidence for the 2016 election is most striking. Through October 2017, there is no relative increase in auto purchases or credit card spending in U.S. counties or zip codes where individuals voted in the highest proportion for the Republican candidate, even though the increase

in optimism on the economy in these areas is large. The overall evidence on spending leads us to the conclusion that partisan bias in economic expectations has little to no effect on household spending.

Perhaps cross-sectional variation in economic expectations as measured in surveys never correlate with household spending? To explore this issue, we focus on an alternative shock: cross-sectional variation across U.S. counties in the decline in house prices from 2006 to 2007. There is an established body of research showing that counties seeing a bigger decline in house prices during the housing bust witnessed a substantial relative drop in employment and income that lasted several years (e.g., Mian and Sufi (2014), Yagan (2016)). As a result, we view the decline in house prices from 2006 to 2007 in a county as a fundamental shock to future income for those living in the county.

Using this alternative source of variation, we find that the decline in house prices in a county is correlated with the decline in economic expectations of survey respondents living in the county and the decline in all of our measures of consumption. This benchmark exercise shows that it is possible to measure a change in economic expectations driven by fundamentals in the cross-section of respondents in the Michigan survey that is correlated with changes in spending. Consumer expectations correlate with spending when they are driven by fundamental shocks, but they do not correlate with spending when they are driven by partisan bias.

Our findings complement the growing body of research in political science showing that partisan bias and affective polarization have been increasing over time. Partisan bias is also exerting an increasingly powerful influence on survey-based measures of economic expectations, and the election of Donald Trump boosted this effect well beyond anything seen in the recent past. Yet despite the fact that individuals increasingly report economic expectations with significant partisan bias, there is little evidence of an effect on actual household spending.

There is a large body of research in political science evaluating the effect of partisan bias on views on the economy (e.g., Wlezien et al. (1997); Duch et al. (2000); Palmer and Duch (2001); Bartels (2002); Evans and Andersen (2006); Ladner and Wlezien (2007); Stanig (2013)). Our research is most closely related to three studies in particular. Gerber and Huber (2010) examine changes in evaluations of the economy among partisans before and after the 2006 mid-term election, and they find large differences across partisans in how economic assessments are revised immediately after the

election. Gerber and Huber (2009) evaluate a longer time series of county-level spending responses to Presidential elections based on the partisan leaning of the county, and they find evidence that counties leaning to the winning Presidential candidate experience a boost in spending after the election. However, McGrath (2016) extends the sample in Gerber and Huber (2009) and examines the previous evidence in more detail, and concludes that there is no evidence of a differential partisan effect of Presidential election outcomes on spending.

To the best of our knowledge, this study is the first to show both the dramatic rise in the effect of partisan bias on survey-based measures of economic expectations over time, and that this rise does not appear to affect household spending. In addition, to the best of our knowledge, this is the first study to evaluate the election of Donald Trump in this context. Much of the political science literature has focused on assessments of current economic conditions, whereas our study focuses on expectations of future conditions. Further, we use a variety of data sources on economic expectations and household spending that we believe are new to the literature. We utilize administrative data on auto sales and credit card spending at the zip code-monthly level, which we believe is the most disaggregated administrative spending data in the literature. The Gallup dataset is significantly larger and more comprehensive than data sets used in the past to measure economic expectations; this data set allows us to utilize zip code by month fixed effects in order to estimate partisan bias more precisely than has been done in the past. Two closely related studies were written either contemporaneously or subsequent to the original version of this study (Gillitzer and Prasad (2016) and Benhabib and Spiegel (2017)). We will discuss these two studies in more detail in Section 5 below.

The rest of this study proceeds as follows. In the next section, we present the data, our methodology for estimating voting propensity in Presidential elections, and summary statistics. Sections 2 and 3 show the shift in economic expectations among partisans from 2000 to 2016. Section 4 examines whether spending changes differentially for partisans after elections. Section 5 compares our results to other research, and Section 6 concludes.

1 Data, Measurement, and Summary Statistics

We use data sets at the individual, zip code, and county level, focusing primarily on the 1995 to 2017 period in the United States.

1.1 Data

The two primary data sets used in our analysis are the Thomson Reuters University of Michigan Survey of Consumers and the Gallup Daily survey by Gallup, Inc. The Michigan survey is a nationally representative survey of about 500 individuals every month. On average two-thirds of the individuals surveyed in a month are interviewed a second time after six months. The remaining third are only surveyed once. We do not utilize the panel structure of the data, and so the sample is a repeated cross-section in each month. The individual level data from Michigan is available from 1978 to 2017. However, for reasons we explain below, we concentrate primarily on the data from 1995 to 2017. The Gallup Daily data cover about 1,000 individuals every day, and are available from 2008 to 2017. The Gallup Daily surveys ask questions related to political, economic, and well-being topics. We use the Gallup data at the monthly frequency, leading to approximately 30,000 individuals every month.

We require two main variables for the purpose of this study: a measure of an individual's expectations of the economy going forward and a measure of an individual's political partisan affiliation. Both the Michigan and Gallup data contain detailed questions on economic expectations, and we describe these questions in more detail below. Measuring partisan affiliation is more challenging. The Gallup data set, covering 2008 to 2017, contains a question asking the individual's partisan affiliation in almost all surveys. The Michigan survey, however, has only asked partisan affiliation in certain months, namely: June 1980, January 1984, July 1984, January 1985, April 1985, May 1985, September through November 2006, March 2008 through June 2009, March 2010 through November 2010, April 2012, May 2012, September through November 2012; June 2014, June 2015, June through October 2016, and February and March of 2017.

Given our focus on longer-term trends in partisanship and economic expectations, we rely on two other data sets with voting information available in order to estimate a vote propensity measure in the Michigan data going back further in time. The first is the Cooperative Congressional Election

Study (CCES), which is a sample survey of more than 50,000 people conducted almost every year since 2005. This survey is administered by YouGov/Polimetrix, and has been widely used in the political science literature (see Gerber and Huber (2010) for an early example). It surveys individuals both before and after Presidential elections. Most important for our research, the CCES survey asks individuals after each Presidential election the candidate for which they voted.

The other data set with voting information is exit poll data distributed to academics by the Roper Center for Public Opinion Research. These exit poll data contain approximately 15,000 individuals after each Presidential election from 1992 to 2012. As of the time of this writing, the 2016 individual level exit poll data were not available from Roper. Both the CCES and exit poll data contain demographic information on race, age, education, income, marital status, and whether an individual has children. As we explain below, we will use the predictive effect of demographics in the CCES and Roper data on voting to estimate a Republican voting propensity in the Michigan data for months where we do not have partisan affiliation.

We also use a number of data sets at the county and zip code level. The first is the share of individuals in the county voting for the Republican candidate in each presidential election, which we purchased from David Leip's Atlas of U.S. Presidential Elections website. We also use income and transfers data from the Bureau of Economic Analysis. To measure spending at the zip code and county level, we utilize two data sets. First, we use new auto purchases from R.L. Polk. These data are derived from new car registrations and are based on the county where the buyer lives. The data are described in detail in Mian and Sufi (2012), and are available from 1998 to 2017. Second, we use a previously unused data set on credit card spending from Argus Information and Advisory Services, a Verisk Analytics company. Argus specializes in credit card and deposit benchmarking. The benchmarking data is collected from individual issuers at the account and transaction level, and then aggregated at the zip code level to construct an monthly measure of spending through credit cards. The Argus spending data was constructed in two rounds. The first data pull was in 2014 and covered the years 2006 through 2013. The second data pull was in December 2017 and covered the period January 2014 through September 2017. Both the Argus and Polk data are available at the monthly frequency, which allows us to examine at a relatively high frequency whether spending tracks changes in economic expectations around Presidential elections.

1.2 Measuring partisan affiliation and vote propensity

The Gallup survey, which covers 2008 to 2017, asks the following two questions to infer party affiliation: "In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?" If the individual answers "Republican" or "Democrat", no further question on party affiliation is asked. If the individual responds "Independent", another party, or refuses, a follow-on question is asked: "As of today, do you lean more to the Democratic Party or the Republican Party?" The individual can answer "Democrat" or "Republican" to this question. Our final measure of partisan affiliation is Republican if the individual answers either of these questions "Republican", and Democrat if the individual answers either of these questions "Democrat". The remaining individuals are classified as Independents. As we show in Appendix Figure 1, the fraction of Republicans (45%), Democrats (45%), and Independents (10%) according to this measure has been relatively constant from 2008 to 2017.

For the Michigan survey, in the months in which political affiliation is asked, we infer political affiliation from two questions. The first is: "Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?" The second question is "Do you think of yourself as closer to the Republican Party or to the Democratic Party?", which is asked of people who say "Independent" in response to the first question. We classify individuals as Republican if they answer either of these questions "Republican", and Democrat if they answer either of these questions "Democrat". Remaining individuals are classified as Independent. In most of our analysis below, we exclude independents.

As mentioned above, while we have a direct measure of partisan affiliation in the Gallup data from 2008 to 2017 and in the Michigan data for select months going back to 1980, our focus on long run partisanship trends necessitates estimating vote propensities in the Michigan data for every month. In particular, we use the following methodology to predict the probability an individual in the Michigan survey votes for the Republican candidate in Presidential elections from 1996 to 2016.[2] The first step in this methodology is to standardize the available demographic information in the Michigan survey, the CCES, and the Roper exit poll data. There are seven characteristics

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[2]While the Roper exit polling data exists for 1992, it does not contain information on whether an individual is married or whether an individual has children. These are both important predictors, so we do not evaluate the 1992 election.

contained in all three data sets that we utilize: race, age, marital status, education level, gender, income, and whether the individual has children. There are some slight differences in categorization of some of the variables across the three data sets. For example, income categories are finer in the CCES and Michigan data relative to the Roper exit poll data. We standardize all variables to have the same categorization across all three data sets.

We then estimate the effect of these demographics on Republican vote propensity in the CCES and exit poll data using a maximum likelihood Probit estimation. More specifically, we estimate the following likelihood function for voting for a Republican:

$$L = \prod_{i=1}^{n} [\Phi(\beta'\mathbf{x})]^{y_i} * [1 - \Phi(\beta'\mathbf{x})]^{1-y_i}$$

where the probability of voting for the Republican candidate ($Y = 1$) follows the normal distribution:

$$Prob(Y = 1) = \Phi(\beta'\mathbf{x})$$

The set of covariates $\mathbf{x}$ include the state in which the individual lives, race, age, marital status, education level, gender, income, and whether the individual has children. In the estimation, we include only individuals voting for either the Republican or Democratic candidate, and we conduct the estimation for each election separately. We have data from the CCES for 2008, 2012, and 2016; we have data from the exit poll data for 1996, 2000, 2004, 2008, and 2012.

The results are reported in Appendix Table 1 of the online appendix. Race is the most powerful predictor, followed by either marital status or age depending on the exact election and data set.

Our methodology uses estimates of the coefficient vector β from the Probit estimation to project Republican voting propensity for individuals in the Michigan survey. This is possible because the Michigan data set contains the exact same covariates $\mathbf{x}$ used in the Probit estimation conducted with CCES and exit poll data. This produces a Republican voting propensity for each individual in the Michigan survey, and for each election.

In Appendix Table 2 in the online appendix, we compare our estimated vote propensities to actual measures of partisan affiliation when we have the latter measure available in the Michigan

survey. For the 2008, 2012, and 2016 election, our estimated vote propensities for the Republican candidate are 10 to 12 percentage points higher for self-identified Republicans versus Democrats. Self-identified independents fall in between.

The final Republican vote propensity variable we use in the Michigan data is based on the 1996 exit poll for 1995 through 1998, the 2000 exit poll projection for individuals from 1999 to 2002, the 2004 exit poll projection for individuals from 2003 to 2006, the 2008 CCES projection for individuals from 2007 to 2010, the 2012 CCES projection for individuals from 2011 to 2014, and the 2016 CCES projection for individuals from 2015 to 2017.

1.3 Measuring economic expectations and spending in survey data

The Michigan Survey is widely cited in the financial press as a measure of consumer economic expectations. The main reported results from the Michigan Survey are the index of consumer sentiment (ICS), the index of consumer expectations (ICE), and index of current economic conditions (CEC). The first is a slightly adjusted average of the latter two. Our main measure of consumer expectations is the ICE. The ICE is a slightly adjusted average of answers to the following three questions:

First, "Now looking ahead–do you think that a year from now you (and your family living there) will be better off financially, or worse off, or just about the same as now?" The answers are coded in the data as 1 for better off, 3 for the same, and 5 for worse off. We refer to this as the "my financial situation, 1 year" question, which is coded in the Michigan survey as PEXP.

The second question is: "Now turning to business conditions in the country as a whole–do you think that during the next twelve months we'll have good times financially, or bad times, or what?" The answers are coded as 1 for good times, 2 for good times with qualifications, 3 for no opinion, 4 for bad with qualifications, and 5 for bad times. We refer to this question as the "Country business conditions, 12 months" question, which is coded in the Michigan Survey as BUS12.

The third question is the one mentioned in the introduction: 'Looking ahead, which would you say is more likely that in the country as a whole well have continuous good times during the next 5 years or so, or that we will have periods of widespread unemployment or depression or what?" The answers are coded exactly the same as the 12 months question. We refer to this question as the "Country business conditions, 5 years" question, which is coded in the Michigan Survey as BUS5.

The ICE is the following average of these three questions:

$$ICE = \frac{PEXP + BUS12 + BUS5}{4.1134} + 2.0$$

For ease of interpretation, we re-scale all four of these variables to be mean zero and standard deviation one for the entire 2000 to 2017 sample. We also invert the ordering so that higher numbers are associated with more optimistic assessments.

There are four other questions from the Michigan Survey we utilize in the analysis below. The Current Economic Conditions index is a slightly adjusted average of the answer to two different questions meant to capture how people feel about the current economy. The first is: "We are interested in how people are getting along financially these days. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?" The second is: "About the big things people buy for their homes–such as furniture, a refrigerator, stove, television, and things like that. Generally speaking, do you think now is a good time or a bad time for people to buy major household items?" The latter question is a component of the CEC, and it also serves as an independent measure of household spending views which we refer to as the "major household items" question.

The other household spending question relates to car purchases. It is: "Speaking now of the automobile market – do you think the next 12 months or so will be a good time or a bad time to buy a vehicle, such as a car, pickup, van, or sport utility vehicle?" We refer to this as the "car" question.

Finally, there is a question regarding views on government economic policy. This specific question is: "As to the economic policy of the government – I mean steps taken to fight inflation or unemployment – would you say the government is doing a good job, only fair, or a poor job?" We refer to this as the "government economic policy" question. As with the expectations variables, all four of these measures are re-scaled to be mean zero and standard deviation one for the entire sample. We also invert the ordering so that higher numbers are associated with more positive assessments.

The main measure of economic expectations in the Gallup data is the following question: "Right now, do you think that economic conditions in this country, as a whole, are getting better or getting

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worse?" The potential answers are "getting better," the same," or "getting worse." We utilize two other questions in the Gallup survey related to economic conditions. One is a measure of current conditions: "How would you rate economic conditions in this country today – as excellent, good, only fair, or poor?" The other is a measure of employer job growth: "Now thinking more generally about the company or business you work for, including all of its employees. Based on what you know or have seen, would you say that in general your company or employer is: hiring new people and expanding the size of its workforce? Not changing the size of its workforce? Or letting people go and reducing the size of its workforce?" Once again, the measures are re-scaled to be mean zero and standard deviation one for the entire sample, and we invert the ordering so that higher numbers are associated with more positive assessments.

The Gallup survey also contains measures of household spending, and we use two in particular. The first is a measure of non-durable household spending: "we'd like to ask you about your spending yesterday, not counting the purchase of a home, motor vehicle, or your normal household bills. How much money did you spend or charge yesterday on all other types of purchases you may have made, such as at a store, restaurant, gas station, online, or elsewhere?" The other question we utilize is: "At this time, are you cutting back on how much money you spend each week, or not?" For the latter measure, we invert the ordering to that higher numbers are associated with not cutting back, and we standardize the variable to be mean zero and standard deviation one.

1.4 Summary statistics

Table 1 presents summary statistics. For the Gallup data, which cover 2008 to 2017, the different sample sizes for each variable reflect the fact that different questions are asked in different surveys. Partisan affiliation is asked in most surveys, whereas questions on whether an individual is cutting back spending are only asked in a specific survey. For the Michigan data, the final sample includes all observations from 1995 to 2017 (where we are able to estimate Republican vote propensity given the availability of CCES and exit poll data), and any observation pre-1995 where the survey asked questions on partisan affiliation (which was asked in June 1980, January 1984, July 1984, January 1985, April 1985, and May 1985).

Auto sales data are available from 1998 to 2017. Credit card spending data are available from 2006 to 2017. For the county-level data sets, we provide summary statistics weighting by the

population in the county as of 2008. We do so because there are many counties in the United States with small populations.

The reported numbers on Republican partisan affiliation represent two-party averages – Independents are excluded. Across both the Michigan and Gallup survey, about 48% of individuals are classified as a Republican by this two-party measure. The average Republican vote propensity in the Michigan data is 48%.

2   Partisan Bias and Economic Expectations: Long Run

We begin with an analysis of partisan bias in economic expectations over the long run. To show the increasing effect of partisan bias on economic expectations, we compare the average outlook of individuals based on their partisan affiliation over time in Figure 1. For this figure, we exclude November, December, and January of Presidential election years to focus on the long-run partisan bias as opposed to the short-run effects right around elections. This figure uses data where partisan affiliation is measured from direct answers to partisan questions as opposed to estimation of partisan affiliation.

The left panel utilizes the Gallup data. During the George W. Bush administration, Democrats on average reported significantly lower economic expectations than Republicans, with the absolute value of the difference being 0.4. During the two Obama administrations, the ordering flips, with Republicans reporting more pessimistic economic expectations. The absolute value of the difference increases substantially during the two terms. During the Trump administration, the ordering once again flips, and the absolute value of the difference is greater than one standard deviation.

The right panel shows similar results in the Michigan data, although we are able to go back to the Carter and Reagan administrations given data availability.[3] The difference in economic expectations between Democrats and Republicans during the last year of the Carter administration is almost zero. The difference is quite large during the Reagan administration. The difference becomes larger from the George W. Bush administration through the second Obama administration, but it then jumps substantially during the Trump administration. In the Michigan data since February 2017, Republicans report economic expectations that are almost 1.5 standard deviations higher than

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[3]The administrations covered in the right panel of Figure 1 are determined by the months in which the Michigan survey asked partisan affiliation questions.

Democrats.

Table 2 reports estimates of a regression version of this figure. More specifically, the estimated γ^t from the following equation are reported in Table 2:

$$X_{it} = \sum \alpha_t + \sum \gamma^t * \alpha_t * Rep_{it} + \epsilon_{it}$$

where α_t are indicator variables for each Presidential administration and Rep_{it} is the party affiliation of survey respondent i during Presidential administration t. The estimates of γ^t provide us the difference in economic expectations between Republicans and Democrats during administration t.

In both the Gallup data (column 1) and the Michigan data (column 4), the gap between Republicans and Democrats in economic expectations has been growing substantially over time. For the Gallup data where we have large samples, we can reject the hypothesis that the size of the absolute difference is constant since the George W. Bush administration. In the Michigan data, we do not have the same statistical power. Nonetheless, we can reject the hypothesis that the absolute value of the difference in economic expectations between Republicans and Democrats was the same in the Trump administration and the previous administrations.

In column 6, we utilize the estimated Republican vote propensity in the Michigan survey instead of actual partisan affiliation. This allows us to expand the Michigan sample to obtain more precise long run estimates. As column 6 shows, the difference in economic expectations based on Republican vote propensity has been growing steadily over time. The one exception is the first George W. Bush administration, where the gap is also large. The largest gap in economic expectations using the Republican vote propensity measure is also during the Trump administration, and the magnitude is similar to using actual partisan affiliation.

In Figure 2, we utilize the Gallup data to show how important partisan affiliation is becoming in determining economic expectations. For each Presidential term, we estimate a univariate linear regression relating economic expectations to partisan affiliation. Figure 2 reports the R^2 from each regression. The explanatory power of partisan affiliation has increased by four times from the George W. Bush administration to the Trump administration.

Does the growth in partisan bias reflect the fact that Presidents increasingly cater to their base in terms of actual economic policy? One test of this hypothesis is to examine individuals living

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in the same county or zip code. The underlying assumption is that the economic circumstances of individuals living in the same county or zip code should be similarly affected by actions taken by the President. In columns 2 and 3 of Table 2, we show that inclusion of county by month or zip by month fixed effects has almost no effect on the partisan gap in economic expectations. For example, as shown in column 3, the inclusion of zip code by month fixed effects doubles the R^2, but has almost no effect on any of the estimates of partisan differences. Following the logic in Altonji et al. (2005) and Oster (2017), this suggests that the partisan bias we estimate is not due to omitted variable bias in exposure to differential economic policies due to who controls the White House. The inclusion of county by month fixed effects in the Michigan data also has a minimal effect on the estimated coefficients, despite boosting the R^2 considerably.[4]

3   Partisan Bias and Economic Expectations: Around Elections

Partisan bias in economic expectations has been rising over time, but what is the effect of this bias on actual household spending? The long run analysis in Section 2 is not well-suited to answer this question. Over the long run, household spending in more Republican versus Democrat areas may change for reasons completely unrelated to partisan bias. To more cleanly identify the spending effect of shifts in economic expectations due to partisan bias, we focus on changes in economic expectations right around Presidential elections.

3.1   Shifts around elections

Figure 3 presents the average economic expectations for Republicans and Democrats around the 2016 and 2008 Presidential elections. The results for the 2016 election are similar for both the Gallup and Michigan data. Prior to the election, there is almost no pre-trend in economic expectations among Republicans or Democrats. From November 2016 to January 2017, Republicans see a 1.5 standard deviation increase in their expectations, and Democrats see a 0.75 standard deviation decline in their expectations. We see a similar pattern for the 2008 election, with Democrats experiencing a relative increase in economic optimism following the election of Barack Obama.

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[4]The most detailed geographic measure in the Michigan data is county, and this information is only available from 2000 onward.

However, the relative shift in optimism is smaller and happens less quickly.[5]

How does the large relative shift in economic expectations based on partisanship around the 2008 and 2016 presidential elections compare to other elections? To answer this question, we estimate regressions for each year, where the year is centered on November. We call these "pseudo-years" as they run from June of one calendar year to May of the next calendar year (November being the sixth month of a "pseudo-year"). For example, the 2008 pseudo-year runs from June of 2008 to May of 2009. For each pseudo-year y, we estimate the following regression (where we exclude the subscript y for ease of exposition):

$$X_{im} = \sum_{m=June}^{m=May} \alpha^m * d_m + \gamma^0 * Rep_i + \sum_{m=June, m\neq Oct}^{m=May} \gamma^m * (d_m * Rep_i) + \nu_{im} \tag{1}$$

where d_m is an indicator variable for month m, $m = 0$ is the "omitted" month which is October, α^m represents month fixed effects, and γ^m are the coefficients of interest that measure the relative shift in economic expectations around the election for those who identify with the Republican party. We have a set of coefficients γ^m for each pseudo-year in the sample.

The left panel of Figure 4 shows estimates of these γ^m coefficients for each pseudo-year for the Gallup sample, which runs from 2008 to 2017. The right panel of Figure 4 shows the estimates using the Michigan data from 1995 to 2017. The key difference in the Michigan sample is that we utilize the estimated Republican vote propensity to measure partisan affiliation. For both panels, the election pseudo-year coefficients are shown with a bold line with a different pattern and different markers. To help illustrate statistical significance, we also plot the coefficients of γ^m for the non-election years, which we keep in gray thin lines with no markers. The coefficients γ^m should be interpreted as the relative shift in consumer expectations among Republicans around October of each year. The gray lines can be thought of as "placebo" tests; they reflect the relative change in economic expectations among Republicans but in non-election years.

As both panels of Figure 4 show, the size of the relative shift in economic expectations among Republicans in 2016 is unprecedented. In terms of magnitude, being affiliated with the Republican party leads to a two standard deviation relative increase in economic expectations from October

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[5]In Appendix Figure 2, we plot the same figure for the 1984 and 2012 elections. There is almost no relative change in economic expectations around the 1984 or 2012 elections.

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to December 2016. There is no evidence of a pre-trend, and the relative optimism endures to May 2017. The results for 2016 are almost identical for the Gallup and the Michigan data.

The 2000, 2008, and 2012 elections also appear to have an effect on relative shifts in economic expectations, but it is not obvious from Figure 4 whether they are statistically significant. Regardless of statistical significance, the shifts are significantly smaller in magnitude than that of the 2016 election. The 2008 election effect appears to be the second largest.

To test statistical significance in a regression framework, we estimate the following specification:

$$X_{iym} = \alpha_m + \alpha_m * Rep_{iym} + \alpha_y + \alpha_y * Rep_{iym} + \sum_{y=96,00,04,08,12,16} [\beta^y * Post_y]$$
$$+ \sum_{y=96,00,04,08,12,16} [\gamma^y * Post_y * Rep_{iym}] + \epsilon_{iym} \quad (2)$$

where X_{iym} is the measure of economic expectations, α_m are month of year indicator variables, α_y are pseudo-year indicators (i.e., June to May), and $Post_y$ is an indicator variable for November to May of pseudo year y. The coefficients of interest are the γ^y for each election year. The coefficients γ^y measure the differential change in outcome X during pseudo-year y for Republicans in the six months after each election. We interact the Republican measure with both year indicator variables and month of year indicator variables to control for any relative patterns in seasonality or annual trends. For the Gallup sample, Rep_{iym} is actual partisan affiliation as reported in the survey. For the Michigan sample, Rep_{iym} is the estimated vote propensity for the Republican candidate in the nearest election.

The coefficient estimates of β^y and γ^y are reported in Table 3. Economic magnitudes are easy to interpret as the left hand side variables all have a mean of zero and a standard deviation of one. As columns 1 through 3 show, there is a substantial relative shift in economic expectations for Republicans following the 2008, 2012, and 2016 election using the Gallup data. In terms of magnitudes, the shift is largest for the 2016 election, followed by 2008, and then 2012. The inclusion of zip code by month fixed effects has almost no effect on the coefficient estimates, despite a doubling of the R^2.

Columns 4 and 5 report estimates from the Michigan data set where we use the estimated Republican vote propensity as our measure of partisanship. Before the 2008 election, we see no

evidence of a partisan gap in economic expectations following the Presidential election. The effects for 2008, 2012, and 2016 are larger in the Michigan data set than in the Gallup data set. Further, the 2008 and 2012 effects are closer in size. As before, inclusion of county by month fixed effects significantly boosts the R^2 of the regression, but the coefficient estimates on partisanship are almost identical.[6]

3.2 Actual economic conditions?

One hypothesis is that a partisan truly is better off economically when the White House is controlled by the party she favors. In this case, it would not be accurate to call the relative change in economic optimism around an election a partisan "bias." The results above using zip code by month fixed effects are difficult to reconcile with this alternative hypothesis. The coefficient estimates of partisan bias are almost identical with and without the inclusion of zip code by month fixed effects. Under the relatively weak assumption that changes in the economy will affect individuals living in the same zip code similarly, it is difficult to argue that the opposite reactions of Republicans and Democrats living in the same zip code are due to actual economic conditions changing based on party affiliation.

We also evaluate this alternative hypothesis by examining answers to a question regarding whether an individual's employer is hiring or letting go of workers. More specifically, we report in Table 4 estimates of equation 2 where the left hand side variable is the employer hiring measure. As column 1 shows, there is strong partisan bias in the answer to this question, especially after the 2016 election. After the 2016 election, Democrats report that their employer is more likely to be letting go of workers (negative coefficient on the Post 2016 election indicator variable). Republicans are more likely to report that their employer is hiring workers (positive coefficient on the Republican x Post 2016 election indicator variable).

Further, the results are almost identical when including county by month or even zip code by month fixed effects. The zip code by month fixed effects boost the R^2 of the regression by more than five times, but the coefficient estimates remain almost identical. After the election of Donald Trump in 2016, a Democrat reports his employer is less likely to hire workers while a Republican living in

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[6]In Appendix Table 3 of the online appendix, we explore changes in the answers to other questions from the Gallup Michigan survey around elections, including evaluation of current economic conditions and government economic policy. We also split out the three components of the index of consumer expectations from the Michigan survey.

the same zip code reports his employer is boosting hiring. Under the assumption that people living in the same zip code tend to work for similar industries or employers, the Democrat and Republican answers cannot both be correct. These results lead us to the conclusion that the partisan bias effect we document is unrelated to actual economic conditions facing survey respondents, and are instead rooted in a bias toward the party they support.

In the online appendix (Appendix Figures 3 and 4), we examine county and state level data on transfers, tax rates, and personal income growth around the 2000 and 2008 elections. We find little evidence that counties or states supporting the winning candidate see a disproportionate improvement in any of these measures.

4 Does Partisan Bias Affect Household Spending?

The U.S. Presidential elections of 2008 and 2016 (and to a lesser degree 2012) led to large relative shifts in survey-based measures of economic optimism based on partisan affiliation. In this section, we examine whether these large relative shifts in economic optimism were accompanied by relative changes in household spending.

4.1 Survey data evidence

We begin our investigation of the effect of partisan bias on household spending by exploring answers to questions on spending in the Gallup and Michigan surveys. Figure 5 examines the answers to these questions by presenting coefficient estimates from equation 1, where we use the spending questions in the Gallup and Michigan survey as the left hand side variable.

The top two panels of Figure 5 report results for the Michigan questions on whether it is a good time to buy major household items or a car. In stark contrast to the evidence on economic expectations, the Michigan survey shows little evidence to support the view that Republicans witnessed a relative change in answers to spending questions after Presidential elections. This is particularly surprising given that these questions are in the same survey in which Republicans express optimism on future economic conditions. For example, Table 3 shows evidence that Republicans see a significant increase in economic optimism after November 2016; however, there is little evidence of a change in their views on whether it is a good time to buy a car or household items.

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The bottom two panels examine Gallup measures of household spending. Here we see an effect, especially for the 2016 election. For both the spending yesterday question and the question whether individuals are cutting back spending, Republicans see a relative increase in reported spending.

In Table 5, we examine the corresponding regressions for Figure 5. Columns 1 and 2 evaluate the Gallup question on total spending yesterday. Consistent with Figure 5, Republicans see a relative increase in their reported spending after the election of Donald Trump in 2016 of about 6%. However, there is no effect after the 2008 election. Recall that there was a sizable relative decline in economic expectations for Republicans after the 2008 election; there is no corresponding relative decline in spending. For the cutting back spending question, we see large effects after both the 2012 and 2016 election.[7] For both spending measures, the inclusion of zip code by month fixed effects does not affect the post 2016 election results.

The last two columns of Table 5 examine the Michigan survey questions. There does not appear to be a statistically reliable relative shift in spending among Republicans according to the Michigan measures for any of the elections. There is some evidence of a positive effect for Republicans after the 2016 election, but it is not statistically distinct from zero at a reasonable confidence level.

4.2 Administrative data evidence

A drawback to these survey questions is that they do not capture actual household spending. One obvious concern is that the same partisan bias that affects measures of economic expectations could also influence spending reported in a survey.

To measure the response of actual spending, we turn to data on auto purchases and credit card spending at the county level and zip code level. Moving from the individual level to the broader geography level requires us to construct geographic measures of partisan affiliation. At the county level, we measure partisanship of the county using the total votes for the Republican candidate in the county divided by the total votes for either the Republican or Democrat, which we refer to as the two-party vote share for the Republican. We measure this for the nearest election for each county.

We focus on new auto purchases and credit card spending around the 2016 and 2008 elections in Figure 6. To create this figure, we first index the spending measure to be 100 in October of

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[7]The cutting back spending question was first asked in 2009, so we do not have the estimate for the 2008 election.

the Presidential election year in question for each county. We then estimate for each month the following county-level cross-sectional regression:

$$spendingindexed_{cm} = \alpha^m + \gamma^m * RepVoteShare_c + \nu_{cm}$$

Observations in this regression are weighted by total population of the county. Using the estimates from this specification, we predict auto sales or credit card spending in each month around the election for $RepVoteShare_c = 0$ and $RepVoteShare_c = 1$. In this manner, we estimate the evolution of spending in a county where all voters vote for Democrat ("Democratic counties") and where all voters vote for the Republican ("Republican counties").

As Figure 6 shows, there is little evidence of a larger rise in auto purchases or credit card spending in counties that voted for Donald Trump in 2016. While there appears to be a larger Christmas shopping bump in November 2016 for Republican counties, the size of the November bump is almost identical in November 2015, which suggests that Republican areas consistently spend more in November, a result we confirm below. This null result is in stark contrast to the strong rise in optimism on the economy among those most likely to vote for Donald Trump, which is shown above in Figure 4 in Section 3. The strong relative rise in optimism among those living in more Republican counties does not appear to translate into higher auto purchases or credit card spending. We also do not see a noticeable relative change in auto purchases or credit card spending after the 2008 election, despite the large relative decline in economic optimism among Republicans.

In Figure 7, we estimate the county-level version of equation 1 from Section 3 above. More specifically, for each pseudo-year y, we estimate the following regression:

$$Ln(S_{cm}) = \sum_{m=June}^{m=May} \alpha^m * d_m + \gamma^0 * RepVoteShare_c + \sum_{m=June, m \neq Oct}^{m=May} \gamma^m * (d_m * RepVoteShare_c) + \nu_{cm}$$

(3)

where d_m is an indicator variable for month m, $m = 0$ is the "omitted" month which is October, α^m represents month fixed effects, and γ^m are the coefficients of interest that measure the relative shift in log spending ($Ln(S)$) around the election for counties with a higher vote share for the Republican candidate ($RepVoteShare$). Observations in these regressions are weighted by total population in

the county. We estimate equation 3 for both auto purchases and credit card spending. We only have data for credit card spending from 2006 onward, and so the analysis for credit card spending is focused only on the 2008, 2012, and 2016 elections.

There is little evidence in Figure 7 of a sharp change in spending patterns for Republican-leaning counties around any of the elections. If anything, there may be some evidence that auto spending actually rose more for Republican-leaning counties after the 2008 election. For credit card spending, Republican-leaning counties tend to see a stronger spike in spending every November and December, but there is no evidence that 2008 or 2016 were special relative to the non-election years.

In Table 6 we formally test the statistical significance of the patterns shown in Figures 6 and 7. More specifically, we estimate the following specification:

$$Ln(S_{cym}) = \alpha_m + \alpha_m * RepVoteShare_{cym} + \alpha_y + \alpha_y * RepVoteShare_{cym} + \sum_{y=00,04,08,12,16} [\beta^y * Post_y]$$

$$+ \sum_{y=00,04,08,12,16} [\gamma^y * Post_y * RepVoteShare_{cym}] + \epsilon_{cym} \quad (4)$$

where S_{cym} is either new auto purchases or credit card spending, α_m are month of year indicator variables, α_y are pseudo-year indicators (i.e., June to May), and $Post_y$ is an indicator variable for November to May of pseudo year y. As before, the coefficients of interest are the γ^y for each election year. The coefficients γ^y measure the differential change in log spending after the election for counties that more heavily favored the Republican candidate in the election in question. Observations in these regressions are weighted by total population in the county.

Before examining the spending measures, we begin in column 1 by estimating equation 4 using our measure of economic expectations from the Gallup data set averaged at the county-month level. We want to ensure that aggregating to the county-month level from the individual-month level does not reduce power significantly when it comes to relative movements in economic expectations. As column 1 shows, the relative shifts in economic optimism using county-month-level data with Republican vote share as the measure of partisanship leads to similar coefficient estimates as seen in the individual-month-level data (compare with column 1 of Table 3).

Yet despite this large relative shift in economic expectations based on partisan affiliation in Republican leaning counties, we see no relative change in auto purchases or credit card spending

in columns 2 and 3. The evidence does not support the view that changes in expectations driven by who wins the White House affects actual spending.

In Table 7, we estimate equation 4 at the zip code-month level. We do not have zip code-level vote shares; as a result, we use the Gallup data to measure partisanship at the zip-code level. These data are available only after 2007. For every year, we measure a zip code's partisan leaning using the fraction of individuals affiliated with the Republican party in the Gallup data divided by the total number of respondents in the Gallup data affiliating with either the Republican or Democratic Party. Zip codes in these regressions are weighted by the total number of respondents in the Gallup data.

The results at the zip code level are broadly similar. First, there are similar relative shifts in economic optimism around elections based on the partisan leaning of the zip code. Second, there is no noticeable effect on auto purchases or credit card spending. For example, a zip code in which only Republicans live witness a 1.3 standard deviation increase in economic optimism after the election of Donald Trump in 2016, but if anything new auto purchases and credit card spending are reduced in the six months after the election.

As a final note, one potential explanation for the lack of an effect on actual spending is borrowing constraints. Perhaps those supporting the winner of the Presidential election want to increase consumption, but they cannot obtain financing. While this is a possibility, recall that there is a decline in economic expectations for those supporting the losing candidate in Presidential elections, and we do not see a relative decline in spending for this group. It is difficult for borrowing constraints to explain why those becoming more pessimistic do not decrease spending–borrowing constraints do not prevent an individual from reducing purchases.

4.3 The 2006 to 2007 decline in house prices

The analysis above suggests that shifts in economic expectations driven by Presidential election outcomes do not have strong effects on consumption. But this raises a concern. Do shifts in economic expectations as measured in surveys ever correlate with actual household spending? Perhaps these shifts in expectations are always random noise with little relevance for actual economic outcomes?

We already have evidence from Barsky and Sims (2012) that "unexplained movements in the responses to forward-looking questions from the Michigan Survey of Consumers have powerful

predictive implications for the future paths of macroeconomic variables." In aggregate analysis, movements in economic expectations as measured in the Michigan survey are related to future income and consumption growth. But perhaps the cross-sectional variation in survey responses is rarely if ever correlated with cross-sectional changes in household spending?

To examine this question, we focus on an alternative economic shock: the initial decline in aggregate house prices from 2006 to 2007 in the United States. This shock offers a promising source of cross-sectional variation across U.S. counties in exposure to a fundamental shock, and it therefore serves as a useful counter-example where we should expect to find an effect on both economic expectations and household spending. More specifically, there is a great deal of variation across U.S. counties in the degree to which house prices fell during the 2006 to 2009 period (e.g., Mian et al. (2013)). Also, total employment declined more in counties seeing a sharper decline in house prices (e.g., Mian and Sufi (2014)), and there are long-lasting effects on income for the individuals living in these counties (Yagan (2016)). Finally, there is a strong positive correlation across counties between house price growth from 2006 to 2007 and house price growth from 2007 to 2008. In hindsight, we know individuals living in counties where house prices began to fall in 2007 experienced a sharp decline in subsequent income and employment growth.

So how did their expectations react? We cannot measure the decline in house prices for a given individual in the Michigan survey, and so we conduct all of the analysis in this section at the county level.[8] We measure economic expectations in the pre-period from 2004 to 2006. This was a period of economic expansion when house prices rose nationally. Beginning in 2007, house prices began to fall in the United States. Further, they began to fall quite dramatically in some counties. We measure economic expectations in the post period using survey responses of a county in 2007. We purposefully do not include 2008 because it was a year of dramatic national economic events and it was the year that Barack Obama became President. Both of these factors would likely affect economic expectations for reasons unrelated to house price growth. As a result, 2007 is a clean year for measuring cross-sectional variation across counties in exposure to house price declines during the Great Recession. Given the smaller samples in the Michigan survey, we only keep counties that have at least five individuals surveyed both in the pre- and post-period.

As the left panel shows, counties seeing a relative decline in house prices also report a relative

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[8]We cannot use the Gallup data set for this alternative exercise because it is only available starting in 2008.

decline in the index of consumer expectations. There is substantial variation across counties in house price growth from 2006 to 2007, with some counties seeing declines of 20 to 30 percent. Individuals living in those counties report a more pessimistic economic outlook. As already mentioned, these individuals did in fact experience a relatively worse recession after 2007. In this case, survey respondents changed their economic expectations in a predictable way given the fundamental shock they received.

Further, as the right panel shows, auto purchase growth from 2006 to 2007 in a county is strongly correlated with house price growth from 2006 to 2007 in a county. So in the case of the house price growth shock, we see that variation across counties in a fundamental shock to economic prospects is correlated with the change in economic expectations in the county. And this variation is also correlated with actual spending.

In Table 8, we show coefficients from univariate county-level regressions to confirm the robustness of the patterns shown in Figure 8. In the regressions, we keep all counties where we have at least one survey respondent in the pre- and post-periods. We weight each county in all regressions with the number of survey respondents to the Michigan survey in the county.

As column 1 shows, the change in economic expectations and house price growth in a county from 2006 to 2007 are positively correlated. Columns 2, 4, 6, and 8 show that all of our measures of household spending are also correlated with the underlying house price growth shock. Columns 3, 5, 7 and 9 show that these reduced form correlations are strong enough to generate a correlation between our spending growth measures from 2006 to 2007 and the change in economic expectations as recorded in the Michigan survey. When there is a true shock to economic fundamentals, economic expectations and actual household spending react as would be predicted in most economic models.

5   Comparison with Recent Research

In a study made public subsequent to the original version of this study, Benhabib and Spiegel (2017) use an alternative political measure to capture changes in economic expectations related to political events. In particular, their study utilizes state-level data from 2004 to 2016, and it constructs a variable for each state-quarter which is the fraction of U.S. Congressional delegates from the state that is from the same party as the sitting President, which the authors call *congpres*.

The primary measure of economic expectations in their study is the country business conditions in 5 years question from the Michigan survey ($BUS5$).

The study by Benhabib and Spiegel (2017) employs a two-stage least squares framework in a state-quarter panel in which they first regress $BUS5$ on *congpres*, where the specification includes state fixed effects.[9] The framework then regresses year over year GDP growth in a state on the predicted value of $BUS5$, again including state fixed effects. In the specification with year indicator variables and where standard errors are clustered by state, the methodology finds a positive effect of instrumented changes in expectations on a state's GDP that is statistically distinct from zero at the 5.6% confidence level.[10] While the positive effect is robust to a number of tests and sample restrictions, the estimate becomes smaller and statistically insignificant if the specification drops small GDP states or outliers.[11]

There are four key differences between the empirical strategy in this study and that of Benhabib and Spiegel (2017). First, all of our analysis is at the individual, zip, or county level; it is at the state-level in Benhabib and Spiegel (2017). Second, we examine the effects on household spending; Benhabib and Spiegel (2017) focus primarily on effects on state GDP. Third, our empirical strategy uses the Republican vote share in the nearest Presidential election as an instrument for changes in sentiment; Benhabib and Spiegel (2017) use the *congpres* variable described above. Finally, we examine the shock to expectations driven by partisan bias immediately after elections. This latter point is a crucial difference, as we explain below.

In the appendix, we compare the Benhabib and Spiegel (2017) empirical strategy to the one presented here.[12] In Appendix Figure 5, we show that shocks to the Benhabib and Spiegel (2017) instrument are concentrated in the six quarters after the national elections of 2004, 2006, 2008, 2010, 2012, and 2014, with the biggest shock being in 2008. In Appendix Figure 6, we show that that the shock to *congpres* after the 2008 election is strongly negatively correlated with the Republican vote share in 2008 at the state level; for this year, the two instruments are correlated across states.

However, as we show in Appendix Table 4, shocks to the *congpres* instrument are not a statis-

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[9]More specifically, Benhabib and Spiegel (2017) use the share of respondents answering 1 or 2 to the $BUS5$ question.

[10]Please see column 6 of Table 3 of the study dated October 2017.

[11]Please see column 6 of Table 4 of the study dated October 2017.

[12]We are grateful to Mark Spiegel for making the data public and sending us the code generating the tables.

tically robust predictor of the change in economic expectations around elections. For each national election, we estimate annual first difference specifications of the following form:

$$\Delta BUS5_s = \alpha + \beta * \Delta congpres_s + \epsilon_s$$

As Appendix Table 4 shows, the coefficient β is not statistically significant for any election except for 2014. This makes it difficult to compare our results to those in Benhabib and Spiegel (2017), because the *congpres* instrument does not appear to generate a shock to expectations in the year after the election that is similar to the Republican vote share instrument that we use in this study. As a comparison, we also report in Appendix Table 4 the same specification using the Republican vote share in the state. Consistent with the results above, the Republican vote share in 2008 predicts a decline in $BUS5$ from the third quarter of 2008 to the third quarter of 2009.

A contemporaneous study by Gillitzer and Prasad (2016) examines how shifts in economic expectations due to Federal elections in Australia affect household spending.[13] They examine four elections in Australia that led to a change of government in 1983, 1996, 2007, and 2013. They also find large shifts in economic expectations around these elections based on the party supported by the individual in the survey (see in particular their Figure 4). They find more robust results of an effect of shifts in economic expectations around elections on survey measures of spending on automobiles or major household items (see in particular their Figure 7 and Figure 8).

To measure actual spending, Gillitzer and Prasad (2016) use postcode-quarterly level auto purchases for the 2007 and 2013 elections in Australia. The short-run evidence they find using actual auto purchase data is similar to the findings presented in this study. In particular, for both Australian elections, there is no relative difference in the evolution of auto sales from the two quarters before the election to two quarters after the election based on the vote share of the postal code.[14] As in our analysis, Gillitzer and Prasad (2016) find a large and immediate effect of elections on economic expectations, but no effect on actual auto purchases in the six months following the election.

For both the 2007 and 2013 election, Gillitzer and Prasad (2016) find longer run effects on

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[13]We refer specifically to the August 2016 version of this study.

[14]See in particular their Figure 10. Gillitzer and Prasad (2016) do not present regression estimates and statistical significance for the estimates in their Figure 10, but based on the figure there does not appear to be a short-run effect from two quarters before the election to two quarters after the election.

auto purchases that begin three quarters after the election. For the 2007 election, they find the strongest relative growth in auto sales among those supporting the Australian Liberal Party in the 2010 to 2012 period. Individuals supporting the ALP see a sharp rise in economic expectations immediately after the election in 2007 and the strongest effect on auto purchases is from 2010 to 2012. One concern is that such longer run effects shown in Gillitzer and Prasad (2016) could be driven by alternative factors rather than a reaction to the Federal election outcome. In Figure 6, we do not find evidence of a relative change in auto sales for those more likely to support the winning candidate one year after each presidential election for which we have data. For the 2016 election, we do not see evidence of a relative shift in auto purchases or credit card spending through October 2017 for counties most heavily voting for Donald Trump in November 2016.

6 Conclusion

The well-documented rise in political polarization among the U.S. electorate has been accompanied by a substantial increase in the effect of partisan bias on survey-based measures of economic expectations. However, the shift in survey-based measures of economic expectations induced by partisan bias does not appear to affect household spending. For example, despite the enormous relative increase in economic optimism among Trump supporters after November 2016, there is little evidence in administrative data sets of a relative increase in spending since the election.

The findings presented here are most consistent with the lessons from political science and social psychology as illustrated by Iyengar et al. (2012), Mason (2013), and Mason (2015). For example, Mason (2015) writes, "... a partisan behaves more like a sports fan than like a banker choosing an investment ... the connection between partisan and party is an emotional and social one, as well as a logical one." Individuals feel elation after their "team" wins the White House. They report in surveys that the economy will improve. However, given the lack of a spending response, the answers to survey questions appear to reflect cheerleading rather than a true shift in actual economic expectations.

Two recent studies are particularly relevant for understanding the failure of shifts in economic expectations to affect administrative measures of spending. Both Bullock et al. (2015) and Prior et al. (2015) find evidence that partisan bias in views on current economic conditions can be reduced

considerably by providing survey respondents monetary incentives for providing more accurate answers. Prior et al. (2015) conclude based on this finding that "many partisans interpret factual questions about economic conditions as opinion questions, unless motivated to see them otherwise. Typical survey conditions thus reveal a mix of what partisans know about the economy, and what they would like to be true." It may be the case that monetary incentives would yield more accurate answers to questions on economic expectations that would perhaps more strongly correlate with current spending. Testing such a hypothesis would be challenging, as one would need a measure of "accuracy" in predicting future economic activity.

Regardless, our results suggest that researchers and practitioners should exercise caution in using survey-based measures of economic expectations as true measures of an individual's actual economic expectations. Partisan bias is increasingly polluting these measures. Our results also suggest that perhaps measures of economic expectations in the aggregate are becoming less powerful in predicting consumption or income growth given the rise of partisan bias. This is a fruitful avenue for future research in our view.

A final question raised by our findings is: does reported partisan bias in economic expectations matter if it does not affect actual household spending? McGrath (2016) writes, "... although partisans report biased perceptions of the economy, their economic behavior reflects an unbiased perception of the state of the world." Although the increasing partisan bias in economic expectations may not affect spending, this increased partisan bias may be correlated with other important outcomes, such as voting. For example, it could be that a rise in pessimism about the overall economy in survey questions predicts who an individual votes for in the next Presidential election, despite the fact that such pessimism does not affect the individual's actual spending. More broadly, we may be able to predict voting patterns or other behavior based on how individuals answer survey questions better than using economic measures such as income growth or employment status. We look forward to future research exploring this idea.

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Figure 1
Average Economic Expectations by Partisan Affiliation, by Presidential Term

This figure presents the average economic expectations in the Gallup data set (left panel) and Michigan data set (right panel) by partisan affiliation and by Presidential term. Party affiliation is measured directly from the individual's response to the survey. We also report the absolute value of the difference between the two. For Presidential election years, November, December, and January are excluded.
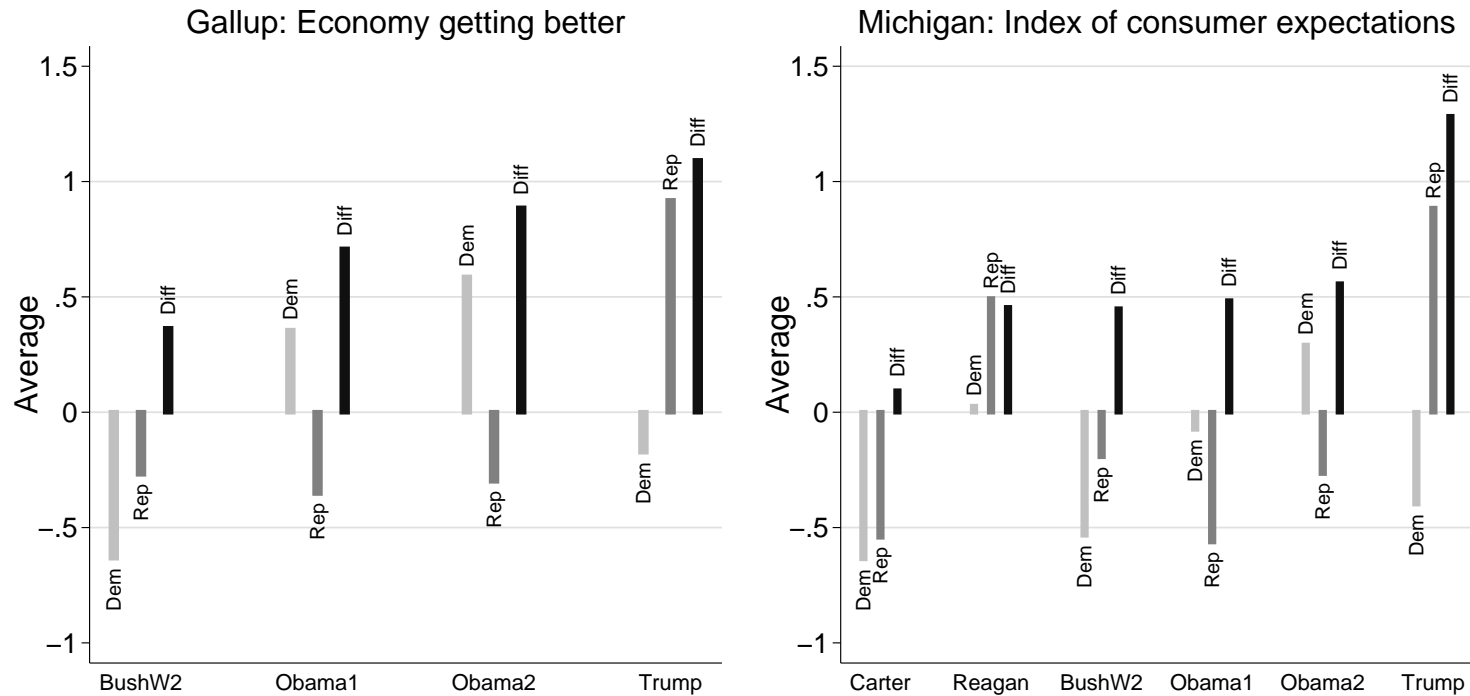
Figure 2
Power of Party Affiliation in Explaining Economic Expectations

This figure presents the R^2 from univariate regressions relating economic expectations of an individual as measured from Gallup to an indicator variable for whether the individual is affiliated with the Republican party. We estimate the regression for each Presidential term separately, and report the R^2 below. For Presidential election years, November, December, and January are excluded.
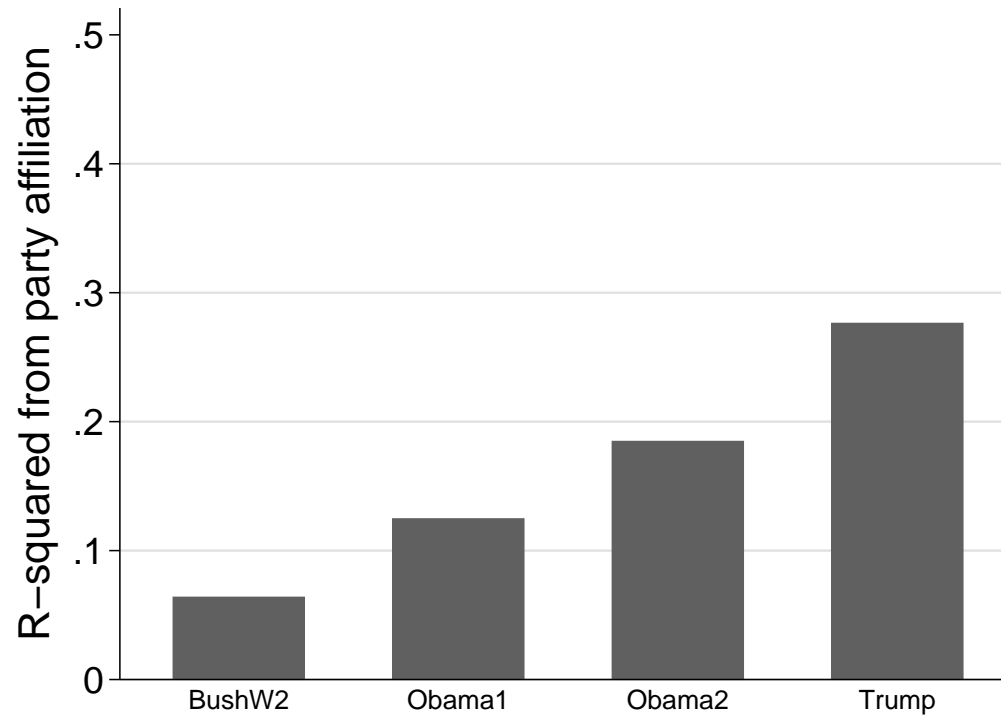
Figure 3
**Economic Expectations around the 2008 and 2016 Elections, by Partisan Affiliation**

This figure presents the average economic expectations in the Gallup data set (left panels) and Michigan data set (right panels) by partisan affiliation around the 2008 (bottom panels) and 2016 (top panels) elections.
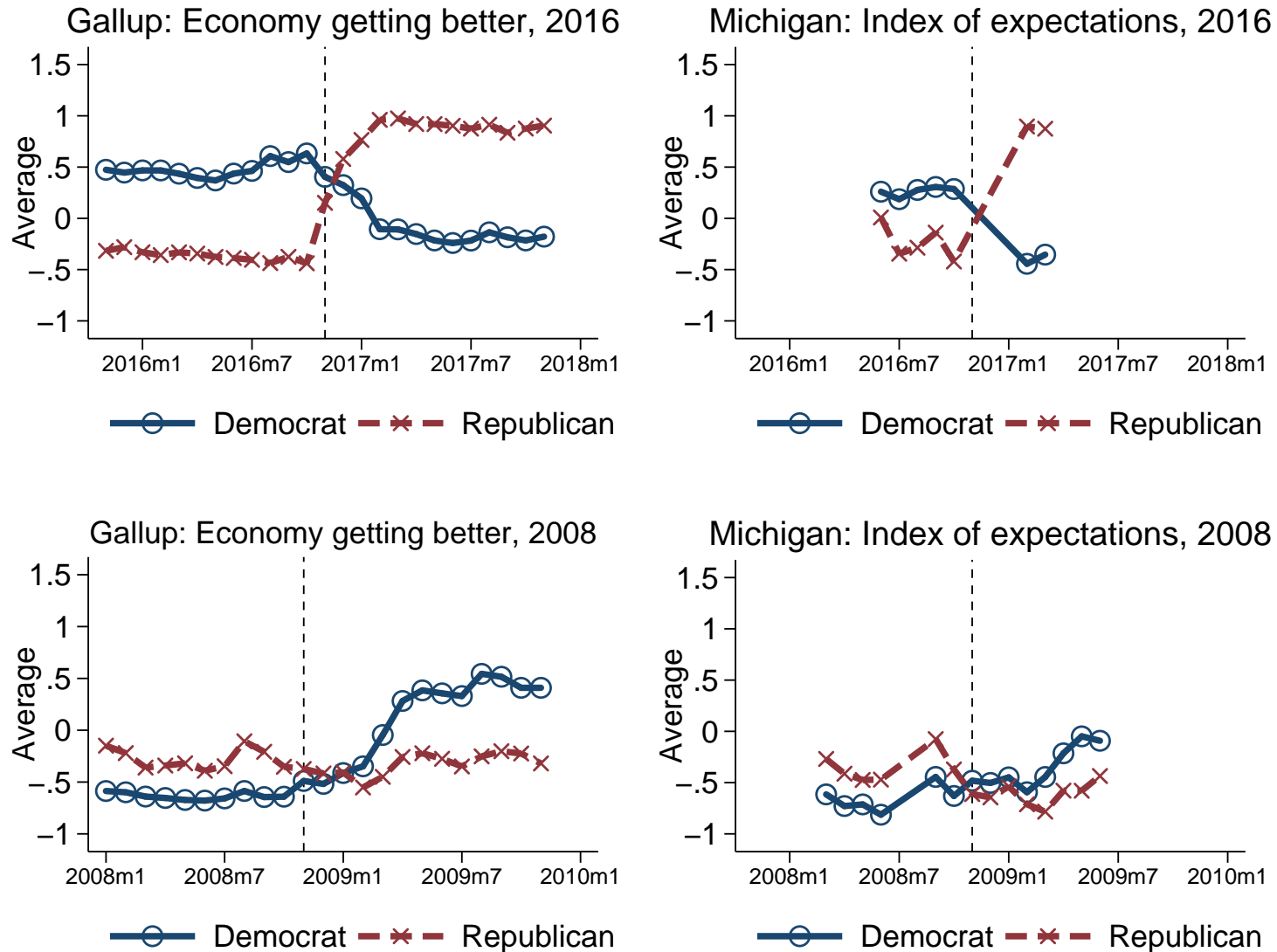
Figure 4
Partisan Shift in Economic Expectations around Presidential Elections

This figure presents coefficient estimates of γ^m for each pseudo year y (June to May) from the following specification:

$$X_{im} = \sum_{m=June}^{m=May} \alpha^m * d_m + \gamma^0 * Rep_{im} + \sum_{m=June, m \neq Oct}^{m=May} \gamma^m * (d_m * Rep_{im}) + \nu_{im}$$

For the Gallup data (left panel), Rep_{im} is actual party affiliation; for the Michigan data (right panel), Rep_{im} is the estimated propensity to vote for the Republican in the nearest Presidential election. The coefficients plotted can be interpreted as the relative change in economic expectations for those most likely to affiliate with the Republican party around each Presidential election. The thin gray lines plot γ^m for non-election years.
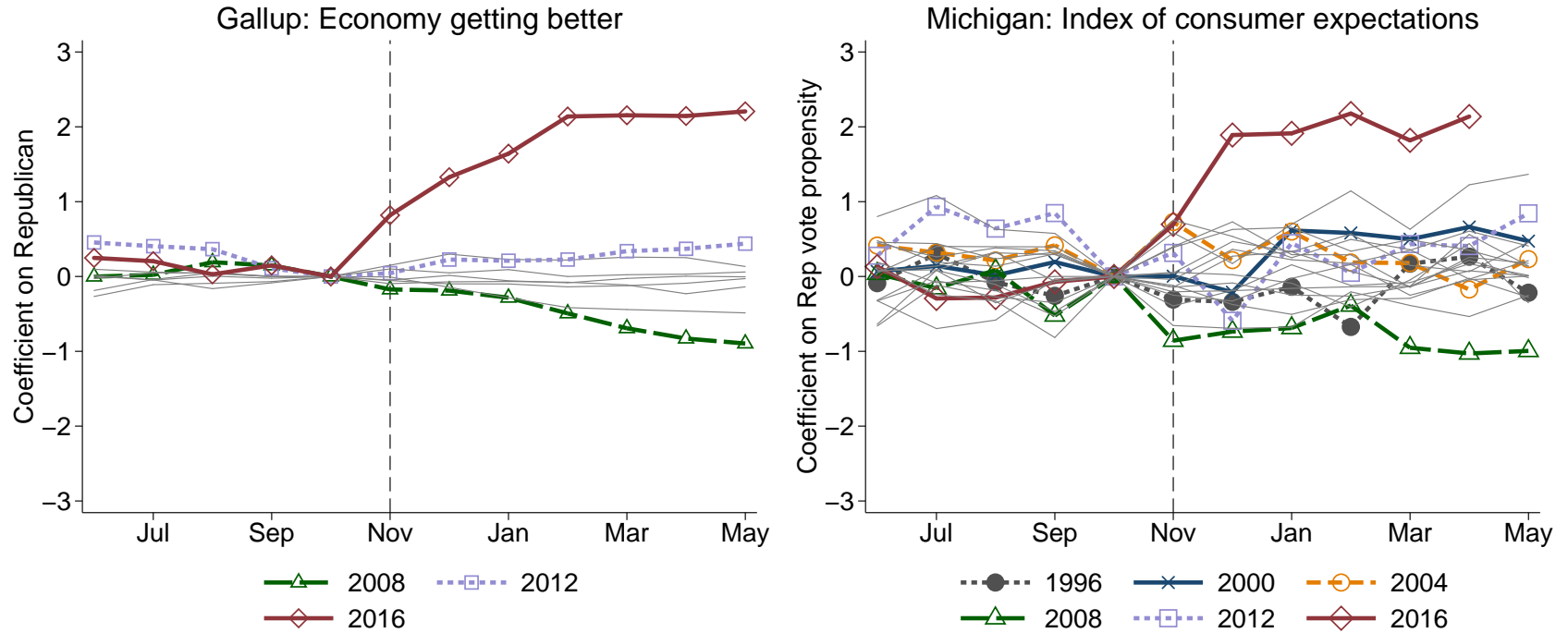
Figure 5
Survey Measures of Spending around Elections

This figure presents coefficient estimates of γ^m for each pseudo year y (June to May) for the exact same specification described in Figure 4, but replacing the left hand side variable with answers to questions on whether it a good time to buy major household items or a car in Michigan survey (top panels) and questions on past and future spending behaviors in Gallup survey (bottom panels). For the Gallup data (bottom panels), Rep_i is actual party affiliation; for the Michigan data (top panels), Rep_i is the estimated propensity to vote for the Republican in the nearest Presidential election. The thin gray lines plot γ^m for non-election years.
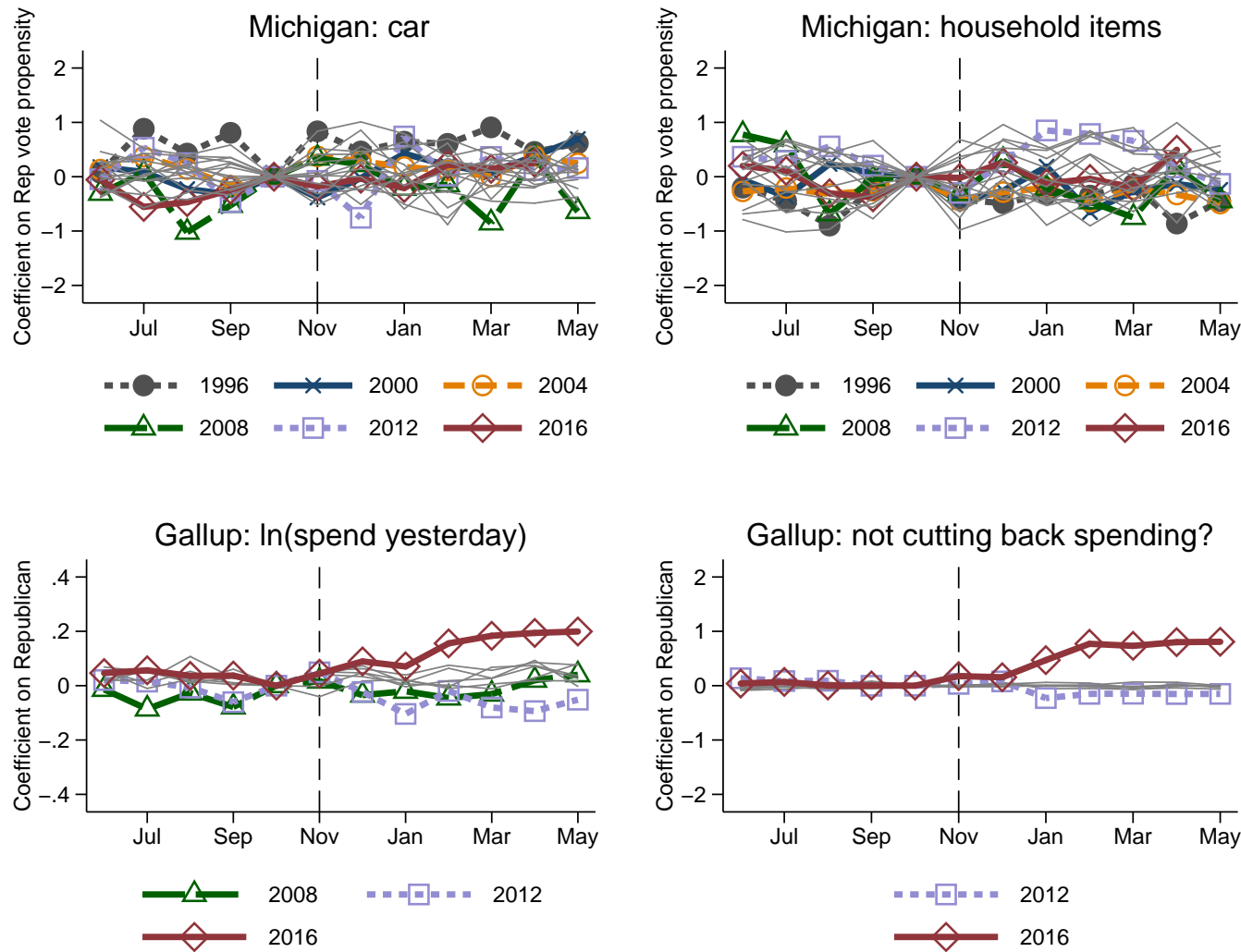
Figure 6
Auto Purchases and Credit Card Spending around 2008 and 2016 Elections

This figure presents spending in counties around Presidential elections. To construct the plots below, we first index auto sales and credit card spending in a county to be 100 in October prior to the election, and then estimate the following regression for each month around the election:

$$spendingindexed_{cm} = \alpha^m + \gamma^m * RepVoteShare_c + \nu_{cm}$$

Where $RepVoteShare_c$ is the two-party share voting for the Republican candidate in the county. The plotted lines below represent predicted values for $RepVoteShare_c = 0$ (Democratic county) and $RepVoteShare_c = 1$ (Republican county) given this estimation.
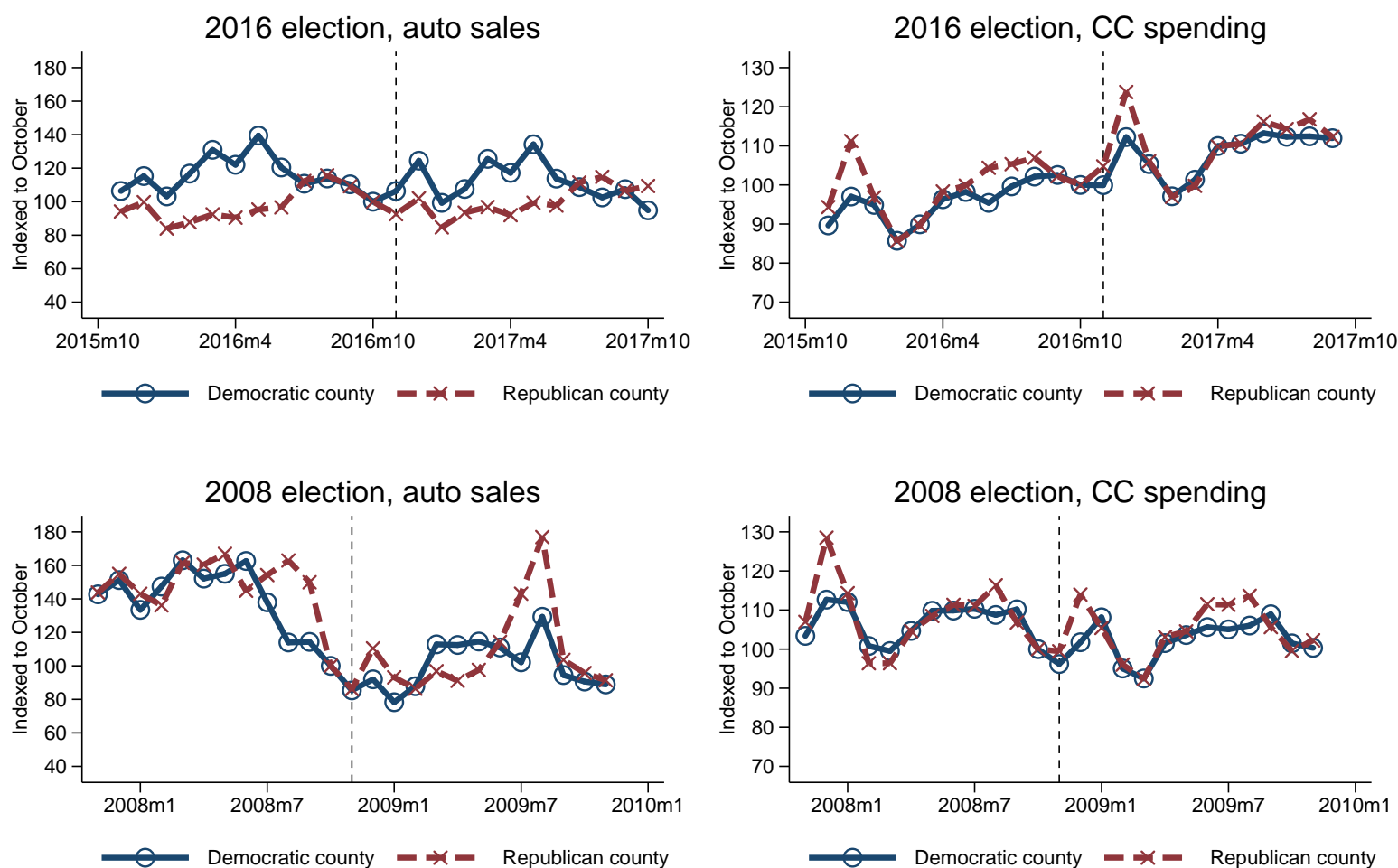
Figure 7
Republican Vote Propensity, Auto Purchases, and Credit Card Spending

This figure presents coefficient estimates of γ^m for each pseudo year y (June to May) from the following specification:

$$Ln(S_{cm}) = \sum_{m=June}^{m=May} \alpha^m * d_m + \gamma^0 * RepVoteShare_c + \sum_{m=June,m\neq Oct}^{m=May} \gamma^m * (d_m * RepVoteShare_c) + \nu_{cm}$$

The coefficients plotted can be interpreted as the relative change in spending for those counties most strongly supporting the Republican candidate around each Presidential election. The thin gray lines plot γ^m for non-election years, where $RepVoteShare_c$ is based on nearest election year.
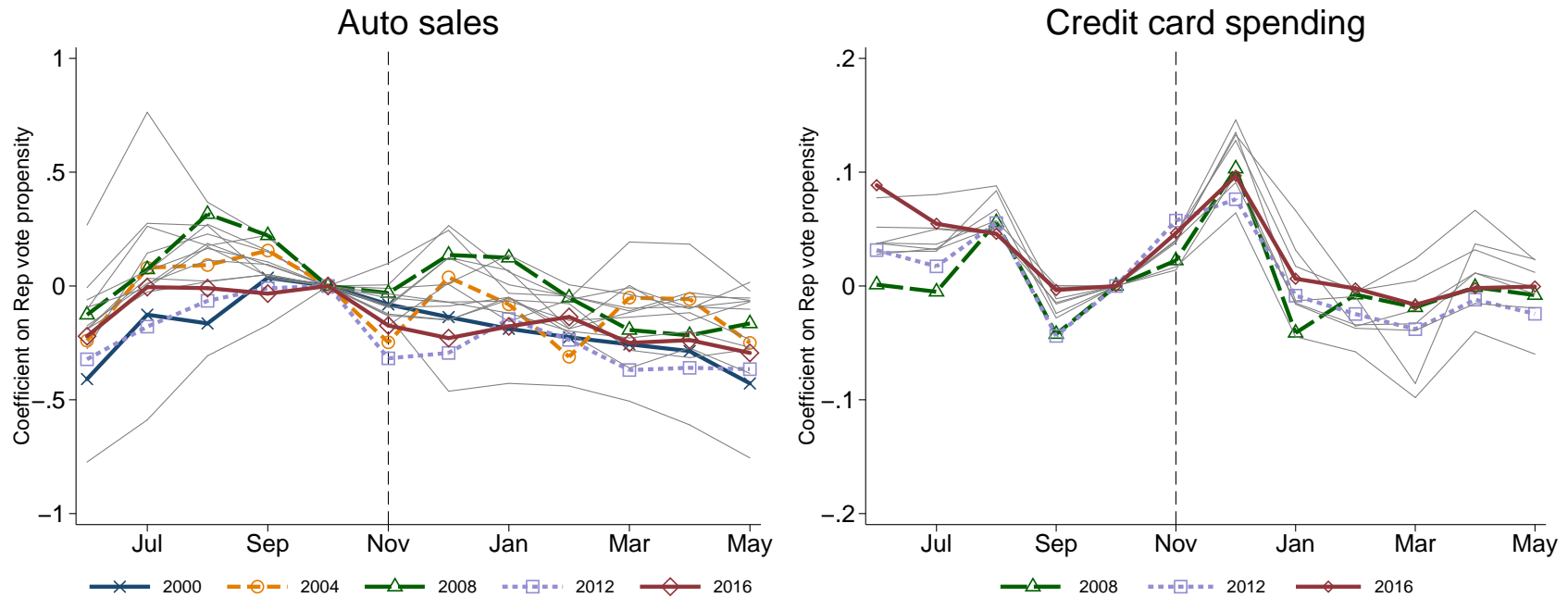
Figure 8
Comparing 2016 Election to 2007 Decline in House Prices

This figure presents scatter-plots of county-level data relating the change in economic expectations and auto sales to an underlying shock. The underlying shock in the top two panels is the election of Donald Trump in 2016, and the underlying shock in the bottom two panels is the decline in house prices from 2006 to 2007. Only counties with at least 5 surveyed respondents in the pre- and post-shock period are included, and counties are weighted by the total number of individuals surveyed.

Consumer expectations and House prices

Auto sales and House prices
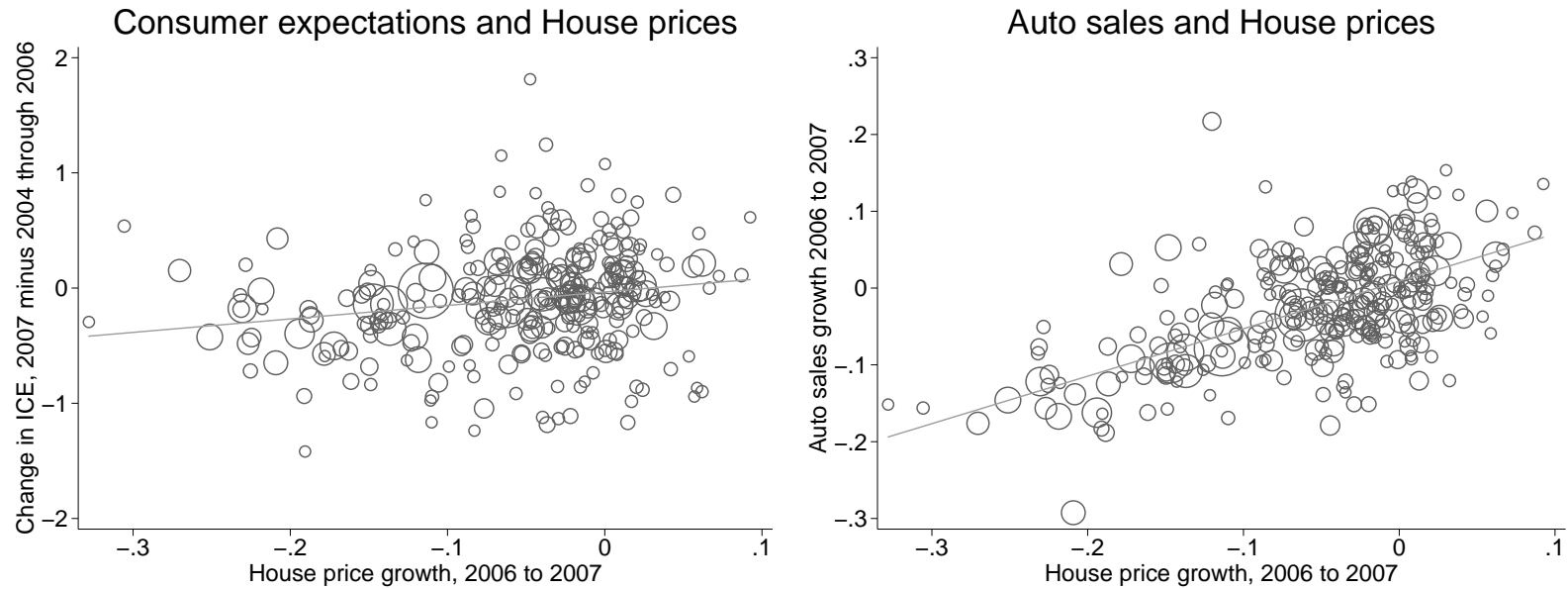
Table 1
Summary Statistics

This table presents summary statistics for the individual-level and county-month-level data sets used in the analysis. The Gallup sample is from January 2008 to December 2017. The Michigan sample is from January 1995 to April 2017, with a few months available in 1980, 1984, and 1985. The auto purchases data is available from January 1998 to October 2017. The credit card spending data is available from January 2006 to September 2017.

|	Obs	Mean	SD	P10	P90
Individual level - Gallup					
National economy getting better	1,292,533	0.00	1.00	-0.77	1.35
Spending yesterday, USD	1,563,899	84.66	298.26	0.00	200.00
Not cutting back spending	331,763	0.00	1.00	-0.81	1.24
Republican partisan affiliation (2-party)	2,607,880	0.49	0.50	0.00	1.00
Individual level - Michigan					
Index of consumer expectations	136,470	-0.00	1.00	-1.16	1.45
Good time to buy major items	129,425	0.00	1.00	-1.84	0.58
Good time to buy car	128,931	0.00	1.00	-1.55	0.67
Republican partisan affiliation (2-party)	18,325	0.47	0.50	0.00	1.00
Individual republican vote propensity (2-party)	93,332	0.48	0.19	0.21	0.71
County-month level (weighted by population)					
Auto purchases	663,129	4,954.17	9,393.84	102.00	12,676.00
Credit card spending (millions USD)	401,100	392.41	711.11	5.84	1,033.71
Republican vote share, nearest election	664,694	0.49	0.15	0.29	0.68

Table 2
Partisan Bias in Economic Expectations, by Presidential Term

This table presents estimates of economic expectations by partisan affiliation by Presidential administration (t). We report γ^t from the following specification:

$$X_{it} = \sum \alpha_t + \sum \gamma^t * \alpha_t * Rep_{it} + \epsilon_{it}$$

where α_t are indicator variables for each Presidential administration. For the Gallup data, Rep_{it} is actual party affiliation; for the Michigan data, Rep_{it} is actual party affiliation in columns 4 and 5, and the estimated propensity to vote for the Republican in the nearest Presidential election in columns 6 and 7. For Presidential election years, November, December, and January are excluded.

	Gallup: Economy getting better			Michigan: Index of consumer expectations			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Republican measure							
× Carter				0.093			
				(0.080)			
× Reagan				0.455***			
				(0.049)			
× Clinton 2						0.486***	0.353**
						(0.040)	(0.123)
× Bush W 1						0.905***	0.980***
						(0.039)	(0.045)
× Bush W 2	0.364***	0.373***	0.380***	0.449***	0.479***	0.464***	0.467***
	(0.005)	(0.005)	(0.006)	(0.030)	(0.041)	(0.039)	(0.045)
× Obama 1	-0.708***	-0.700***	-0.709***	-0.484***	-0.524***	-0.869***	-0.793***
	(0.002)	(0.003)	(0.003)	(0.024)	(0.035)	(0.038)	(0.044)
× Obama 2	-0.886***	-0.871***	-0.872***	-0.557***	-0.579***	-1.062***	-0.913***
	(0.004)	(0.004)	(0.004)	(0.032)	(0.044)	(0.038)	(0.043)
× Trump	1.092***	1.113***	1.115***	1.283***	1.190***	1.367***	1.412***
	(0.005)	(0.005)	(0.006)	(0.058)	(0.081)	(0.136)	(0.171)
Observations	1057429	1057280	1057429	16002	14006	103373	86235
R^2	0.196	0.230	0.381	0.134	0.532	0.089	0.278
P-values of F-tests							
Bush W 1 + Clinton 2 =0						0.000	0.000
Bush W 2 − Bush W 1 = 0						0.000	0.000
Obama 1 + Bush W 2 = 0	0.000	0.000	0.000	0.362	0.406	0.000	0.000
Obama 2 − Obama 1 = 0	0.000	0.000	0.000	0.071	0.331	0.000	0.048
Trump + Obama 1 = 0	0.000	0.000	0.000	0.000	0.000	0.031	0.005
FE	None	County×month	ZIP×month	None	County×month	None	County×month
Republican Measure	Partisan affiliation	Partisan affiliation	Partisan affiliation	Partisan affiliation	Partisan affiliation	Vote propensity	Vote propensity

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses.

Table 3
Partisan Bias in Economic Expectations around Presidential Elections

This table presents estimates of how economic expectations change differentially around Presidential Elections for individuals based on their party affiliation. We report β^y and γ^y from the following specification:

$$X_{iym} = \alpha_m + \alpha_m * Rep_{iym} + \alpha_y + \alpha_y * Rep_{iym} + \sum_{y=96,00,04,08,12,16} [\beta^y * Post_y] + \sum_{y=96,00,04,08,12,16} [\gamma^y * Post_y * Rep_{iym}] + \epsilon_{iym}$$

where α_m are month of year indicator variables, and α_y are pseudo-year indicator variables (i.e., June to May). $Post_y$ is an indicator variable for a given pseudo-year y that is one for November through May (i.e., the six months following the Presidential election). For the Gallup data, Rep_{iym} is actual party affiliation; for the Michigan data, Rep_{iym} is the estimated propensity to vote for the Republican in the nearest Presidential election.

	Gallup: Economy getting better			Michigan: Index of consumer expectations	
	(1)	(2)	(3)	(4)	(5)
Post 1996 election				0.131 (0.072)	
Post 2000 election				-0.415*** (0.083)	-0.446*** (0.098)
Post 2004 election				-0.078 (0.081)	-0.086 (0.092)
Post 2008 election	0.140*** (0.007)	0.141*** (0.007)	0.133*** (0.008)	0.159* (0.077)	0.173* (0.087)
Post 2012 election	0.039*** (0.008)	0.042*** (0.008)	0.030*** (0.009)	0.139 (0.078)	0.223* (0.087)
Post 2016 election	-0.397*** (0.008)	-0.401*** (0.008)	-0.415*** (0.009)	-0.655*** (0.070)	-0.616*** (0.080)
Republican measure					
× Post 1996 election				-0.169 (0.161)	
× Post 2000 election				0.197 (0.158)	0.222 (0.187)
× Post 2004 election				0.011 (0.155)	0.031 (0.177)
× Post 2008 election	-0.353*** (0.011)	-0.355*** (0.011)	-0.358*** (0.012)	-0.579*** (0.151)	-0.643*** (0.172)
× Post 2012 election	-0.062*** (0.011)	-0.063*** (0.011)	-0.054*** (0.012)	-0.464** (0.155)	-0.641*** (0.176)
× Post 2016 election	1.241*** (0.011)	1.242*** (0.011)	1.247*** (0.012)	1.816*** (0.147)	1.756*** (0.170)
Observations	1020295	1020159	1020295	114111	93349
R^2	0.176	0.210	0.370	0.100	0.280
FE	None	County×month	ZIP×month	None	County×month
Republican measure	Partisan affiliation	Partisan affiliation	Partisan affiliation	Vote propensity	Vote propensity

* p < 0.1, ** p < 0.05, *** p < 0.01. Standard errors in parentheses.

Table 4
Partisan Bias: Is Your Business Hiring?

This table presents estimates of how individuals differentially respond to a question about whether their business is hiring around Presidential Elections based on the individual's party affiliation. We report β^y and γ^y from the following specification:

$$Hiring_{iym} =$$
$$\alpha_m + \alpha_m * Rep_{iym} + \alpha_y + \alpha_y * Rep_{iym} + \sum_{y=08,12,16} \left[\beta^y * Post_y \right] + \sum_{y=08,12,16} \left[\gamma^y * Post_y * Rep_{iym} \right] + \epsilon_{iym}$$

where α_m are month of year indicator variables, and α_y are pseudo-year indicator variables (i.e., June to May). $Post_y$ is an indicator variable for a given pseudo-year y that is one for November through May (i.e., the six months following the Presidential election). The data set used in these regressions is from Gallup.

	Gallup: Is the business you work for hiring?		
	(1)	(2)	(3)
Post 2008 election	-0.212***	-0.219***	-0.230***
	(0.011)	(0.011)	(0.012)
Post 2012 election	0.042***	0.041***	0.034***
	(0.009)	(0.009)	(0.010)
Post 2016 election	-0.116***	-0.120***	-0.116***
	(0.008)	(0.009)	(0.009)
Republican affiliation			
× Post 2008 election	-0.040*	-0.030	-0.025
	(0.016)	(0.016)	(0.018)
× Post 2012 election	-0.151***	-0.149***	-0.140***
	(0.012)	(0.012)	(0.014)
× Post 2016 election	0.285***	0.289***	0.279***
	(0.012)	(0.012)	(0.013)
Observations	1087840	1087638	1087840
R^2	0.045	0.080	0.255
FE	None	County×month	ZIP×month

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

Table 5
Partisan Bias and Survey Measures of Spending around Elections

This table presents estimates of how spending as measured in survey questions changes differentially around Presidential Elections for individuals based on their party affiliation. We report β^y and γ^y from the following specification:

$$SpendSurvey_{iym} = \alpha_m + \alpha_m * Rep_{iym} + \alpha_y + \alpha_y * Rep_{iym} + \sum_{y=96,00,04,08,12,16} \left[\beta^y * Post_y \right] + \sum_{y=96,00,04,08,12,16} \left[\gamma^y * Post_y * Rep_{iym} \right] + \epsilon_{iym}$$

where α_m are month of year indicator variables, and α_y are pseudo-year indicator variables (i.e., June to May). $Post_y$ is an indicator variable for a given pseudo-year y that is one for November through May (i.e., the six months following the Presidential election). For the Gallup data, Rep_{iym} is actual party affiliation; for the Michigan data, Rep_{iym} is the estimated propensity to vote for the Republican in the nearest Presidential election.

	Gallup Survey				Michigan Survey	
	Log spending yesterday	Log spending yesterday, with ZIP×month FE	Not cutting back spending	Not cutting back spending, with ZIP×month FE	Good time to buy a car	Good time to buy major HH items
Post 1996 election					-0.107 (0.077)	0.001 (0.075)
Post 2000 election					-0.050 (0.089)	-0.059 (0.087)
Post 2004 election					-0.119 (0.086)	0.039 (0.084)
Post 2008 election	-0.122*** (0.011)	-0.110*** (0.012)			0.040 (0.081)	0.061 (0.081)
Post 2012 election	0.092*** (0.011)	0.091*** (0.013)	0.018 (0.016)	0.041 (0.022)	-0.006 (0.082)	-0.050 (0.081)
Post 2016 election	-0.016 (0.011)	-0.016 (0.012)	-0.150*** (0.016)	-0.166*** (0.021)	-0.072 (0.074)	-0.039 (0.072)
Republican measure						
× Post 1996 election					0.178 (0.171)	-0.084 (0.168)
× Post 2000 election					0.030 (0.169)	-0.193 (0.165)
× Post 2004 election					0.114 (0.162)	-0.090 (0.160)
× Post 2008 election	0.007 (0.016)	0.002 (0.018)			0.317* (0.158)	-0.275 (0.158)
× Post 2012 election	-0.033* (0.016)	-0.017 (0.018)	-0.137*** (0.022)	-0.139*** (0.031)	-0.070 (0.163)	0.178 (0.161)
× Post 2016 election	0.058*** (0.016)	0.062*** (0.018)	0.357*** (0.022)	0.390*** (0.031)	0.280 (0.154)	0.152 (0.152)
Observations	968465	968465	299447	299447	108666	108937
R^2	0.018	0.263	0.028	0.504	0.021	0.053
Republican measure	Partisan affiliation	Partisan affiliation	Partisan affiliation	Partisan affiliation	Vote propensity	Vote propensity

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

Table 6
Partisan Bias and Administrative Measures of Spending: County Level

This table presents estimates of the differential response of household spending for Presidential elections based on the county-level vote share for the Republican candidate in the nearest Presidential election. We report β^y and γ^y from the following specification:

$$Ln(S_{cym}) = \alpha_m + \alpha_m * RepVoteShare_{cy} + \alpha_y + \alpha_y * RepVoteShare_{cy} + \sum_{y=00,04,08,12,16} [\beta^y * Post_y] + \sum_{y=00,04,08,12,16} [\gamma^y * Post_y * RepVoteShare_{cy}] + \epsilon_{cym}$$

$Post_y$ is an indicator variable for a given pseudo-year y that is one for November through May (i.e., the six months following the Presidential election). The first column is the county-level analog to the specifications reported in Table 3 using the Gallup data set. Counties in the regressions are weighted by their total population as of 2008.

	(1) Economy getting better	(2) Log auto sales	(3) Log credit card spending
Post 2000 election		-0.103 (0.063)	
Post 2004 election		-0.040 (0.064)	
Post 2008 election	0.131*** (0.021)	-0.239*** (0.056)	-0.067 (0.058)
Post 2012 election	0.116*** (0.020)	0.082 (0.053)	0.013 (0.055)
Post 2016 election	-0.410*** (0.019)	0.013 (0.048)	0.035 (0.050)
Republican vote share			
× Post 2000 election		0.101 (0.122)	
× Post 2004 election		0.024 (0.120)	
× Post 2008 election	-0.319*** (0.044)	0.022 (0.114)	0.018 (0.118)
× Post 2012 election	-0.165*** (0.041)	-0.015 (0.106)	0.011 (0.110)
× Post 2016 election	1.284*** (0.037)	0.006 (0.093)	-0.001 (0.098)
Observations	213593	645626	401096
R^2	0.254	0.279	0.354

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

Table 7
Partisan Bias and Administrative Measures of Spending: Zip Level

This table presents estimates of the differential response of household spending for Presidential elections based on the zip-level average Republican party affiliation. For each year, we measure Rep_{zy} based on the average number of self-identified Republicans in the zip code in the previous year according to the Gallup data set. We report β^y and γ^y from the following specification:

$$Ln(S_{zym}) =$$
$$\alpha_m + \alpha_m * Rep_{zy} + \alpha_y + \alpha_y * Rep_{zy} + \sum_{y=00,04,08,12,16} [\beta^y * Post_y] + \sum_{y=00,04,08,12,16} [\gamma^y * Post_y * Rep_{zy}] + \epsilon_{zym}$$

$Post_y$ is an indicator variable for a given pseudo-year y that is one for November through May (i.e., the six months following the Presidential election). The first column is the zip-level analog to the specifications reported in Table 3 using the Gallup data set. Zip codes in the regressions are weighted by the number of respondents in the Gallup data set.

	(1) Economy getting better	(2) Log auto sales	(3) Log credit card spending
Post 2008 election	0.121***	-0.271***	-0.068***
	(0.009)	(0.008)	(0.010)
Post 2012 election	0.010	0.048***	0.037***
	(0.009)	(0.008)	(0.010)
Post 2016 election	-0.451***	-0.030***	0.051***
	(0.010)	(0.009)	(0.011)
Republican affiliation			
× Post 2008 election	-0.350***	0.005	0.012
	(0.017)	(0.014)	(0.017)
× Post 2012 election	-0.036*	-0.014	-0.007
	(0.015)	(0.013)	(0.016)
× Post 2016 election	1.294***	-0.008	-0.027
	(0.017)	(0.015)	(0.017)
Observations	761920	1247741	1160055
R^2	0.177	0.063	0.050

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Standard errors in parentheses.

This table presents county-level regressions relating house price growth from 2006 to 2007 to the change in economic expectations and spending. In columns 2 and 3, we focus on responses in the Michigan survey to the question of whether now is a good time to buy a major household item, and in columns 4 and 5 we focus on the question of whether now is a good time to buy a car. All specifications are weighted by the number of respondents to the Michigan survey in the county, which is highly correlated with the total population of the county.

	Δ ICE 04-06 to 07	Δ Major HH items 04-06 to 07		Δ Car 04-06 to 07		Auto sales growth, 06 to 07		Credit card spending growth, 06 to 07	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
House price growth, 06 to 07	1.079***	1.027***		0.430		0.592***		0.190***	
	(0.255)	(0.226)		(0.271)		(0.045)		(0.039)	
Δ ICE, 04-06 to 07			0.220***		0.205***		0.010*		0.007*
			(0.029)		(0.029)		(0.004)		(0.003)
Constant	-0.037	-0.037	-0.063***	-0.057*	-0.066***	0.005	-0.028***	0.049***	0.043***
	(0.022)	(0.023)	(0.017)	(0.022)	(0.017)	(0.004)	(0.004)	(0.004)	(0.003)
Observations	714	703	1201	708	1218	714	1236	714	1237
R^2	0.025	0.025	0.051	0.004	0.040	0.360	0.006	0.060	0.004

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors in parentheses.