

Sentiments and Spending Intentions: Evidence from Florida

Hector H. Sandoval* Anita N. Walsh[†]

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Abstract

Consumer sentiment is considered an important leading indicator of changes in household spending. However, the overall empirical evidence of the causal relationship between sentiment and consumption is mixed and scarce. We address these gaps by employing data from the monthly Florida Consumer Attitude Survey, which captures party affiliation, consumer sentiment, and spending intentions at the individual level since 1991. We employ political partisanship around elections in which the governing party changed as an instrument for sentiment. Our results show that party affiliation is a strong instrument that has a positive and statistically significant effect on sentiment. Moreover, we find a statistically significant causal relationship between sentiment and spending intentions. This effect is sizable and robust across the presidential elections in our sample as well as to a variety of robustness checks. Finally, we provide evidence that spending intentions relate to actual spending, and show that spending increased more among counties with a larger share of Republican voters following the 2016 presidential election.

JEL Codes: D12, E21, E32

Keywords: Consumer confidence, consumer sentiment, spending intentions, partisanship, Florida.

*Corresponding author. Department of Economics, University of Florida, PO Box 117140, 325 MAT, Gainesville, FL 32611-7140. Telephone: +1 (352) 392-0475, E-mail: hsandoval@ufl.edu.

[†]Department of Economics, University of Florida, PO Box 117140, 325 MAT, Gainesville, FL 32611-7140. E-mail: anitanwalsh@ufl.edu.

1 Introduction

Consumer sentiment is thought to reflect changes in household spending, a key driving force behind economic growth. Thus, it is seen as an important signal about the strength of the economy. As a result, measures of consumer sentiment are typically considered leading indicators that receive frequent attention from policymakers, economists, and the media. However, the overall evidence of its predictive track record is mixed with uneven performance across countries and economic measures (Curtin, 2007). The empirical evidence regarding the causal effect of sentiment on consumption is also mixed and scarce. In this paper, we use individuals’ spending intentions as a proxy measure for consumer spending to study the causal relationship between consumer sentiment and spending intentions using monthly individual-level sentiment data from Florida. While our main focus is on spending intentions, we also provide corroborating evidence related to actual spending.

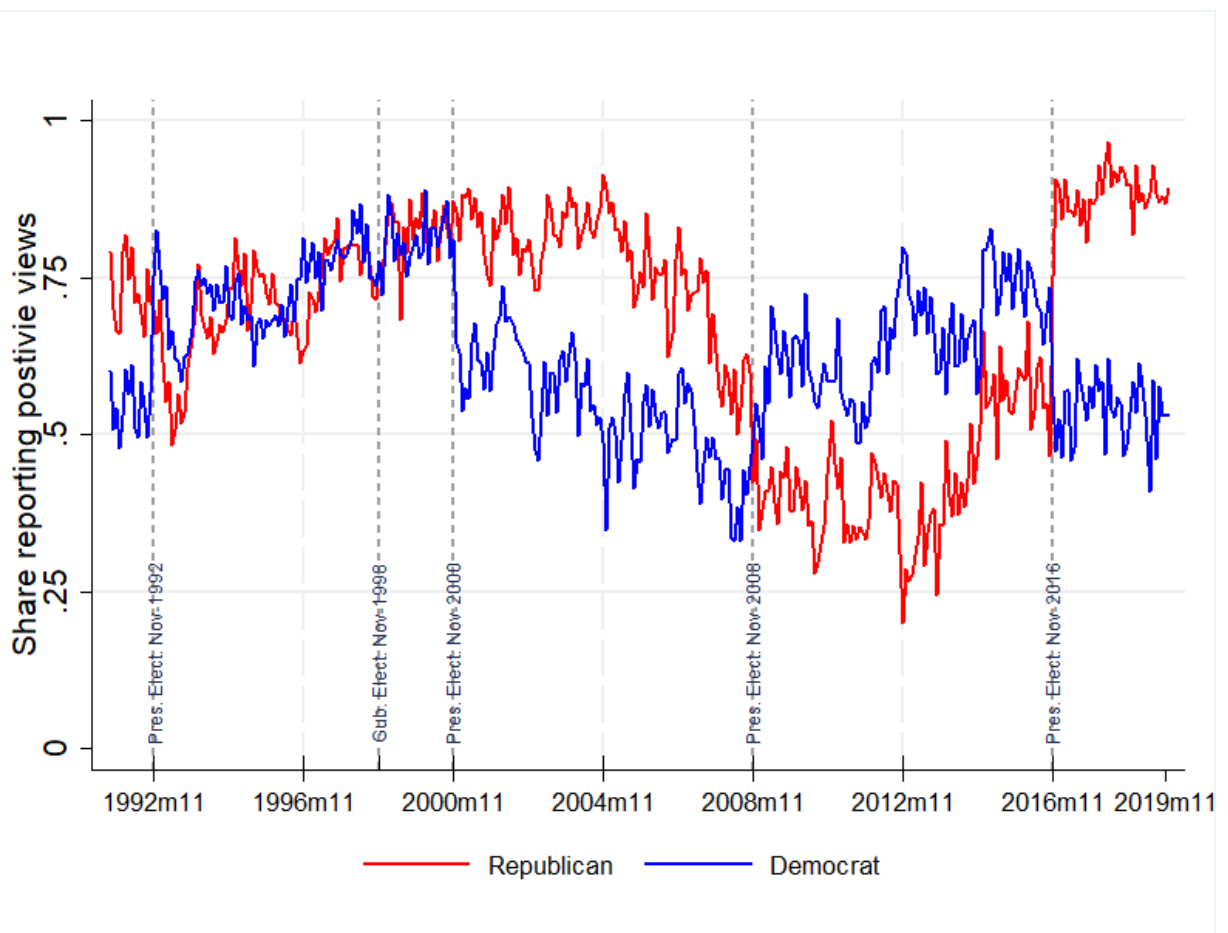
Identifying the causal relationship between consumer sentiment and consumption is challenging due to an endogeneity problem. For instance, a linear regression of consumption on sentiment will ignore confounding variables in the error term, such as income, which may be simultaneously correlated with both sentiment and consumption. Moreover, sentiment may closely follow economic activity rather than contributing to it. The main empirical challenge in addressing the causal question is finding variation in sentiment that is exogenous to variation in economic fundamentals.

We overcome this challenge by using individual-level data from the monthly University of Florida Consumer Attitude Survey and employing political partisanship as an instrument for consumer sentiment. This survey is unique because it allows us to match party affiliation, consumer sentiment, and spending intentions at the individual level in Florida since 1991. As shown in figure 1, consumers have more optimistic views about future economic conditions when the political party they are affiliated with is in office, and in particular, sharp shifts in sentiment are observed immediately after a presidential election which changed the political party in power. We exploit this exogenous variation in sentiment to identify the causal effect of sentiment on spending intentions. This instrumental variable approach has been used in previous research studying the causal effect of consumer sentiment on household spending (Mian et al., 2018) and state output growth (Benhabib and Spiegel, 2019) in the U.S., and consumer spending intentions in Australia (Gillitzer and Prasad, 2018). By contrast, our consumer sentiment data allows us to incorporate party affiliation directly, resulting in a stronger identification strategy than previous U.S. based studies that impute or proxy party affiliation.

Our analysis covers the period between 1991 and 2019, which comprises four presidential elections (1992, 2000, 2008, and 2016) and one gubernatorial election in Florida (1998) that resulted in a change of the political party in office. We use four different measures for sentiment, one coming from a backward-looking question and the remaining three from forward-looking questions on economic beliefs. Our primary measure for spending intentions comes from the following question: “*Do you*

think now is a good or a bad time for people to buy major household items?” Importantly, responses to sentiment, party affiliation, and spending intention questions are all available throughout the sample period. Moreover, six additional spending intentions questions were asked less frequently, some of which are unique to our consumer sentiment survey. Two questions ask about planned spending on buying a car or a house and were asked monthly between 1991 and 1997. Three questions concern planned spending on holiday merchandise, gift cards, and apparel. These questions were asked for several months between 2007 and 2009. The last question, also related to buying a house, was asked between October and November of 2016. (Table 1 presents the wording for each question.)

Figure 1: Expected Economic Conditions by Party Affiliation



Data Source: University of Florida Consumer Attitude Survey. The figure plots the share of respondents reporting positive (optimistic) views to any of the three forward-looking questions by party affiliation. See Table 1 for the questions. The sample covers the period from September 1991 to December 2019. The vertical dashed lines correspond to the four presidential elections (1992, 2000, 2008, and 2016) and one gubernatorial election (1998) that resulted in a change of the political party in office.

In our analysis, we first investigate the effect of partisanship on sentiment and show evidence of a robust significant positive relationship between political partisanship and sentiment around

presidential elections that changed the political party in office across our four measures of consumer sentiment. In particular, the F-statistics associated with political partisanship, our instrument, are well above conventional thresholds and are particularly high for the two forward-looking questions that capture national economic conditions. These results give us confidence that we have a strong instrument in our first stage, which will help us identify the causal effect of sentiment on spending intentions. Within our sample period, the midterm election in 1998 was the only gubernatorial race resulting in a change of political party in the Florida governor’s office. Looking at changes around this election, we also find a positive relationship between partisanship and sentiment. However, the associated F-statistics are small, indicating that we have a weak instrument.

Based on these results, we focus on changes around presidential elections only to investigate whether shifts in sentiment after the party in office loses an election have a causal effect on spending intentions. Considering our main spending intention question, our results show a statistically significant relationship between consumer sentiment and spending intentions. This effect is robust across the four presidential elections in our sample and to a variety of robustness checks. Results considering the other more specific spending intentions questions are also significant, providing further evidence of the causal effect of sentiment on spending intentions. Overall, our results indicate a robust effect for all sentiment measures based on forward-looking questions.

Finally, we provide evidence on the relationship between intentions and actual spending using a time-series based on gross sales tax data at the state level. In particular, we employ a Granger causality test to determine whether changes in consumption in durable goods and spending intentions are related. Our results fail to reject the null hypothesis that consumption does not Granger-cause spending intentions, but reject the converse null hypothesis, that is, that intentions do not Granger-cause consumption. In other words, they provide evidence that intentions are indicative of actual spending and not the other way around. In addition, we provide cross-sectional evidence using gross sales tax data at the county-level and show that actual spending in durable goods increased more among counties with a larger share of Republican voters following the 2016 presidential election.

Few papers have sought to assess the causal effect of confidence on consumption or economic activity. The evidence from these exercises is mixed. Mian et al. (2018) show that individuals supporting the party of the winning U.S. presidential candidate witness a substantial relative rise in optimism about the economy after the election. However, they find no evidence that these shifts affect household spending. Benhabib and Spiegel (2019) examine whether changes in sentiment about national economic conditions directly influence state output growth. They show that sentiment shocks at the state level significantly affect output growth over at least the following four quarters. These two papers use data from the University of Michigan Survey of Consumers, a nationally representative survey of about 500 individuals every month, that does not include a party

affiliation question consistently asked over time.¹ For this reason, both papers rely on proxies for political partisanship. Mian et al. (2018) predict and impute a vote propensity measure, while Benhabib and Spiegel (2019) use the share of state congressional representatives from the same political party as the sitting president. The former adds noise to the data because the vote propensities are estimated with error.² The latter study measures sentiment with less precision because it uses a nationally representative survey to estimate sentiment for each state.³

Another related paper that analyzes U.S. data is Gerber and Huber (2009), which uses county-level sales tax revenues from 1990 to 2006 as a proxy for consumption. The authors show that consumption changes following a political election are correlated with whether the election was won by the preferred political party of the respondent. McGrath (2017) re-analyzes the original work of Gerber and Huber using data on two additional presidential elections and concluded that the results do not hold when observations in Texas in 1996 are excluded. Similarly, McGrath shows that the authors’ findings do not hold for replications in the 2008 and 2012 presidential elections. However, these papers do not address the causal effect of sentiment on consumption.

Gillitzer and Prasad (2018), whose study is closer to ours, use Australian individual-level data and show that higher consumer sentiment following a favorable change in government is associated with increased spending intentions. They report positive spending intentions for both major household items and automobiles. In addition, they find evidence that spending intentions are indicative of actual spending.

Our paper makes several contributions to this literature. First, by exploiting a unique dataset that allows us to match party affiliation, sentiment, and spending intentions at the individual level, we provide evidence of the causal effect of consumer sentiment on spending intentions in Florida. Although our results are based on Florida, we believe they apply more broadly at the U.S. national level because they are related to the expectations and behavior of consumers in general. Second, we show that the effect is robust across sentiment measures, particularly with measures based on forward-looking questions about national economic conditions, and across different spending intention measures not explored previously in the literature. Third, we show that changes in state government do not have the same impact on economic expectations as changes in the federal government. In other words, partisan bias appears at the federal elections level. Finally, we provide further evidence regarding the relationship between intentions and actual spending, as well as on

¹An addendum to the Michigan Surveys of Consumers includes a political party affiliation variable for select months in 1980, 1984-1985, 2006, 2008-2010, 2012, 2014-2021. This partisanship variable became permanently available in monthly surveys beginning in February 2017. For a detailed description of Michigan’s addenda political party variable visit: <https://data.sca.isr.umich.edu/>.

²For instance, the estimated propensities for the Republican candidate are 10 to 12 percentage points higher for self-identified Republicans versus Democrats. Gillitzer and Prasad (2018) show that the lack of evidence on spending intentions in Mian et al. (2018) is due to the measurement error on voting intentions.

³Mian et al. (2018) also use data from the Gallup Daily Survey, which contains a question asking the individual’s partisan affiliation in almost all surveys. However, the economic expectations measures do not come from forward-looking questions, which are typically associated with consumer sentiment and only reflect current conditions.

changes in actual spending.

More broadly, our paper contributes to the literature on consumer confidence, including Carroll, Fuhrer, and Wilcox (1994), Bram and Ludvigson (1998), and Ludvigson (2004) on the forecasting power of consumer confidence measures in predicting household spending in the U.S.; Acemoglu and Scott (1994) and Easaw et al. (2005) on predicting consumption growth in the U.K.; and more recently, Barsky and Sims (2012), Blanchard et al. (2013), Dees and Zimic (2019), Öztürk and Stokman (2019), and Sandoval and Walsh (2021), who study the two contrasting perspectives regarding the role of consumer confidence in macroeconomics, namely, the news view and the animal spirits view.

The analysis proceeds as follows. Section 2 describes the Florida Consumer Attitude Survey, provides descriptive statistics, and describes the changes in political leadership that occurred during our time frame. Section 3 describes our empirical strategy and reports our main results. Section 4 presents additional results regarding other spending intention questions. In Section 5, We present evidence of the relationship between intentions and actual spending and whether spending changes more among Republicans following the 2016 presidential election. Section 6 concludes.

2 Background and Data

2.1 Consumer Sentiment Survey

Our data is drawn from the Florida Consumer Attitude Survey (FCA), which is conducted statewide in Florida by the University of Florida’s Bureau of Business and Economic Research (BEBR) and is comparable to the national consumer sentiment survey administered by the University of Michigan.⁴ The monthly FCA survey contains information on consumer sentiment, spending intentions, party affiliation, and socio-demographic characteristics from approximately 500 randomly selected adult Florida residents. Although the survey has been conducted every month since 1985 by the University of Florida, our analysis considers the period between September 1991 and December 2019 because the party affiliation question was not asked in the early years of the survey.⁵ Table 1 presents the survey questions and the response options to sentiment and spending intentions questions. In brackets, we show the corresponding variable name used throughout the paper. We have four measures of sentiment, one from a backward-looking question (CURFIN) and three from forward-looking questions (FUTFIN, USFUFI, and USNEX5). CURFIN asks respondents to retrospectively consider whether they (and their household) are better off, about the same, or worse financially

⁴For more information about the Florida Consumer Attitude Survey methodology visit <https://www.bebr.ufl.edu/csi-data>.

⁵Moreover, between 1985 and 1990, the survey was not conducted in the months of April, August, and December, nor was it conducted in April and August of 1991. Between September 1993 and January 1999, the sample size of the survey doubled.

from one year ago. FUTFIN asks respondents whether they (and their household) will be better off, about the same, or worse financially one year from now. Hence, FUTFIN focuses on consumers' economic expectations of their personal financial situation. USFUF1 and USNEX5 ask respondents about the national economy's expected health during the next year and five years, respectively.

Our primary measure for spending intentions (GBTIME) comes from the following question: *"Do you think now is a good or a bad time for people to buy major household items?"* The variable that captures individuals' party affiliation (PARTISANSHIP) comes from the following question, *"Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?"* Between February 2014 and December 2014, the wording of this question changed to *"Generally speaking, do you usually think of yourself as a Democrat, a Republican, some other party, or an Independent with no party affiliation?"* This issue does not affect our results because in our empirical strategy we consider a one-year window before and after changes in government. For instance, when analyzing consumer sentiment around the 2016 presidential election, we use data between 2015 and 2017. Importantly, sentiment, party affiliation, and spending intention questions are all asked throughout the entire sample period.

We have six additional spending intentions questions that are asked less frequently than GBTIME. Two questions concern planned spending on buying a car (PLANBC) or a house (PLANBH). The answers to these questions are available monthly between September 1991 and July 1997. Three questions concern planned spending on holiday merchandise (MERCH), gift cards (GCARDS), and apparel (APPAREL). The answers to these questions are available in September, November, and December of 2007; September, October, and November of 2008; and October, November, and December of 2009. The last question, also related to buying a house (HOMEGEN), is only available between October and November of 2016.

Table 1: Florida Consumer Attitude Survey Questions and Response Options

Survey Question	Responses
Sentiment	
1. [CURFIN] Would you say that you (and your family living there) are better off or worse financially than you were a year ago?	Better off / Same / Worse off
2. [FUTFIN] 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?	Better off / Same / Worse off
3. [USFUF1] Now turning to business conditions in the country as a whole – do you think that during the next 12 months we’ll have good times financially, or bad times, or what?	Good times / Good times with qualifications / Uncertain; Good and bad / Bad times / Bad times with qualifications
4. [USNEX5] 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 five years or so, or that we will have periods of widespread unemployment or depression, or what?	Good times / Good times with qualifications / Uncertain; Good and bad / Bad times / Bad times with qualifications
Spending Intentions	
1. [GBTIME] Do you think now is a good or a bad time for people to buy major household items?	Good time / Uncertain / Bad time
2. [PLANBC] Does anyone in your household plan to buy a car in the next 6 months?	Yes / Maybe / No
3. [PLANBH] Does anyone in your household plan to buy a house in the next 6 months?	Yes / Maybe / No
4. [MERCH] Looking ahead to the upcoming holiday season, do you expect your purchases will be greater than, less than, or equal to last year?	Greater than last year / Equal to last year / Less than last year
5. [GCARDS] This holiday season, do you think you will spend more, about the same, or less (than last year) on gift cards?	More than last year / Same as last year / Less than last year
6. [APPAREL] This holiday season, do you think you will spend more, about the same, or less (than last year) on apparel?	More than last year / Same as last year / Less than last year
7. [HOMEGEN] For people in general, do you think that now is a good time or a bad time to buy a house?	Good time / Uncertain / Bad time

Table 2 reports summary statistics for sentiment, spending intentions, and socio-demographic characteristics by party affiliation. The table pools all available surveys in our sample, that is, between September 1991 and December 2019. We code the responses to sentiment and spending intentions questions as one if negative (pessimistic) views are reported, two if neutral or unchanged views are reported, and three when positive (optimistic) views are reported. In our sample, survey respondents identifying as Republican respond more favorably to the sentiment questions and display higher spending intentions for several durable goods and retail items than Democratic supporters; however, the differences are not substantial. Moreover, while Republican and Democratic Party supporters are similar along several socio-demographic dimensions, respondents identifying as Democrat include a higher share of women and African Americans, lower-income earners (annual income below \$60,000), and a lower share of married respondents. These patterns are consistent with the demographics of registered voters by party affiliation in Florida.

Table 2: Summary Statistics by Party Affiliation

	Observations	Republican		Democrat	
		Mean	Std. Dev.	Mean	Std. Dev.
Sentiment					
CURFIN	126,842	2.12	0.80	2.03	0.80
FUTFIN	122,219	2.31	0.68	2.27	0.67
USFUF1	120,282	2.17	0.85	2.10	0.84
USNEX5	120,915	2.14	0.84	2.05	0.84
Spending intentions					
GBTIME	121,499	2.42	0.80	2.33	0.83
PLANBC	37,453	1.33	0.70	1.32	0.68
PLANBH	37,549	1.17	0.53	1.15	0.51
MERCH	2,858	1.72	0.62	1.64	0.64
GCARDS	2,343	1.80	0.64	1.71	0.66
APARREL	2,469	1.71	0.62	1.63	0.64
HOMEGEN	615	2.48	0.69	2.29	0.79
Socio-demographics					
Female	127,184	0.50	0.50	0.62	0.48
Age	124,321	51.25	17.81	51.40	18.04
Black	126,479	0.02	0.13	0.21	0.40
Hispanic	126,129	0.12	0.32	0.12	0.33
Married	126,829	0.62	0.49	0.48	0.50
Household size	122,418	2.60	1.39	2.54	1.44
Education	125,554	14.24	2.69	13.92	2.87
Employment	124,075	0.62	0.49	0.59	0.49
Income < \$60K	110,367	0.57	0.49	0.71	0.45
Urban	127,323	0.96	0.20	0.95	0.22
Southeast FL	127,323	0.22	0.41	0.31	0.46
Southwest FL	127,323	0.33	0.47	0.29	0.45
Central FL	127,323	0.22	0.42	0.19	0.39
North FL	127,323	0.23	0.42	0.22	0.41

The table reports summary statistics for sentiment, spending intentions, and socio-demographic characteristics by party affiliation using the individual-level data from the Florida Consumer Attitude Survey. Responses to sentiment and spending intentions questions are coded as follows: negative views=1, neutral/unchanged views=2, and positive views=3. The total sample consists of 127,654 observations corresponding to the period from September 1991 to December 2019. The question GBTIME is asked throughout the whole period. The questions PLANBC and PLANBH are available between September 1991 and July 1997. The variables MERCH, GCARDS, and APPAREL are available for September, November, and December of 2007; September, October, and November of 2008; and October, November, and December of 2009. The variable HOMEGEN is available between October and November of 2016.

2.2 Presidential and Gubernatorial Elections

Our analysis focuses on changes of the political party in office at the federal and the state level for Florida. Our Florida Consumer Attitude Survey data covers all elections between 1991 and 2019, beginning with the 1992 U.S. presidential election. The U.S. presidential election occurs every

four years, with either the Democratic or Republican Party holding office.⁶ Florida gubernatorial elections, like the rest of the U.S. state gubernatorial elections, run similarly to the national elections but occur during even-numbered years when there is not a presidential election. These elections are known as *midterm elections*. Florida follows the same two-party system where the elected governor has historically been either a Democrat or Republican. Moreover, the state governor also serves a four-year term and may not serve more than two consecutive terms.⁷ The first gubernatorial election in our sample is the 1994 election.

During our time frame, there were seven presidential elections and seven gubernatorial elections. Four presidential elections resulted in a change of the party in government, while only one gubernatorial election did. Table 3 presents the outcome of every U.S. presidential and Florida gubernatorial election since 1990, including the popular vote count for each election. The shading identifies changes in the political party of the governing office (red-shaded cells denote the Republican Party while blue-shaded ones denote the Democratic Party). The four changes in political leadership in the presidential elections are to the Democratic Party in 1992, to the Republican Party in 2000, to the Democratic Party in 2008, and to the Republican Party in 2016. The only gubernatorial race to result in a change in the winning political party within our sample was the 1998 election, which changed the governing party from Democrat to Republican. The Florida governorship has been Republican-controlled since this election.

⁶Third-party candidates may run as Independent with no party affiliation or some other party such as Libertarian. These third-party candidates occasionally win seats as U.S. state senators or congress members in the legislative branch. However, they have never won a seat in the executive branch and typically receive less than 5 percent of all votes. According to the MIT Election Data and Science Lab, the 1992 and 1996 presidential elections had the highest share of third-party votes since 1976, accounting for 20% and 10% of votes, respectively.

⁷There is no lifetime limit on the number of times he or she may be elected, but a governor who has been elected to two consecutive terms must be out of office for at least one election cycle before being eligible for re-election.

Table 3: Presidential and Gubernatorial Elections Outcomes

	Presidential Elections Presidential Winner	Gubernatorial Elections Governor
1988	George H. W. Bush (Republican)	Bob Martinez (Republican)
1990	Popular vote: 48,642,640 (53.1%)	Lawton Chiles (Democrat)
1992	Bill Clinton (Democrat)	Popular vote: 1,995,206 (56.5%)
1994	Popular vote: 44,856,747 (42.9%)	Lawton Chiles (Democrat)
1996	Bill Clinton (Democrat)	Popular vote: 2,135,008 (50.8%)
1998	Popular vote: 47,295,351 (49.1%)	Jeb Bush (Republican)
2000	George W. Bush * (Republican)	Popular vote: 2,191,105 (55.3%)
2002	Popular vote: 50,311,372 (47.6%)	Jeb Bush (Republican)
2004	George W. Bush (Republican)	Popular vote: 2,856,845 (56.0%)
2006	Popular vote: 61,872,711 (50.6%)	Charlie Crist (Republican)
2008	Barack Obama (Democrat)	Popular vote: 2,519,845 (52.2%)
2010	Popular vote: 69,338,846 (52.8%)	Rick Scott (Republican)
2012	Barack Obama (Democrat)	Popular vote: 2,619,335 (48.9%)
2014	Popular vote: 65,752,017 (50.9%)	Rick Scott (Republican)
2016	Donald Trump * (Republican)	Popular vote: 2,865,343 (48.1%)
2018	Popular vote: 62,692,670 (45.8%)	Ron DeSantis (Republican)
2020	Joseph Biden Jr. (Democrat)	Popular vote: 4,076,186 (49.6%)
	Popular vote: 81,268,908 (51.3%)	

The table presents the outcome of every U.S. presidential and Florida gubernatorial election since 1988 including the popular vote count for each election, identifying changes in the political party of the governing office. Red-shaded cells denote the Republican Party, while blue-shaded ones denote the Democratic Party. The * indicates that the winning candidate lost the popular vote in this election.

3 Empirical Strategy

Identifying the causal relationship between consumer sentiment and consumption is challenging due to an endogeneity problem. For instance, a linear regression of consumption on sentiment

will ignore confounding variables in the error term, which may simultaneously be correlated with both sentiment and consumption. Moreover, sentiment may closely follow economic activity rather than contributing to it. As a result, the main empirical challenge is finding variation in sentiment that is exogenous to variation in economic fundamentals. To address this challenge, we employ an instrumental variable approach to identify the causal effect of sentiment on spending intentions and thus consider spending intentions as a proxy for consumption.

Consumers often have more optimistic views about future economic conditions when the political party they are affiliated with is in office. Figure 1 shows that sentiment shifts sharply after presidential elections in which the party in power changes. We construct an instrumental variable exploiting this exogenous variation in sentiment to identify the causal effect. Our analysis focuses on the period one year before and one year after a change in the political party of the U.S. president, and we also consider changes in the political party of the Florida governor.⁸

This identification strategy relies on the assumption that changes in the political party of the sitting president (or Florida governor) do not directly affect the spending intentions of individuals. In particular, political partisanship would be an invalid instrument if the political situation directly affected underlying economic fundamentals.⁹ There are several reasons why it is reasonable to believe that the shifts in sentiment follow exogenous changes in political leadership and not policy. First, we observe that the shift in sentiment of Republicans and Democrats occurs immediately after the election in November and thus before actual government control changes (and thus policy) in January the following year. Moreover, when using a 3-months before and after window in the regressions later in our sensitivity analysis (Table 6), the estimated coefficients are similar, and our main conclusions remain unchanged.

Second, following the methodology of Blinder and Watson (2016), we provide evidence that changes in political party leadership at the national level do not systematically influence several aggregate state level economic outcomes in Florida.¹⁰ Table A1 in the appendix presents several economic outcome measures for Florida based on the political party in power at the national level. All economic indicators are measured quarterly and span the first quarter of 1990 to the fourth quarter of 2019 — the sample period for which we capture respondents’ party affiliation and excludes the COVID-19 pandemic — with some exceptions (see Appendix A for details). The economic indicators are also expressed as an annualized percentage. Our results indicate little difference in economic outcomes for Florida under Democratic and Republican presidencies. The exceptions are

⁸We also consider alternative windows of three and six months (see Section 3.3 Sensitivity Analysis).

⁹For instance, the economic fundamentals in a baseline model of consumption are typically labor income, real stock prices, and interest rates.

¹⁰We perform a similar exercise for changes in the political party of the Florida governor. Similarly, we do not observe systematic differences in state economic outcomes under Democratic and Republican governors. However, we interpret these results cautiously because our sample period has only one change in the state’s governing party. Given that political partisanship proves to be a weak instrument around changes in state party leadership, we believe that our main results involving presidential elections are still valid.

unemployment rate change, job hires growth, and personal transfer receipts growth, including Medicare growth and state unemployment insurance (UI) compensation growth. Appendix A provides additional details regarding these exceptions. Similarly, Mian et al. (2018) find no evidence at the county level that presidential elections are systematically related to changes in consumption growth in a manner associated with local political leaning.

Finally, as Gillitzer and Prasad (2018) observe, economic policy set by the government targets groups of people based on observable characteristics rather than specific individuals. For instance, such policies may be directed toward citizens of certain income, education levels, or race. In our specification, we control for a wide range of observable economic and demographic characteristics and interact each of them with an indicator of the survey month. Doing so allows us to further control for covariate-specific trends across socio-demographics.

Our first- and second-stage regressions are as follows,

$$\text{Sentiment}_{i,m} = \sum_m \alpha_m \times d_m + \beta \text{Partisanship}_{i,m} + \sum_k \gamma^k X_{i,m}^k + \sum_m \sum_k \gamma_m^k (d_m \times X_{i,m}^k) + \eta_{i,m} \quad (1)$$

$$\text{Spending}_{i,m} = \sum_m \alpha_m \times d_m + \delta \widehat{\text{Sentiment}}_{i,m} + \sum_k \gamma^k X_{i,m}^k + \sum_m \sum_k \gamma_m^k (d_m \times X_{i,m}^k) + \zeta_{i,m}, \quad (2)$$

where *Sentiment* corresponds to one of four sentiment questions (CURFIN, FUTFIN, USFUFI, and USNEX5) for individual i in the survey month m . We code the responses to sentiment questions as one if negative (pessimistic) views are reported, two if neutral or unchanged views are reported, and three when positive (optimistic) views are reported. The variable *Partisanship* is our instrument, and it equals one whenever the party affiliation of the respondent matches that of the political party winning the election. d_m is an indicator variable of the survey month, and $X_{i,m}$ is a $(1 \times K)$ vector of covariates. The covariates include all socio-demographic variables reported in table 1. Specifically, the X vector of covariates include the respondent's sex, age, race, Hispanic origin, marital status, household size, education, employment status, urban area residence, metropolitan statistical area (MSA), and zip code. The variables age, years of education, and household size are grouped into categories so that all covariates are categorical variables.¹¹ Instead of using the four geographical regions reported in the table (SE, SW, Central, and North), we included $\text{MSA} \times \text{survey-month}$ fixed effects as well as zip code fixed effects. The latter are not interacted with the survey months due to sample size limitations.

The variable *Spending* corresponds to our main measure of spending intentions (GBTIME), which is available throughout the whole sample period, and to the six additional questions that are asked less frequently (PLANBC, PLANBH, MERCH, GCARDS, APPAREL, and HOMEGEN).

¹¹We omit income from our main specification because it has the largest share of missing values. However, as reported in our sensitivity analysis, including this variable does not impact our results.

The parameter of interest is δ , which captures the causal effect of sentiment on spending intentions. In the second stage, we use the predicted values of $\widehat{Sentiment}$ from the estimation of equation (1) to fit equation (2) and obtain an estimate of δ . The time frame for each regression is one year before and one year after the election: for example, from November 2015 to October 2017 for the 2016 presidential election. In our sensitivity analysis, we explore shorter time frames. We use two-stage least squares (2SLS) estimation and robust standard errors.

In addition to several economic and demographic covariates, our specification also controls for the zipcode of each individual respondent. Thus, our regression compares Republicans and Democrats living within the same zipcode. One potential concern is that Republicans and Democrats zipcodes systematically contain only Republicans or Democrats. Figure B1 in the appendix provides evidence that Democrats and Republicans live in the same zipcode using our consumer sentiment data. This figure plots the cumulative distribution of the share of Republicans and Democrats across 930 standard zipcodes in Florida. Around 80% of the standard zipcodes in our sample have a share of Republicans and Democrats that ranges between 30% and 70%. In other words, Republicans and Democrats are well distributed within each zipcode.

Another potential concern with the use of variation in partisanship bias around presidential elections is that some elections were anticipated. Thus, the strength of our instrument could potentially vary with elections. For example, the 1992 presidential victory by Democratic candidate Bill Clinton against the Republican incumbent George H.W. Bush was likely anticipated by voters as the Gallup poll cited a 12 percentage point lead for Clinton heading into election day.¹² Similarly, and although a historic win, Democratic candidate Barack Obama held an 11 percentage point advantage in polling over his Republican opponent ahead of the 2008 election. On contrast, the 2000 presidential race was very close as candidates were separated by only 2 percentage points in election polling, albeit with a slight advantage for the eventual winning Republican candidate. It is hard to argue that voters knew the election’s outcome in advance of the 2000 election. While some election outcomes were anticipated, the outcome of the 2016 presidential election was not. In fact, election polling favored Clinton, the democratic candidate, in the run-up to the election. Thus, the source of variation is plausibly exogenous.

In the next sections, we proceed first by analyzing the link between partisanship and sentiment and then the causal relationship between sentiment and spending intentions.

3.1 Partisanship and Sentiments

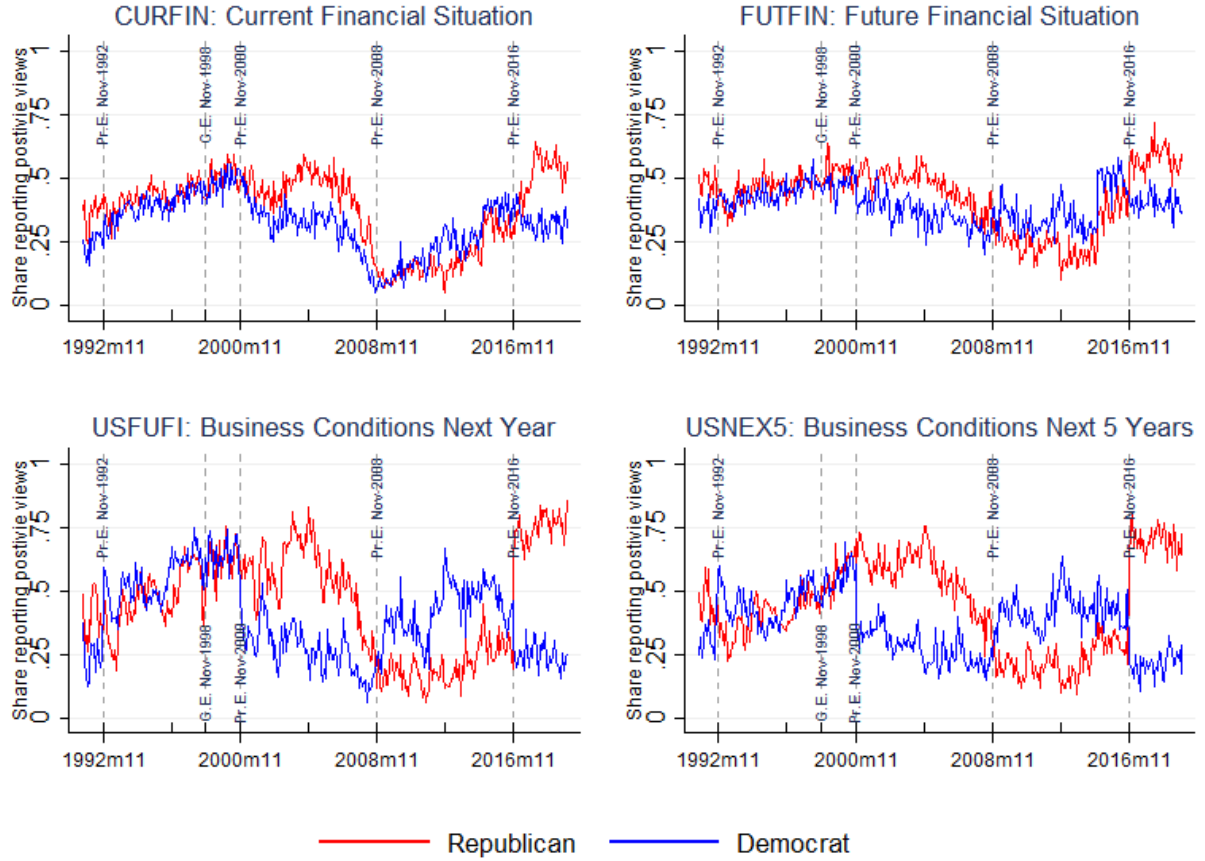
Our sample covers the period from September 1991 to December 2019, which includes seven U.S. presidential elections and seven state gubernatorial elections in Florida. Figure 2 displays the share

¹²Gerhard Peters. “Election Year Presidential Preference Polling and Voting Outcome,” The American Presidency Project. Ed. John T. Woolley and Gerhard Peters. Santa Barbara, CA: University of California. Online: <https://www.presidency.ucsb.edu/node/323909>.

of positive views by party affiliation for each of our four sentiment questions and provides a graphical overview of the relationship between partisanship and sentiment. The largest shifts in sentiment between Republicans and Democrats coincide with the four U.S. presidential elections that caused the political party in power to change, that is, 1992, 2000, 2008, and 2016. In particular, survey respondents whose party affiliation matched the winning U.S. presidential candidate reported more optimistic views about personal and national economic conditions immediately after the election. In contrast, respondents whose party affiliation aligned with the losing candidate reported more pessimistic views about the same economic conditions. *Election Day* in the U.S. takes place in early November.¹³ Notably, the sharp changes in sentiment are observed between October and November. For instance, the percentage of Republicans reporting positive views in the question on business conditions in the next 5 years (USNEX5) went from 20.8% in October to 58.5% in November of 2016, while the percentage of Democrats reporting positive views moved in the opposite direction, from 50.7% to 21.5% in the same period. This pattern is consistent across sentiment measures and presidential elections, particularly after the 2000 presidential election. This partisan bias is not nearly as strong around Florida governor's races. On the contrary, there is very little change in sentiment between Republican and Democratic supporters around the 1998 governor's election, which is the only election in which the party of the sitting governor changed during our sample period.

¹³Presidential elections take place the Tuesday after the first Monday of November in a given election year.

Figure 2: Consumer Sentiment by Party Affiliation



Data Source: University of Florida Consumer Attitude Survey. The figure plots the share of respondents reporting positive (optimistic) views to each of the four sentiment questions party affiliation. See table 1 for the questions. The sample covers the period from September 1991 to December 2019. The vertical dashed lines correspond to the four presidential elections (1992, 2000, 2008, and 2016) and one gubernatorial election (1998) that resulted in a change of the political party in office.

Table 4 reports our estimates of β from the first-stage regression, equation (1), for each sentiment question and the presidential and gubernatorial elections in which the governing party in office changed. Each coefficient comes from a separate regression using individual-level data pooled one year before and one year after each of these elections. Columns (1) through (4) consider presidential elections, and column (5) considers the 1998 state gubernatorial election. Our results show that party affiliation has a positive and statistically significant effect on all four measures of sentiment for every election, except for the question CURFIN during the 2000 presidential election and the 1998 Florida gubernatorial election. The largest effects are found on the two forward-looking questions regarding expected national economic conditions (USFUF1 and USNEX5). Interestingly, the effect of partisanship on sentiment increases with each election, a trend consistent with the surge in partisan polarization in American politics during the last three decades (Jacobson, 2003, 2013;

Andris et al., 2015; Neal, 2016). According to the Pew Research Center, political polarization surged in the 2000s during the G. W. Bush and Obama years and reached a new height following the 2016 presidential election.¹⁴

Table 4 reports the F-statistics from a test of whether the coefficient on affiliation is equal to zero. The statistics document the strength of our instrument. Nearly all F-statistics are beyond conventional thresholds for all specifications concerning presidential elections. The main exception is CURFIN, for which the F-statistic is low in three of four presidential elections. Thus, there is strong evidence of partisanship around presidential elections, especially for all forward-looking questions. Furthermore, although the effect of partisanship on sentiment during the 1998 gubernatorial election is statistically significant for the forward-looking questions (FUTFIN, USFUFI, and USNEX5), the associated F-statistics are small and below standard thresholds for all four sentiment questions. This result indicates that *Partisanship* is a weak instrument for the gubernatorial election (1998), and thus ill-suited to estimate the effect of sentiment on spending intentions. We therefore exclude the gubernatorial elections in the remainder of our analysis.

¹⁴Pew Research Center (2017). The partisan divide on political values grows ever wider. Retrieved from <http://www.people-press.org/2017/10/05/the-partisan-divide-on-political-values-grows-even-wider/>.

Table 4: Effect of Partisanship on Sentiment

	(1)	(2)	(3)	(4)	(5)
	Pres. Elect. 1992	Pres. Elect. 2000	Pres. Elect. 2008	Pres. Elect. 2016	Gub. Elect. 1998
CURFIN: Personal financial situation from a year ago					
Partisanship (President)	0.074*** (0.025)	0.037 (0.025)	0.135*** (0.023)	0.091*** (0.026)	
Partisanship (Governor)					0.012 (0.018)
<i>N</i>	7,039	7,036	7,095	6,286	10,377
<i>R</i> ²	0.356	0.420	0.357	0.394	0.304
<i>F</i>	8.383 [0.004]	2.231 [0.135]	34.950 [0.000]	12.459 [0.000]	0.462 [0.497]
FUTFIN: Personal financial situation a year from now					
Partisanship (President)	0.120*** (0.022)	0.082*** (0.021)	0.167*** (0.023)	0.179*** (0.023)	
Partisanship (Governor)					0.033** (0.015)
<i>N</i>	6,586	6,791	6,840	6,191	10,012
<i>R</i> ²	0.383	0.431	0.370	0.422	0.335
<i>F</i>	28.677 [0.000]	14.826 [0.000]	53.010 [0.000]	62.250 [0.000]	5.112 [0.024]
USFUFI: Business conditions in the country as a whole in the next year					
Partisanship (President)	0.307*** (0.029)	0.323*** (0.029)	0.359*** (0.025)	0.443*** (0.026)	
Partisanship (Governor)					0.051** (0.020)
<i>N</i>	6,715	6,718	6,853	6,105	9,773
<i>R</i> ²	0.363	0.423	0.386	0.440	0.278
<i>F</i>	115.146 [0.000]	128.559 [0.000]	210.299 [0.000]	295.734 [0.000]	6.174 [0.013]
USNEX5: Business conditions in the country as a whole in the next five years					
Partisanship (President)	0.238*** (0.030)	0.234*** (0.029)	0.315*** (0.024)	0.460*** (0.026)	
Partisanship (Governor)					0.075*** (0.023)
<i>N</i>	6,675	6,733	6,925	6,167	9,745
<i>R</i> ²	0.350	0.416	0.358	0.420	0.278
<i>F</i>	64.439 [0.000]	63.654 [0.000]	173.386 [0.000]	321.519 [0.000]	10.954 [0.001]

The table reports estimates of β from the first-stage regression, equation (1). Each coefficient comes from a separate regression using individual-level data pooled one year before and one year after each election that resulted in a change in political leadership (see table 3). The variable *Partisanship* equals one whenever a survey respondent's party affiliation matches the political party winning the presidential/gubernatorial election. All regressions include MSA \times survey-month and zip code fixed effects. Between September 1993 and January 1999, the sample size of the Florida Consumer Attitude Survey doubled. The F-statistic tests whether the coefficient on the variable *Partisanship* is equal to zero. Robust standard errors are presented in parentheses, and p-values are shown in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 3 presents further evidence of the effect of partisanship on sentiment in the months before and after the presidential elections that ushered in a change in the party in power. The figure plots the coefficients (solid line) and the 95% confidence interval (shaded area) from a regression of sentiment on party affiliation interacted by the survey month, that is,

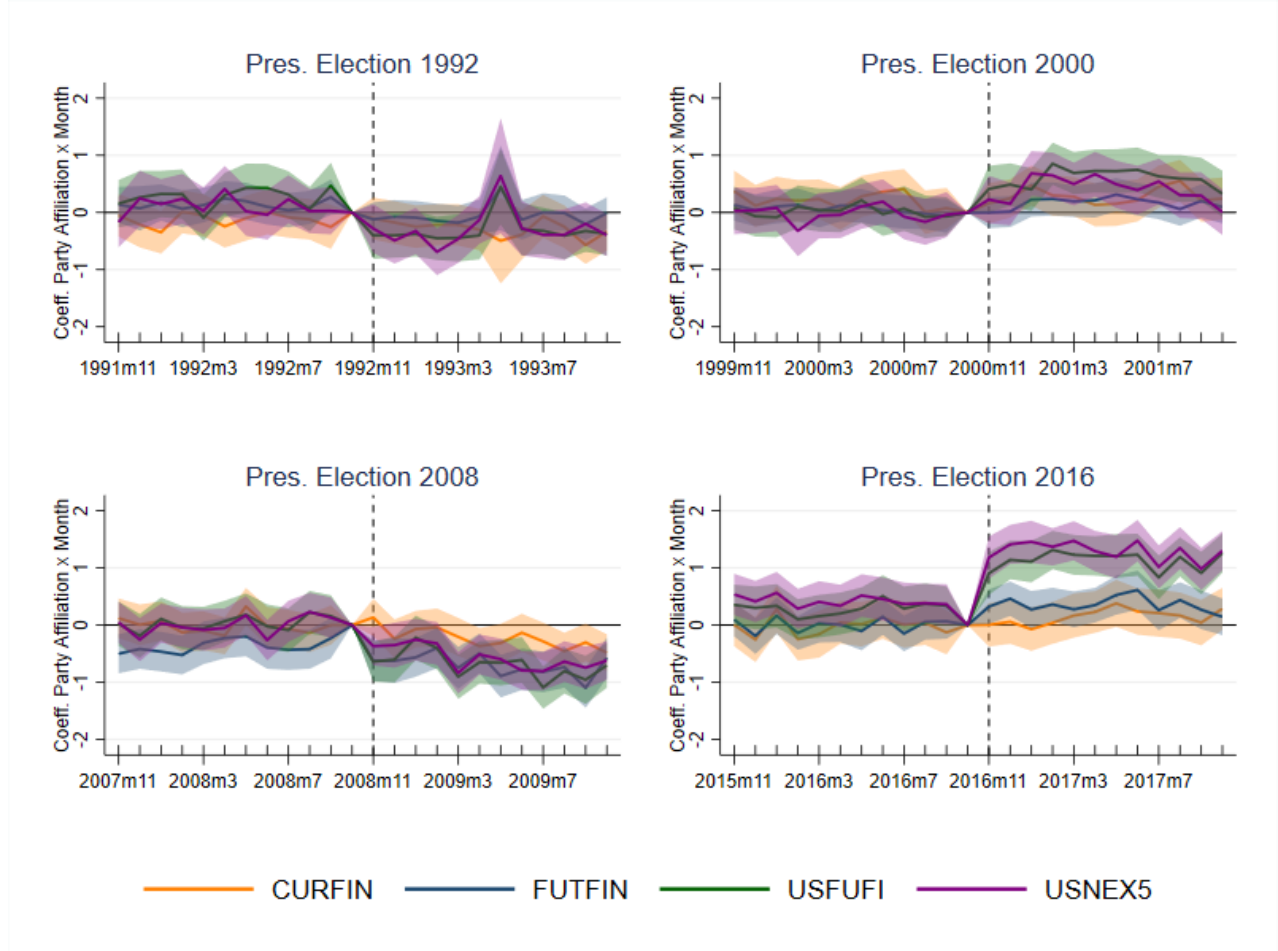
$$\begin{aligned}
\text{Sentiment}_{i,m} = & \sum_{m=1; m \neq 12}^{24} \alpha_m \times d_m + \beta \text{Party}_{i,m} + \sum_{m=1; m \neq 12}^{24} \beta_m (d_m \times \text{Party}_{i,m}) \\
& + \sum_{k=1}^K \gamma^k X_{i,m}^k + \sum_{m=1; m \neq 12}^{24} \sum_{k=1}^K \gamma_m^k (d_m \times X_{i,m}^k) + \zeta_{i,m},
\end{aligned} \tag{3}$$

where d_m is an indicator variable of the survey month, and the variable *Party* equals zero for Democrats and one for Republicans. The time frame for each regression is one year before and one year after the election: for example, from November 2015 to October 2017, for the 2016 presidential election. The omitted month in the regression corresponds to October ($m = 12$) of the presidential election year. X is the same vector of covariates used in equation (1). All regressions include MSA \times survey-month fixed effects as well as zip code fixed effects. Each figure measures the relative change in sentiment around the election for those affiliated with the Republican Party.

After the 1992 and 2008 presidential elections, when the governing party changed from Republican to Democrat, there was a statistically significant reduction in all four measures of sentiment among Republican supporters. Similarly, optimism about the economy increased among Republican supporters following Republican victories immediately after the 2000 and 2016 presidential elections. The positive (negative) impact of the favored (opposition) party winning on economic expectations has increased over time, consistent with the aforementioned increase in political polarization. Notably, expectations about the national economy were exceptionally high after the 2016 election relative to previous elections. Furthermore, figure 3 provides no evidence of any pre-trend in sentiment before the election, further validating our strategy.

Overall, partisanship has a large effect on sentiment, particularly on the questions about expectations of national economic conditions in the next year (USFUF1) and the next five years (USNEX5). Moreover, the change happens in November, immediately after the winner of the election becomes known.

Figure 3: Partisanship Around Presidential Elections



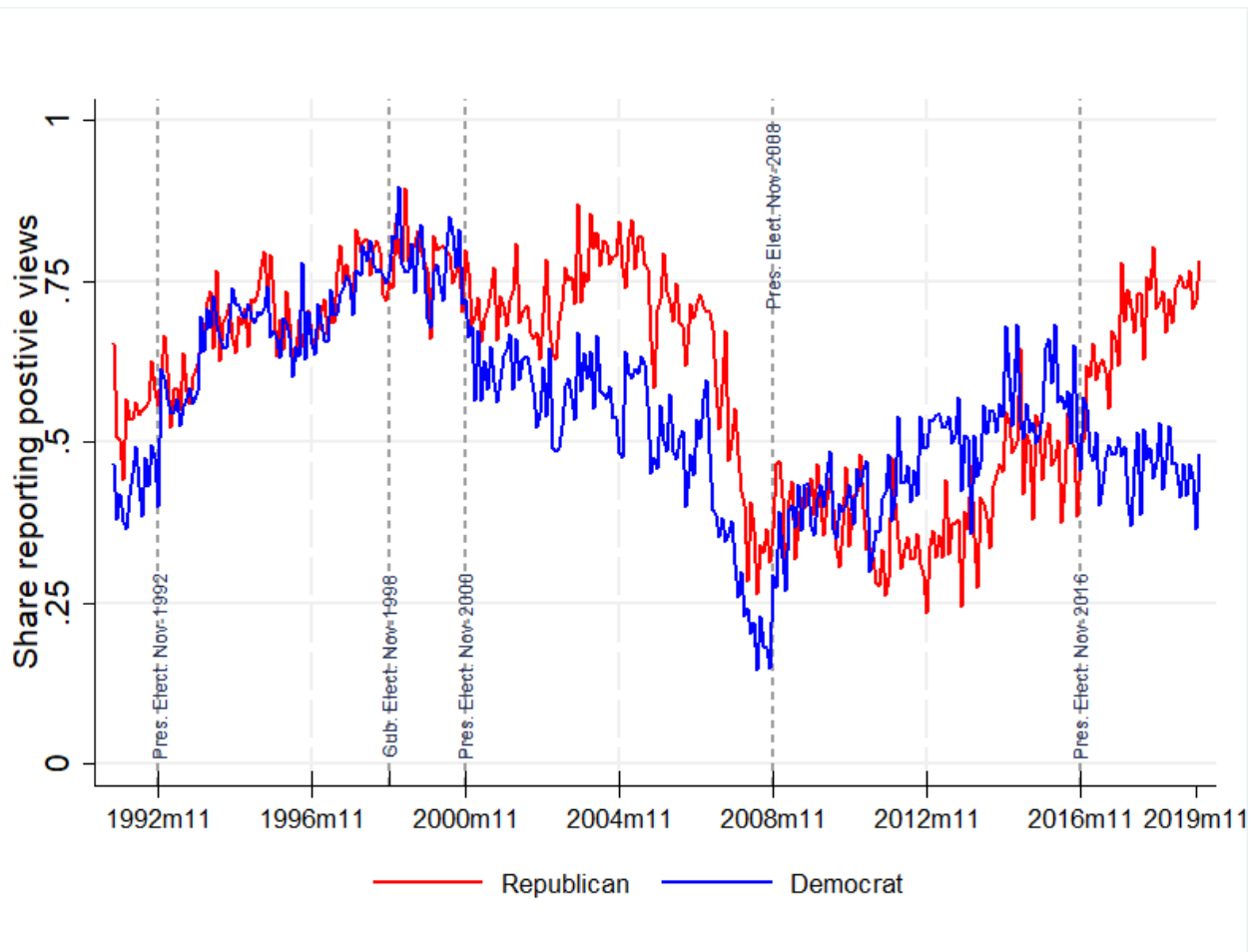
Data Source: University of Florida Consumer Attitude Survey. The figure plots the coefficient from a regression of sentiment on party affiliation interacted by the month, equation (3). Party affiliation equals zero for Democrats and one for Republicans. The omitted month in the regression corresponds to October ($m = 12$) of each presidential election year. Each panel covers one year before and one year after the presidential election. The shaded-area corresponds to the 95% confidence interval and the vertical dashed lines to the month of November.

3.2 Effect of Sentiment on Spending Intentions

We now examine the relationship between sentiment and spending intentions for major household items (GBTIME), our primary spending intentions variable. We start by showing reduced-form evidence of the relationship between partisanship and spending intentions. Figure 4 plots the share of those surveyed reporting positive (optimistic) responses to the spending intention question (GBTIME) by party affiliation. Respondents' perceptions about whether it is a good time to buy a major household item become more optimistic when the governing (presidential) party changes to a party affiliation to which they self-identify. Those perceptions analogously become more pessimistic when the presidential candidate they support loses. This trend is particularly evident for the Republican presidential election victories in 2000 and 2016, and the Democratic presidential election

victory in 2008. There is a similar, albeit weaker, effect for the Democratic presidential election victory in 1992.

Figure 4: Spending Intentions (GBTIME) by Party Affiliation



Data Source: University of Florida Consumer Attitude Survey. The figure plots the share of respondents reporting positive (optimistic) views on the spending intention questions (GBTIME) by party affiliation. See table 1 for the questions. The sample covers the period from September 1991 to December 2019. The vertical dashed lines correspond to the four presidential elections (1992, 2000, 2008, and 2016) that resulted in a change of the political party in office.

Table 5 presents our second-stage results. We report the estimates of δ from equation (2), which captures the causal effect of sentiment on spending intentions, for each sentiment question and for every presidential election that resulted in a change of the governing party. In addition, we include the F-statistics from a test of whether the coefficient on the instrument is zero in the first stage. Our estimates of the effect of sentiment on spending intentions are positive and significant across all specifications, but they vary by question and election year. Moreover, there is a noticeable distinction between backward- and forward-looking sentiment questions. The effect of opinions about current personal finances compared with a year ago (CURFIN), the only backward-looking

question, is significant and larger in magnitude than those from the forward-looking questions across all four presidential elections. However, we suggest caution when interpreting these estimates because the corresponding F-statistics suggest that *Partisanship* is a weak instrument in these specifications. The only election for which we can confidently say that CURFIN can be interpreted as providing causal evidence is 2008. In contrast, *Partisanship* is a strong instrument across all forward-looking questions, and particularly strong for the questions regarding national economic conditions (USFUF1 and USNEX5). Consumer expectations of personal finances a year from now (FUTFIN) have a positive and significant effect, with estimates ranging between 0.529 and 1.321. Similarly, expectations of national economic conditions in the short run and long run are significantly positive and range between 0.207 and 0.557. Moreover, our results indicate that spending intentions for major household items are more sensitive to expectations of the long-term health of the national economy (USNEX5) than to the short-term (USFUF1) during all election periods except the 2016 presidential election.¹⁵

Overall, our results provide strong empirical evidence that changes in sentiment have a causal effect on spending intentions. This effect is sizable considering that some estimates are more than one standard deviation of the spending intentions variable GBTIME (Rep=0.80, Dem=0.83).

¹⁵Similar conclusions about the relative importance of perceptions of personal finances on spending intentions are found among Australian consumers (Gillitzer and Prasad, 2018).

Table 5: Effect of Sentiment on Spending Intentions (GBTIME)

	(1)		(2)		(3)		(4)	
	Pres. Elect. 1992		Pres. Elect. 2000		Pres. Elect. 2008		Pres. Elect. 2016	
CURFIN: Personal financial situation from a year ago								
Sentiment	0.750**	(0.369)	3.156*	(1.778)	1.303***	(0.228)	1.878***	(0.450)
<i>N</i>	7,039		7,036		7,095		6,286	
<i>F</i>	8.383	[0.004]	2.231	[0.135]	34.950	[0.000]	12.459	[0.000]
FUTFIN: Personal financial situation a year from now								
Sentiment	0.529**	(0.219)	1.321***	(0.373)	1.069***	(0.174)	0.894***	(0.140)
<i>N</i>	6,586		6,791		6,840		6,191	
<i>F</i>	28.677	[0.000]	14.826	[0.000]	53.010	[0.000]	62.250	[0.000]
USFUFI: Business conditions in the country as a whole in the next year								
Sentiment	0.207***	(0.080)	0.335***	(0.070)	0.473***	(0.067)	0.366***	(0.049)
<i>N</i>	6,715		6,718		6,853		6,105	
<i>F</i>	115.146	[0.000]	128.559	[0.000]	210.299	[0.000]	295.734	[0.000]
USNEX5: Business conditions in the country as a whole in the next five years								
Sentiment	0.237**	(0.105)	0.503***	(0.102)	0.557***	(0.077)	0.355***	(0.047)
<i>N</i>	6,675		6,733		6,925		6,167	
<i>F</i>	64.439	[0.000]	63.654	[0.000]	173.386	[0.000]	321.519	[0.000]

The table reports estimates of δ from the second-stage regression, equation (2). Each coefficient comes from a separate instrumental variables regression using individual-level data pooled one year before and one year after each election that resulted in a change in political leadership (see table 3). The instrument *Partisanship* equals one whenever a survey respondent's party affiliation matches the political party winning the presidential election. All regressions include $MSA \times$ survey-month and zip code fixed effects. The F-statistic tests whether the coefficient on the instrument *Partisanship* equals zero in the first-stage. Robust standard errors are shown in parentheses, and p-values in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

3.3 Sensitivity Analysis

To examine the robustness of our results, we estimate a series of alternative specifications. Table 6 reports second-stage coefficients from instrumental variables regressions, and coefficients from bi-variate probit and ordinary least squares (OLS) regressions of the effect of sentiment on spending intentions. All specifications use individual-level data pooled one year before and one year after each election that resulted in a change in political leadership. The regressions include $MSA \times$ survey-month and zip code fixed effects, except for panels D and E (explained below). Table B2 in the appendix reports the corresponding first-stage results.

Panel A of Table 6 includes income categories interacted with an indicator of the survey month as covariates to our main specification, equations (1) and (2). Income is correlated with both sentiment and spending intentions, and thus its inclusion is important. We excluded it from our main

specification because it has a larger share of missing values than any other covariate. Nonetheless, after accounting for income, the coefficients on sentiment remain positive and significant across all specifications, but they are slightly lower in magnitude than our baseline results.

We next test the sensitivity of our time window, one year before and one year after each election, for our pooled regressions. Panels B and C of Table 6 report the coefficients considering three and six months before and after each election, respectively. These results show that the positive effect of sentiment on spending intentions is robust to the window chosen. The shorter time windows generate larger standard errors due to the corresponding sample size reduction and also result in weak instruments in some cases (see table B2 in the appendix). The instrument remains the strongest and still beyond conventional thresholds for the two forward-looking questions regarding expected national economic conditions (USFUF1 and USNEX5), thus supporting our findings. Two elements of the 2000 presidential election regression results merit emphasis. First, there is a sizable decrease in the relative impact of the question USFUF1 on spending intentions from the 3-month window to the 6-month window, and a negligible decrease from the 6-month window to the baseline one-year window. Second, the impact of question USNEX5 on spending intentions declines between the 3-month window and the 6-month window, but then increases for the one-year window around the 2000 presidential election.

In our third alternative specification, we test the sensitivity of our analysis to the use of metropolitan statistical areas (MSA) fixed effects. An MSA consists of one or more counties typically linked by social and economic factors; however, socio-demographics can differ across counties. For instance, the Gainesville MSA in Florida comprises Alachua and Gilchrist counties. The former is an urban county home of the state’s flagship university, while the latter is considered a rural county. Panel D of Table 6 reports the coefficients from a specification that interacts the survey-month indicators with an indicator of the county instead of the MSA.¹⁶ We are unable to also include zip code fixed effects in this specification due to sample size limitations. Our results remain robust to this specification.

Fourth, we recode the responses of spending intentions and sentiment to equal one whenever a respondent reported positive views and zero otherwise, and run bivariate probit regressions. Panel E of Table 6 reports the coefficients from this specification. All coefficients show a positive and statistically significant effect of sentiment on spending intentions. However, given that the instrument is not a continuous variable, we suggest caution when interpreting these results.¹⁷ Finally, panel F reports OLS coefficients, which are also statistically significant but biased downward relative to our estimates using instrumental variables.

As an additional robustness check, we run a series of falsification tests. We estimate equations

¹⁶Florida is divided into 22 MSAs, 67 counties, and 983 zip codes.

¹⁷Available maximum likelihood and Newey’s (1987) estimators assume that the endogenous covariates are continuous and so are not appropriate for use with discrete endogenous covariates.

(1) and (2) for each year between 1991 and 2018. For years in which the presidential elections resulted in a change in political leadership (1992, 2000, 2008, and 2016), the estimates correspond exactly to our main results. For all other years, our coefficients correspond to a placebo. That is, we act as if there was a presidential election in November of each year that resulted in a change of the party in office. For each regression, the sample considers one year before and one year after November (from October $t - 1$ to November $t + 1$). Figure B2 in the appendix reports estimates of the F-statistic and δ from the first- and second-stage regressions from this exercise, respectively. The first-stage F-statistics are triangles (right axis), and the second-stage coefficients are dots (left axis). The results show that *Partisanship* is a strong instrument in the years when the presidential elections resulted in a change of the party in office across the four sentiment questions with the exception of CURFIN. In other words, as expected, our instrument is weak in the placebo years. Moreover, the effect of sentiment on spending intentions is not significant in the placebo years. The only noticeable exception occurs in 2018, when the instrument is relatively strong and the effect of sentiment on spending intentions is significant.¹⁸

Overall, the sensitivity analysis shows that our results are robust to a wide variety of alternative specifications. This analysis provides further empirical evidence of the causal relationship between sentiment and spending intentions.

¹⁸Given the increased political polarization, the 2018 midterm election was particularly relevant because of Republican victories in the highly-publicized, contentious, and close Florida governor’s race, as well as both U.S. Senate races in Florida. One senate seat flipped from a Democratic to a Republican-controlled seat while Republicans retained power in the other senate seat. Meanwhile, Democrats won control of the House of Representatives, the lower house of the U.S. Congress. Republicans had held a House majority since 2011.

Table 6: Effect of Sentiment on Spending Intentions (GBTIME): Sensitivity Analysis

	(1)		(2)		(3)		(4)	
	Pres.	Elect. 1992	Pres.	Elect. 2000	Pres.	Elect. 2008	Pres.	Elect. 2016
Panel A. Income								
CURFIN	0.628*	(0.367)	2.173**	(0.956)	1.318***	(0.313)	1.840***	(0.475)
FUTFIN	0.438*	(0.240)	1.357***	(0.456)	0.869***	(0.172)	0.875***	(0.148)
USFUF1	0.188**	(0.085)	0.324***	(0.074)	0.388***	(0.071)	0.350***	(0.052)
USNEX5	0.237**	(0.120)	0.486***	(0.110)	0.511***	(0.090)	0.338***	(0.049)
Panel B. 6-month window								
CURFIN	1.219	(0.882)	2.554*	(1.535)	0.982***	(0.304)	3.695	(2.934)
FUTFIN	0.879**	(0.413)	1.800**	(0.828)	0.746***	(0.232)	0.728***	(0.208)
USFUF1	0.221**	(0.104)	0.339***	(0.099)	0.384***	(0.106)	0.294***	(0.072)
USNEX5	0.359**	(0.177)	0.484***	(0.130)	0.444***	(0.123)	0.258***	(0.063)
Panel C. 3-month window								
CURFIN	0.722	(0.648)	2.038**	(0.933)	5.264	(6.340)	2.901	(4.491)
FUTFIN	0.577	(0.403)	-10.007	(17.922)	0.803***	(0.255)	0.376	(0.281)
USFUF1	0.402**	(0.193)	0.732***	(0.182)	0.642***	(0.204)	0.277**	(0.126)
USNEX5	0.590	(0.377)	1.315***	(0.444)	0.574***	(0.188)	0.182*	(0.098)
Panel D. Month x County FE								
CURFIN	0.845**	(0.423)	4.256	(3.214)	1.408***	(0.253)	1.866***	(0.457)
FUTFIN	0.562**	(0.222)	1.189***	(0.320)	1.078***	(0.179)	0.914***	(0.151)
USFUF1	0.214***	(0.078)	0.356***	(0.072)	0.477***	(0.067)	0.366***	(0.050)
USNEX5	0.254**	(0.103)	0.519***	(0.108)	0.567***	(0.078)	0.357***	(0.049)
Panel E. Probit								
CURFIN	2.320***	(0.248)	2.305***	(0.024)	2.797***	(0.151)	2.193***	(0.078)
FUTFIN	1.418***	(0.469)	2.107***	(0.108)	2.041***	(0.129)	1.703***	(0.142)
USFUF1	0.452**	(0.226)	1.366***	(0.180)	1.450***	(0.187)	0.942***	(0.120)
USNEX5	0.593**	(0.268)	1.403***	(0.187)	1.416***	(0.171)	0.876***	(0.114)
Panel F. OLS								
CURFIN	0.185***	(0.017)	0.140***	(0.017)	0.217***	(0.018)	0.197***	(0.016)
FUTFIN	0.113***	(0.021)	0.139***	(0.022)	0.178***	(0.019)	0.174***	(0.020)
USFUF1	0.172***	(0.016)	0.187***	(0.016)	0.222***	(0.017)	0.223***	(0.017)
USNEX5	0.113***	(0.015)	0.121***	(0.016)	0.237***	(0.017)	0.206***	(0.017)

The table reports second-stage coefficients. Each coefficient comes from a separate instrumental variables regression (except for the coefficients in Panels E and F, which come from a bivariate probit regression and a linear regression, respectively) using individual-level data pooled before and after each election that resulted in a change in political leadership (see table 3). The instrument *Partisanship* equals one whenever a survey respondent's party affiliation matches the political party winning the presidential election. All regressions include $MSA \times$ survey-month and zip code fixed effects (except for Panels D and E). Robust standard errors are shown in parentheses, and p-values are shown in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4 Other Spending Intentions Questions

In this section, we exploit the richness of our consumer sentiment survey data by estimating the effect of sentiment on responses to six additional questions related to planned spending to buy a car, house, and retail purchases. These questions are asked less frequently than GBTIME, and some

are unique to the Florida Consumer Attitude Survey.¹⁹ The first two questions concern planned spending on a car (PLANBC) and a house (PLANBH), and were both asked monthly between 1991 and 1997. For these questions, we focus on changes around the 1992 presidential election. The next three questions are about planned spending on holiday merchandise (MERCH), gift cards (GCARDS), and apparel (APPAREL). These three questions were asked several months before and after the 2008 presidential election. The last question (HOMEGEN) is also related to buying a house, and was only asked between October and November of 2016, that is, right before and after the 2016 presidential election. The wording of each question is reported in table 1. Figure B3 in the appendix provides reduced-form evidence, that is, evidence of the relationship between partisanship and spending intentions (analogous to figure 4). Although the difference in spending intentions between Republican and Democratic supporters for each of the six measures is not as pronounced as with GBTIME, our empirical strategy remains valid. Thus, we are able to identify the effect of sentiment on spending intentions.

Table 7 contains the estimates from our first- and second-stage regressions. As with our main variable GBTIME, we report estimates of β from equation (1) and estimates of δ from equation (2) for each of our six additional spending questions. The latter coefficient captures the causal effect of sentiment on spending intentions. Columns (1) and (2) consider the questions PLANBC and PLANBH using data pooled one year before and one year after the 1992 presidential election. Columns (3) through (5) contain the estimates for the three retail questions, MERCH, GCARDS, and APPAREL, respectively, pooling all available data for each question. Column (6) reports estimates using the question HOMEGEN and pooling the available data around the 2016 presidential election. The results from the first stage show that party affiliation has a positive and statistically significant effect on sentiment, with the exception of CURFIN and FUTFIN when considering the question HOMEGEN (Column 6). This exception is likely due to the limited sample size available for the HOMEGEN question. The estimates are comparable to our baseline specification, with the largest effects found on the two forward-looking questions regarding expected national economic conditions (USFUF1 and USNEX5). The F-statistics from a test of whether the coefficient on *Partisanship* is zero are small for CURFIN across all questions and for FUTFIN in four of six questions, thus indicating the presence of a weak instrument. However, as before, the F-statistic for USFUF1 and USNEX5 across all six questions are beyond any conventional threshold and are particularly large for the spending intention questions: PLANBC, PLANBH, and MERCH.

Similarly, the second-stage estimates show a positive and significant effect of sentiment on al-

¹⁹The University of Michigan Survey of Consumers in the U.S. and the Australian Westpac-Melbourne Institute Survey of Consumer Sentiment occasionally include questions that measure consumer spending intentions for purchasing a new vehicle (comparable to PLANBC) and buying a house (comparable to PLANBH). However, they do not include questions related to retail purchases. Gillitzer and Prasad (2018) estimate the effect of sentiment on spending intentions on automobiles and find that improvements in expectations lead to an increase in automobile spending intentions. However, this variable is reported at different frequencies within their survey period.

most all spending intentions measures, though the estimates are smaller in magnitude than for our baseline, GBTIME. As before, we observe that while the effect of CURFIN tends to be larger in magnitude than the estimates from the forward-looking questions, the corresponding instrument is weak. We also observe that spending intentions are more sensitive to expectations about the health of the national economy in the long run than in the short run. Overall, our additional results increase the evidence base of the causal effect of sentiment on spending intentions.

Table 7: Effect of Sentiment on Spending Intentions: Specific Questions

	(1)		(2)		(3)		(4)		(5)		(6)	
	PLANBC		PLANBH		MERCH		GCARDS		APPAREL		HOMEGEN	
	Pres. Elect. 1992		Pres. Elect. 1992		Pres. Elect. 2008		Pres. Elect. 2008		Pres. Elect. 2008		Pres. Elect. 2016	
CURFIN: Personal financial situation from a year ago												
Partisanship (β)	0.067***	(0.025)	0.069***	(0.025)	0.160***	(0.050)	0.166***	(0.057)	0.196***	(0.056)	0.218	(0.227)
Sentiment (δ)	0.556*	(0.317)	0.314	(0.211)	0.593***	(0.184)	0.410*	(0.212)	0.415**	(0.170)	0.812*	(0.464)
N	7,324		7,360		2,503		2,170		2,277		553	
R^2	0.347		0.345		0.505		0.560		0.541		0.775	
F	7.733	[0.007]	7.842	[0.005]	10.315	[0.001]	8.325	[0.004]	12.137	[0.001]	0.922	[0.339]
FUTFIN: Personal financial situation a year from now												
Partisanship (β)	0.116***	(0.022)	0.120***	(0.022)	0.145***	(0.047)	0.131***	(0.050)	0.148***	(0.050)	0.253	(0.208)
Sentiment (δ)	0.347**	(0.168)	0.158	(0.118)	0.570**	(0.230)	0.344	(0.278)	0.668**	(0.274)	0.644*	(0.392)
N	6,843		6,873		2,415		2,102		2,214		541	
R^2	0.370		0.369		0.565		0.635		0.607		0.842	
F	28.688	[0.000]	30.733	[0.000]	9.484	[0.002]	7.016	[0.008]	8.791	[0.003]	1.471	[0.228]
USFUFI: Business conditions in the country as a whole in the next year												
Partisanship (β)	0.301***	(0.028)	0.304***	(0.028)	0.368***	(0.048)	0.412***	(0.055)	0.399***	(0.054)	0.710***	(0.192)
Sentiment (δ)	0.144**	(0.062)	0.092**	(0.046)	0.241***	(0.081)	0.142*	(0.085)	0.209**	(0.083)	0.287**	(0.114)
N	6,952		6,982		2,420		2,101		2,205		527	
R^2	0.355		0.354		0.560		0.617		0.606		0.849	
F	117.423	[0.000]	120.177	[0.000]	58.372	[0.000]	55.974	[0.000]	55.302	[0.000]	13.726	[0.000]
USNEX5: Business conditions in the country as a whole in the next five years												
Partisanship (β)	0.240***	(0.029)	0.241***	(0.029)	0.316***	(0.048)	0.306***	(0.056)	0.315***	(0.054)	0.819***	(0.217)
Sentiment (δ)	0.157**	(0.080)	0.099*	(0.059)	0.268***	(0.094)	0.186	(0.114)	0.250**	(0.104)	0.178*	(0.091)
N	6,920		6,951		2,450		2,134		2,235		532	
R^2	0.342		0.342		0.534		0.586		0.574		0.842	
F	68.398	[0.000]	69.760	[0.000]	43.068	[0.000]	30.043	[0.000]	33.599	[0.000]	14.277	[0.000]

The table reports estimates of β and δ from the first- and second-stage regression, equations (1) and (2), respectively. Each coefficient comes from a separate instrumental variables regression using individual-level data pooled before and after each election that resulted in a change in political leadership (see table 3). The available data varies by spending intention question. Questions PLANBC and PLANBH use data one year before and one year after the 1992 presidential election. Questions MERCH, GCARDS, and APPAREL are available for September, November, and December 2007; September, October, and November 2008; and October, November, and December 2009. Question HOMEGEN is available for October and November 2016. The instrument *Partisanship* equals one whenever a survey respondent's party affiliation matches the political party winning the presidential election. All regressions include MSA \times survey-month and zip code fixed effects. The F-statistic tests whether the coefficient on the instrument *Partisanship* equals zero in the first-stage. Robust standard errors are shown in parentheses, and p-values in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

5 Evidence on Actual Spending

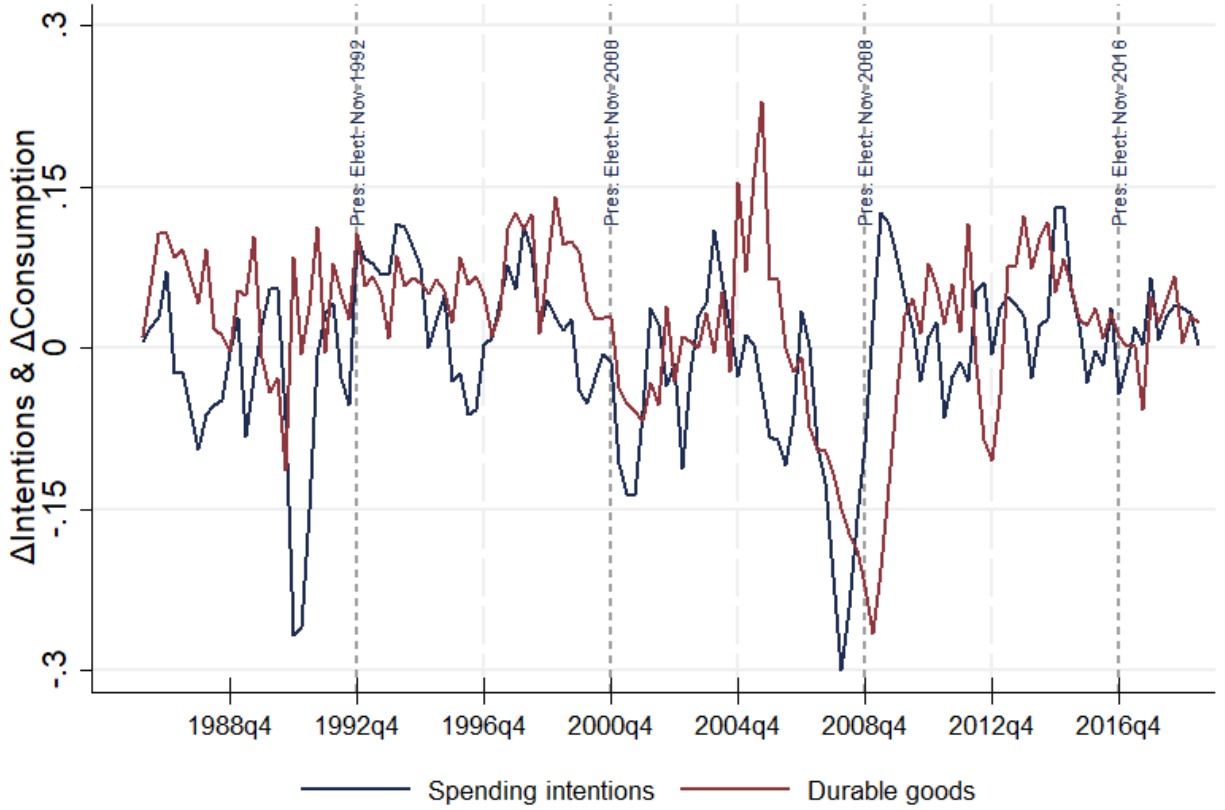
In this section, we provide empirical evidence regarding the relationship between spending intentions, our GBTIME variable, and consumption using time-series data at the state level. We also provide cross-sectional evidence on changes in consumption following the 2016 presidential election using county-level data.

Consumption data is typically scarce, even at the state level. For instance, data on personal consumption expenditures from the Bureau of Economic and Analysis (BEA) is only available at an annual frequency at the state level and unavailable at more disaggregated geographies. We use gross sales tax data from the Florida Department of Revenue, which come from sales tax returns filed monthly by retailers across the 67 counties in Florida. Using this data and following the BEA’s definitions of different consumption expenditure measures as a guideline, Sandoval and Walsh (2021) constructed several measures of consumption at the state level for Florida over the period 1985 to 2019. For our analysis, we use their consumption data on three categories of spending—durable goods, autos, and durable goods excluding autos—to study the relationship between spending intentions and consumption. Extending their approach, we further construct these three measures of consumption at the county level monthly between 2015 and 2017, that is, around the 2016 presidential election.²⁰

Figure 5 plots the quarterly year-over-year growth rate of spending intentions (GBTIME) and real consumption in durable goods. It provides some evidence that spending intentions tracks consumption in durable goods, although not perfectly. Overall, the correlation coefficient is a statistically significant 0.29.

²⁰Appendix B in Sandoval and Walsh (2021) contains a detailed description of the construction of these consumption measures at the state level and shows that these measures approximate the BEA’s annual consumption for Florida.

Figure 5: Spending Intentions and Consumption in Durable Goods



Data Source: University of Florida Consumer Attitude Survey and Florida Department of Revenue. The figure plots the quarterly year-over-year growth rate of spending intentions (GBTIME) and real consumption in durable goods. The sample covers the period from 1985:Q1 to 2019:Q2. The time-series of consumption in durable goods is constructed from Florida's gross sales tax data from the state's Department of Revenue.

We employ a Granger causality test on state level data to determine how changes in consumption (durable goods, autos, and durables excluding autos) and spending intentions (GBTIME) are related. Table 8 reports the p-values from the small-sample F statistic (instead of the usual large-sample χ^2 statistic) of the hypothesis that all coefficients on two (or four) lags of the variable are jointly zero in the corresponding equation, that is, that causality does not run from changes in spending intentions to changes in consumption and/or the other way around. Columns (1), (3), and (5) report the p-values on two (or four) lags for a specification that considers only spending intentions and consumption in durable goods, autos, and durables excluding autos, respectively. Columns (2), (4), and (6) report the p-values on two (or four) lags of spending intentions or durable goods for a specification that also includes economic fundamentals typically used in the consumer confidence forecasting literature (Bram and Ludvigson, 1998). In particular, we include two (or

four) lags of the quarterly difference from a year ago of the log of real labor income, the log of the real stock price index (measured by the Standard & Poor’s 500 Index), and the 3-month Treasury Bill rate.

The results shown in the odd-numbered columns reject the null hypothesis that spending intentions do not Granger-cause consumption in durable goods and autos; however, we fail to reject it when considering durables excluding autos. Moreover, in most cases except column (2), we fail to reject the null that causality does not run from changes in consumption to changes in spending intentions. Similar conclusions can be drawn from the results from the specification that also considers economic fundamentals (even-numbered columns).

Table 8: Granger Causality between Spending Intentions and Consumption

	(1)	(2)	(3)	(4)	(5)	(6)
	Durable Goods		Autos		Dur. excl. autos	
Two lags						
Cons. \leftrightarrow Spend. Int.	0.005	0.045	0.003	0.002	0.144	0.959
Cons. \rightarrow Spend. Int.	0.888	0.079	0.793	0.100	0.798	0.444
Four lags						
Cons. \leftrightarrow Spend. Int.	0.015	0.300	0.005	0.040	0.149	0.743
Cons. \rightarrow Spend. Int.	0.776	0.348	0.104	0.110	0.495	0.261

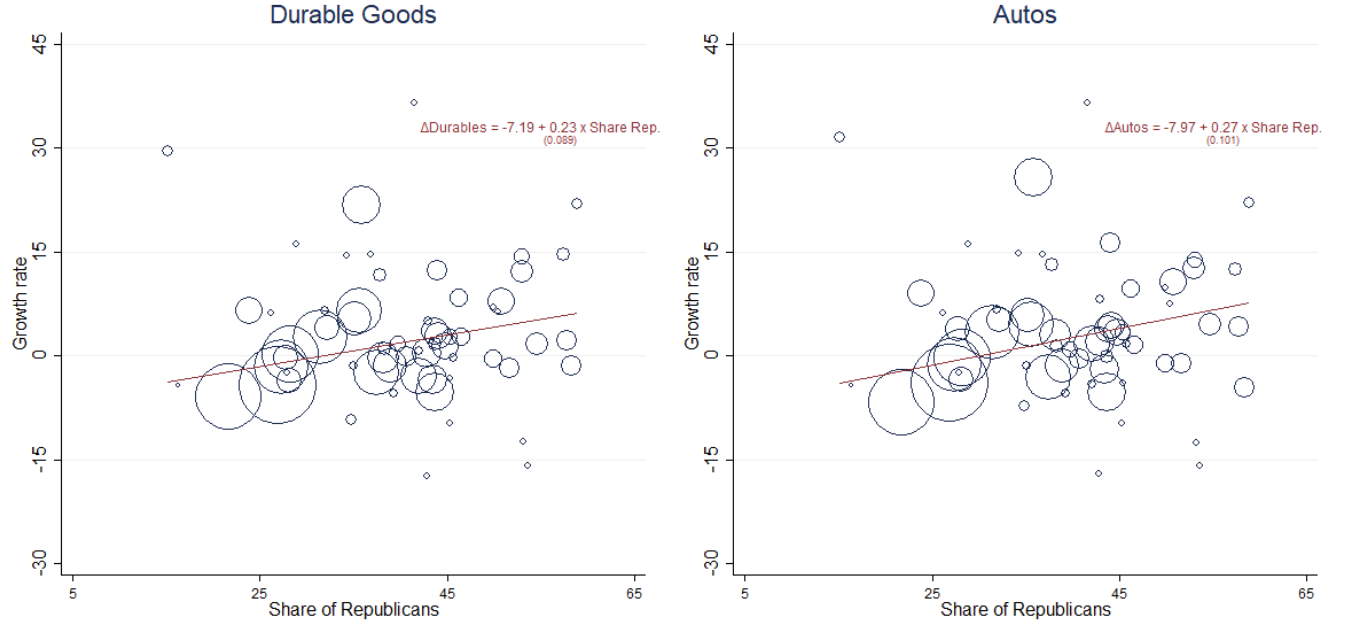
The table reports the p-values from the small-sample F statistic of the hypothesis that all coefficients on two (or four) lags of the variable are jointly zero in the corresponding equation. *Cons* stands for consumption in durable goods, autos, or durables minus autos, and *Spend. Int.* stands for spending intentions (GBTIME). Columns (1), (3), and (5) report the p-values on two (or four) lags for a specification that considers only spending intentions and consumption. Columns (2), (4), and (6) report the p-values for a specification that also includes two (or four) lags of the quarterly difference from a year ago of the log of real labor income, the log of the real stock price index (measured by the Standard & Poor’s 500 Index), and the 3-month Treasury Bill rate.

Our results from previous sections show a robust and statistically significant relationship between sentiment and spending intentions. To assess whether there is any effect on actual spending, we investigate whether counties with a larger share of registered Republican voters experienced higher growth rates in consumption after the 2016 presidential election. We use data on consumption of durable goods, autos, and durables excluding autos, which are based on gross sales tax data from Florida, as explained above. Figure 6 contains scatter plots of county-level data of the consumption growth rate in durable goods and autos, and the share of voters identified as Republican.²¹ The growth rate compares consumption in February, March, and April of 2017 (after the 2016 presidential election) to the consumption in the same months a year earlier (before the election). The figure

²¹Voter data comes from the monthly report of voter registration by party affiliation from the Florida Department of State. We use the vote share corresponding to October 2016. Nonetheless, our results are robust to other choices since vote shares across counties do not change significantly between 2015 and 2017.

shows a positive and significant relationship on both consumption measures. In other words, counties with a larger share of Republicans experienced larger growth rates in consumption of durable goods and autos following the 2016 election.

Figure 6: Consumption in Durable Goods and Share of Republican Voters



Data Source: Florida Department of Revenue and Florida Department of State. The figure shows scatter plots of county-level data of consumption (durable goods and autos) growth rate and the voter share identified as Republicans. The growth rates compare consumption in February, March, and April after the 2016 presidential election to consumption in the same months a year ago. The voter share corresponds to the vote share recorded in October 2016. This data comes from the Florida Department of State. Counties are weighted by the 2016 mid-year population. The regression corresponds to Panel B columns (1) and (4) of table 9. There are 67 counties in Florida; the figure excludes four counties identified as outliers.

We also consider other periods to calculate the consumption growth rates before and after the election. In particular, we compare consumption in November, December, and January following the 2016 election to the consumption in the same period a year earlier; consumption between November 2016 and April 2017 to consumption a year earlier; and consumption in the first quarter of 2017 to consumption in the third quarter of 2016. The latter growth rate (2016q3-2017q1) corresponds to the one employed by Gerber and Huber (2009) and McGrath (2017) in their analysis. We run several regressions of these consumption growth rates on the Republican voter county share, weighting the counties by population. In some specifications we exclude outliers and include two consumption lags and the unemployment rate as controls. Table 9 contains the results from these exercises. Our results indicate no significant effect on the consumption growth rate in the first three months following the election (November, December, and January); however, a significant

and robust relationship exists when looking at changes in consumption in the subsequent three months (February, March, and April). This effect is positive and significant for consumption in durable goods and autos. The results are sizable. For instance, considering the estimates in Panel B column (3), the effect of increasing the county share of Republican voters from zero to 100 percent, increases consumption in durable goods by 21 percent.

Table 9: Relationship between Consumption and Party Affiliation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Durables			Autos			Dur. excl. Autos		
Panel A: Nov 2016 - Jan 2017 vs. Nov 2015 - Jan 2016									
Share Rep.	0.068 (0.112)	0.016 (0.100)	0.016 (0.100)	0.215 (0.133)	0.161 (0.115)	0.161 (0.115)	-0.208 (0.176)	-0.225* (0.126)	-0.225* (0.126)
R^2	0.009	0.297	0.291	0.066	0.347	0.341	0.034	0.501	0.501
N	63	67	63	63	67	63	54	53	52
Panel B: Feb 2017 - Apr 2017 vs. Feb 2016 - Apr 2016									
Share Rep.	0.228** (0.089)	0.195*** (0.066)	0.210*** (0.065)	0.267** (0.101)	0.150* (0.088)	0.160* (0.087)	0.098 (0.079)	0.174** (0.066)	0.174** (0.066)
R^2	0.109	0.257	0.434	0.122	0.272	0.415	0.026	0.179	0.179
N	63	67	63	63	67	63	54	53	52
Panel C: Nov 2016 - Apr 2017 vs. Nov 2015 - Apr 2016									
Share Rep.	0.145 (0.092)	0.187** (0.086)	0.179** (0.084)	0.234** (0.101)	0.249*** (0.081)	0.248*** (0.083)	-0.071 (0.115)	0.010 (0.089)	0.010 (0.089)
R^2	0.055	0.271	0.261	0.112	0.451	0.451	0.010	0.339	0.340
N	63	67	63	63	67	63	54	53	52
Panel D: Gerber & Huber, 2017:Q1 vs. 2016:Q3									
Share Rep.	0.186 (0.120)	0.239** (0.099)	0.250** (0.094)	0.189 (0.135)	0.277** (0.105)	0.303*** (0.100)	0.182 (0.134)	0.090 (0.092)	0.090 (0.092)
R^2	0.048	0.271	0.397	0.043	0.288	0.407	0.037	0.509	0.508
N	63	67	63	63	67	63	54	55	54
Controls	N	Y	Y	N	Y	Y	N	Y	Y
Outliers	N	Y	N	N	Y	N	N	Y	N

The table reports estimates of regressions of consumption growth rates on the Republican voter county share, weighting the counties by population. The specification includes two lags of the consumption growth and unemployment rate. There are 67 counties in Florida; the table excludes four counties—Franklin, Glades, Hamilton, and Lafayette counties—that were outliers. Robust standard errors are shown in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6 Discussion

Our work builds on the research conducted by Gillitzer and Prased (2018), who identify a causal effect of consumer sentiment on consumer spending intentions in Australia. Following their empirical strategy, we similarly identify a causal relationship between sentiment and spending intentions in

Florida.

Additionally, the data source we use is similar in many ways to the national University of Michigan’s Survey of Consumers. However, conducting a similar study at the national level is not without its own challenges. The University of Michigan’s Survey of Consumers has only recently added a permanent political affiliation question to its monthly survey beginning in 2017. Between 1980 to 2017, the Michigan survey’s party affiliation question was asked intermittently and commonly did not coincide with the months surrounding presidential elections. The exceptions are the 2008 and 2020 presidential elections.²² However, the concurrent COVID-19 pandemic adds additional empirical challenges to analysis of the 2020 presidential election.

We distinguish our work from related studies that use variation in individual partisan bias to study the causal effect of sentiment on economic activity. Contrary to our results, Mian et al. (2018) find no evidence that shifts in sentiment after the 2008 and 2016 presidential elections caused changes in U.S. household spending. The authors focus on sentiment-driven shifts in actual spending rather than spending intentions. However, their analysis relies on an imputed measure of party affiliation to study the casual effect of sentiment on changes in auto purchases and credit card spending. Additionally, the authors’ base measure of sentiment is the Michigan Index of Consumer Expectations — a composite of FUTFIN, USFUF1, and USNEX5. Our analysis studies the heterogeneity in these measures of sentiment and find that although partisan bias most strongly affects consumers expectations on the national economy (USFUF1 and USNEX5) our second stage analysis provides evidence consumers expectations about their personal financial situations (FUTFIN) is a stronger determinant of individual’s intention to buy major household items. Benhabib and Spiegel (2019) also uses a proxy for party affiliation — the share of state congressional representatives from the same political party as the sitting president — to study the effect of sentiment on U.S. state output growth, not spending intentions. However, they find a similar positive effect of partisan bias on consumer sentiment in their first-stage analysis.

7 Conclusions

George Katona, behavioral economist and founding father of consumer confidence measures, created the first consumer sentiment survey nearly 75 years ago. Katona founded the University of Michigan’s Survey of Consumers to model the role of consumer attitudes in discretionary spending and savings decisions in the U.S. Hence, measures of consumer sentiment are considered important leading indicators that reflect changes in household spending and thus economic activity.

Despite this long history, empirical evidence of the causal relationship between sentiment and consumption is mixed and scarce. We employ individual-level data from the monthly Florida Con-

²²The party affiliation question is unavailable from November 2016 to January 2017. Therefore, we cannot observe the shift in sentiment immediately after the 2016 presidential election.

sumer Attitude Survey that allow us to match party affiliation, consumer sentiment, and spending intentions at the individual level to address this issue. Our analysis takes advantage of the sharp shifts in sentiment observed immediately after elections that changed the political party in government to identify the causal effect of sentiment on spending intentions. In particular, our analysis covers the period between 1991 and 2019, which comprises four U.S. presidential elections (1992, 2000, 2008, and 2016) and one gubernatorial election in Florida (1998) that resulted in a change of the party in office.

Our analyses generate four primary conclusions. First, party affiliation has a positive and statistically significant effect on all four measures of sentiment for every election considered. The only exception is the backward-looking question (CURFIN) during the 2000 presidential election and the 1998 Florida gubernatorial election. Moreover, the results indicate that partisanship is a strong instrument, with F-statistics beyond conventional thresholds across all presidential elections. However, the instrument is weak in the gubernatorial race studied. Overall, partisanship has a large effect on sentiment, particularly on the forward-looking questions about expectations of national economic conditions in the next year (USFUF1) and the next five years (USNEX5).

Second, considering our main spending intention question, “*Do you think now is a good or a bad time for people to buy major household items?*,” our results show a statistically significant relationship between sentiment and spending intentions. This effect is sizable and robust across the four presidential elections in our sample that led to a change in governing party as well as to a variety of robustness checks.

Third, results based on our six additional spending intentions questions, which capture planned spending on buying a car, a house, holiday merchandise, gift cards, and apparel, are also positive and significant. Moreover, we also observe that spending intentions are more sensitive to expectations about the health of the national economy in the long run than in the short run.

Finally, using state- and county-level gross sales tax data, we provide evidence that spending intentions are indicative of actual spending and show that spending increased more among counties with larger shares of Republican voters following the 2016 presidential election.

Overall, our results indicate a robust causal effect of sentiment measures that are based on forward-looking questions about spending intentions and provide empirical evidence that changes in actual spending also follows.

Policymakers can benefit from state-level analysis of consumer behavior. While state and local economies all benefit from increased consumer spending, there is heterogeneity in state revenue based on industry composition within each state. Hence, more U.S. states should consider investment in consumer sentiment surveys to better understand state level trends in consumer spending.²³

²³The Conference Board reports consumer sentiment indexes for California, Texas, New York, Florida, Illinois, Pennsylvania, Ohio, and Michigan. However, to the best of our knowledge, this survey lacks a political party affiliation question.

Although our empirical evidence comes from Florida, we do not believe this severely limits the potential generalizability of our findings to the national scale for several reasons. First, our main results apply more broadly, as they correspond to sentiment and spending intentions among consumers in general. Second, Florida’s consumer sentiment indexes are highly correlated with the Michigan indexes — after which they are modeled — which implies that consumer economic optimism generally trends the same way for everyone. Moreover, Florida is a suitable case study because it is the third most populated state and the fourth largest state economy (in GDP terms). The state’s large population reflects the economic and demographic diversity in the U.S. Although Florida has a slightly older and more racially diverse population than the national average, our specifications control for these individual demographics. Additionally, Florida is widely recognized as a political battleground state whose presidential election outcome is not predetermined, and, in fact, typically mirrors the national results.²⁴ Thus, the political landscape and demographics in Florida make it an appealing location for our analysis.

Furthermore, we find that partisanship is an important covariate. Thus, it might be valuable for researchers if it is included in other surveys that capture economic data, not only consumer sentiment.

²⁴Florida presidential election results mirror the national results for all elections within our sample period except for the 1992 presidential election.

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References

- [1] ACEMOGLU, D., AND SCOTT, A. Consumer confidence and rational expectations: Are agents' beliefs consistent with the theory? *The Economic Journal* 104, 422 (1994), 1–19.
- [2] ANDRIS, C., LEE, D., HAMILTON, M. J., MARTINO, M., GUNNING, C. E., AND SELDEN, J. A. The rise of partisanship and super-cooperators in the U.S. House of Representatives. *Plos One* 10, 4 (2015).
- [3] BARSKY, R. B., AND SIMS, E. R. Information, animal spirits, and the meaning of innovations in consumer confidence. *American Economic Review* 102, 4 (2012), 1343–77.
- [4] BENHABIB, J., AND SPIEGEL, M. M. Sentiments and economic activity: Evidence from us states. *The Economic Journal* 129, 618 (2019), 715–733.
- [5] BLANCHARD, O. J., L'HUILLIER, J.-P., AND LORENZONI, G. News, noise, and fluctuations: An empirical exploration. *American Economic Review* 103, 7 (2013), 3045–70.
- [6] BLINDER, A. S., AND WATSON, M. W. Presidents and the US economy: An econometric exploration. *American Economic Review* 106, 4 (2016), 1015–45.
- [7] BRAM, J., AND LUDVIGSON, S. C. Does consumer confidence forecast household expenditure? a sentiment index horse race. *Economic Policy Review* 4, 2 (1998), 59–78.
- [8] CARROLL, C. D., FUHRER, J. C., AND WILCOX, D. W. Does consumer sentiment forecast household spending? If so, why? *American Economic Review* 84, 5 (1994), 1397–1408.
- [9] CURTIN, R. Consumer sentiment surveys: Worldwide review and assessment. *Journal of Business Cycle Measurement and Analysis* 2007, 1 (2007), 7–42.
- [10] DÉES, S., AND ZIMIC, S. Animal spirits, fundamental factors and business cycle fluctuations. *Journal of Macroeconomics* 61 (2019), 103123.

- [11] EASAW, J. Z., GARRATT, D., AND HERAVI, S. M. Does consumer sentiment accurately forecast UK household consumption? Are there any comparisons to be made with the US? *Journal of Macroeconomics* 27, 3 (2005), 517–532.
- [12] GERBER, A. S., AND HUBER, G. A. Partisanship and economic behavior: Do partisan differences in economic forecasts predict real economic behavior? *American Political Science Review* 103, 3 (2009), 407–426.
- [13] GILLITZER, C., AND PRASAD, N. The effect of consumer sentiment on consumption: Cross-sectional evidence from elections. *American Economic Journal: Macroeconomics* 10, 4 (2018), 234–69.
- [14] JACOBSON, G. C. Partisan polarization in presidential support: The electoral connection. *Congress & the Presidency* 30, 1 (2003), 1–36.
- [15] JACOBSON, G. C. Partisan polarization in American politics: A background paper. *Presidential Studies Quarterly* 43, 4 (2013), 688–708.
- [16] LUDVIGSON, S. C. Consumer confidence and consumer spending. *Journal of Economic Perspectives* 18, 2 (2004), 29–50.
- [17] MCGRATH, M. C., ET AL. Economic behavior and the partisan perceptual screen. *Quarterly Journal of Political Science* 11, 4 (2017), 363–83.
- [18] MIAN, A. R., SUFI, A., AND KHOSHKHOU, N. Partisan bias, economic expectations, and household spending. *Fama-Miller Working Paper* (2018).
- [19] NEAL, Z. P. A sign of the times? Weak and strong polarization in the u.s. congress, 1973–2016. *Social Networks* 60 (2020), 103–112.
- [20] NEWAY, W. K. Efficient estimation of limited dependent variable models with endogenous explanatory variables. *Journal of Econometrics* 36, 3 (1987), 231–250.
- [21] ÖZTÜRK, B., AND STOKMAN, A. C. Animal spirits and household spending in Europe and the US. *Economics Letters* 185 (2019), 108697.
- [22] PETERS, G. Election year presidential preference polling and voting outcome. *The American Presidency Project*. Ed. John T. Woolley and Gerhard Peters. Santa Barbara, CA: University of California. Online: <https://www.presidency.ucsb.edu/node/323909>.
- [23] SANDOVAL, H. H., AND WALSH, A. N. The role of consumer confidence in forecasting consumption, evidence from Florida. *Southern Economic Journal* 88, 2 (2021), 757–788.

Appendix A: Economic Outcomes by Party Affiliation

Table A1 in the appendix presents several economic outcome measures for Florida based on the political party in power at the national level. All economic indicators are measured quarterly and span the first quarter of 1990 to the fourth quarter of 2019 — the sample period for which we capture respondents’ party affiliation and excludes the COVID-19 pandemic — with some exceptions.²⁵ Nearly all economic indicators are also expressed as an annualized percentage. The exceptions are the unemployment rate, which is measured in percentage points, and the change in the unemployment rate, which is expressed in annualized terms. Our results indicate little difference in economic outcomes for Florida under Democratic and Republican presidencies. The exceptions are unemployment rate change, job hires growth, and personal transfer receipts growth, including Medicare growth and state unemployment insurance (UI) compensation growth.

The two recessions captured in our sample period partially contribute to the observed differences in economic outcomes across Republican and Democratic administrations shown in Table A1. The difference in unemployment rate growth between Democratic and Republican presidencies is driven by recessions during 1990-91 and the Great Recession of 2007-09, both occurring under Democratic presidents. Although the George W. Bush (Republican) presidency did face a recession in 2000-01, it was shorter and relatively less severe than the 2008 Great Recession. The difference in the growth rate of newly hired workers is driven in part by the sample period 2000–2019 of this indicator, which includes two recessions during the two-term Bush presidency and economic recovery during the two-term Obama presidency, with continued but modest growth in the one-term Trump presidency.

The higher growth rate of state level personal transfer receipts during Republican presidencies is driven by variations in Medicare expenditure and state unemployment insurance compensation. The increase in Medicare expenditure during the Bush presidency coincides with his campaign promise to expand the U.S. Medical Savings Accounts and strengthen Medicare. Hence, overall, the differences in state level economic outcomes across political party leadership is a response to exogenous changes in economic conditions rather than the fulfillment of campaign promises, with the exception of the sharp increase in Florida Medicare expenditures in 2006.

²⁵Due to data availability, several economic indicators are unavailable during the period 1990q1 to 2019q4. All GDP measures begin in the second quarter of 2005 except for GDP per capita, which begins during the second quarter of 2010, as do all other per capita measures in table A1. Quarterly population estimates are provided beginning in 2010 by the Bureau of Economic Analysis. Florida employment growth in hours measures the average weekly hours of all employees (not seasonally adjusted), which is available beginning in the second quarter of 2007. Lastly, all Census Bureau Quarterly Workforce Indicators (QWI) in rows 9-15 begin in the second quarter of 1998, except job separation growth and job turnover growth, which are available beginning in 1998q1 and 1998q3, respectively.

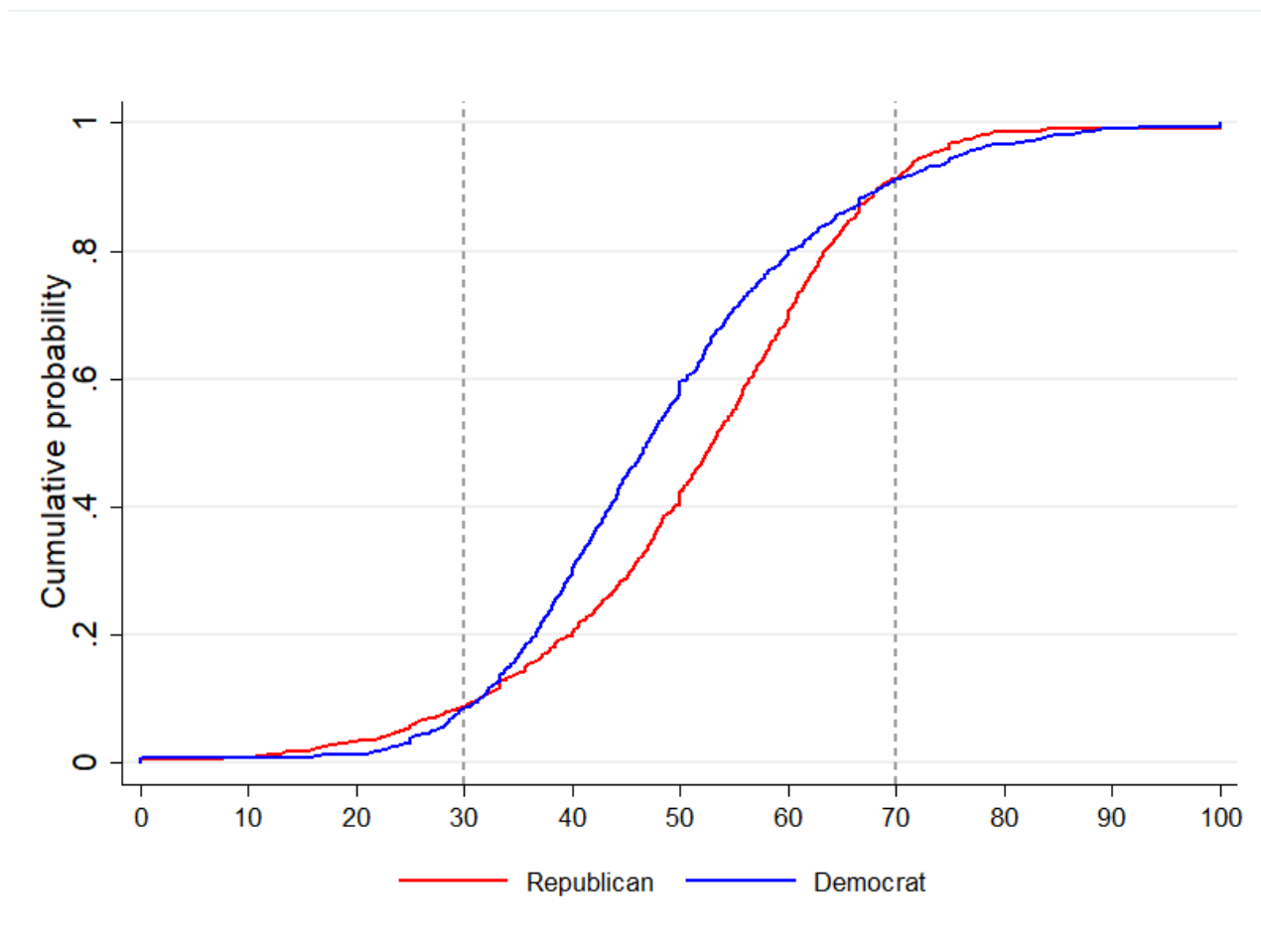
Table A1: Economic Outcomes by Political Party in Power (Presidency)

	N	Mean	[Std Dev]	Economic indicator _t = α DEM _t + β REP _t + δ_t						$\alpha = \beta$
				Democrat		Republican		Difference		p-value
GDP Growth	59	1.384	[4.042]	1.930*	[0.733]	0.736	[1.632]	1.194	[1.621]	0.464
Non-farm GDP growth	59	1.406	[4.030]	1.956**	[0.705]	0.755	[1.661]	1.201	[1.637]	0.466
Non-farm GDP growth (current dollars)	59	3.453	[3.988]	3.609***	[0.857]	3.269	[1.663]	0.340	[1.673]	0.840
GDP per capita growth	39	1.140	[2.538]	0.853	[0.604]	1.872***	[0.252]	-1.018	[0.657]	0.129
Employment growth (heads)	120	1.765	[2.376]	2.235***	[0.322]	1.229	[0.683]	1.005	[0.632]	0.115
Employment growth (hours)	51	-0.293	[2.975]	-0.193	[0.406]	-0.462	[0.562]	0.270	[0.687]	0.696
Unemployment rate	120	5.826	[2.134]	6.408***	[0.711]	5.161***	[0.514]	1.247	[0.836]	0.139
Unemployment rate change	120	-0.094	[1.389]	-0.519**	[0.194]	0.390	[0.408]	-0.909**	[0.385]	0.020
Beginning of quarter employment growth	87	1.525	[8.961]	2.171*	[0.868]	0.864	[1.034]	1.307	[1.159]	0.263
Job hires growth	87	-0.062	[32.954]	4.35*	[2.014]	-4.576	[4.605]	8.926*	[5.077]	0.082
Job separation growth	88	-0.227	[41.299]	2.913	[2.879]	-3.513	[4.195]	6.426	[5.120]	0.213
Job turnover growth	86	0.000	[0.027]	0.002	[0.002]	-0.003	[0.003]	0.004	[0.003]	0.208
Firm job gains growth	87	0.326	[64.302]	3.631	[4.184]	-3.057	[4.900]	6.688	[6.451]	0.303
Firm job losses growth	87	0.529	[75.449]	0.246	[5.885]	0.819	[4.598]	-0.574	[7.508]	0.939
Average monthly earnings growth	87	1.016	[22.802]	1.174	[1.367]	0.854	[1.553]	0.320	[2.041]	0.876
Personal income growth	120	2.684	[4.484]	3.327***	[0.515]	1.950	[1.017]	1.376	[1.074]	0.203
Per capita personal income growth	39	1.715	[4.717]	1.715	[0.957]	1.716*	[0.789]	-0.001	[1.224]	1.000
Personal transfer receipts growth	120	3.987	[9.998]	2.886***	[0.729]	5.246***	[0.971]	-2.360**	[1.169]	0.046
Social Security benefits growth	120	3.010	[5.565]	2.684***	[0.369]	3.382***	[0.642]	-0.698	[0.760]	0.360
Medicare growth	120	4.793	[6.015]	3.190***	[0.919]	6.624***	[1.019]	-3.434**	[1.337]	0.012
Medicaid growth	120	5.288	[15.399]	3.352**	[1.256]	7.501*	[2.889]	-4.149	[3.092]	0.182
State UI compensation growth	120	-2.330	[52.504]	-18.675*	[7.518]	16.350	[12.619]	-35.025**	[13.463]	0.010
All other transfer receipts growth	120	4.506	[36.453]	4.182	[2.249]	4.876	[2.818]	-0.694	[3.771]	0.854
Inflation	120	2.391	[1.946]	2.152***	[0.242]	2.663***	[0.362]	-0.51	[0.442]	0.250
Core Inflation	120	2.394	[2.190]	2.167***	[0.262]	2.654***	[0.410]	-0.487	[0.504]	0.335

The table reports state level economic outcomes based on the political party in power at the national level. All economic indicators are measured on a quarterly basis from 1990q1 to 2019q4 with some exceptions (see text for details), and expressed as an annualized percentage change. The exceptions are the the unemployment rate which is measured in percentage points and the change in the unemployment rate which is expressed in annualized terms. The first column reports averages for each economic indicator with standard deviations in brackets. The next two columns report coefficient estimates from the regression: $\text{Economic indicator}_t = \alpha \text{DEM}_t + \beta \text{REP}_t + \delta_t$ where DEM_t equals one if the Democratic Party is in power, and zero otherwise and REP_t equals one if the Republican Party is in power, and zero otherwise. The next column shows the difference in the coefficient estimate between Democratic and Republican Party governments. Newey-West standard errors using six lags are in brackets. The last column shows p-values associated with the Wald test that $\alpha = \beta$. The first quarter of a given political party's term is assigned to the previous party in office. Standard errors are shown in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Appendix B: Supplemental Figures and Tables

Figure B1: Share of Republicans/Democrats by Zip Code



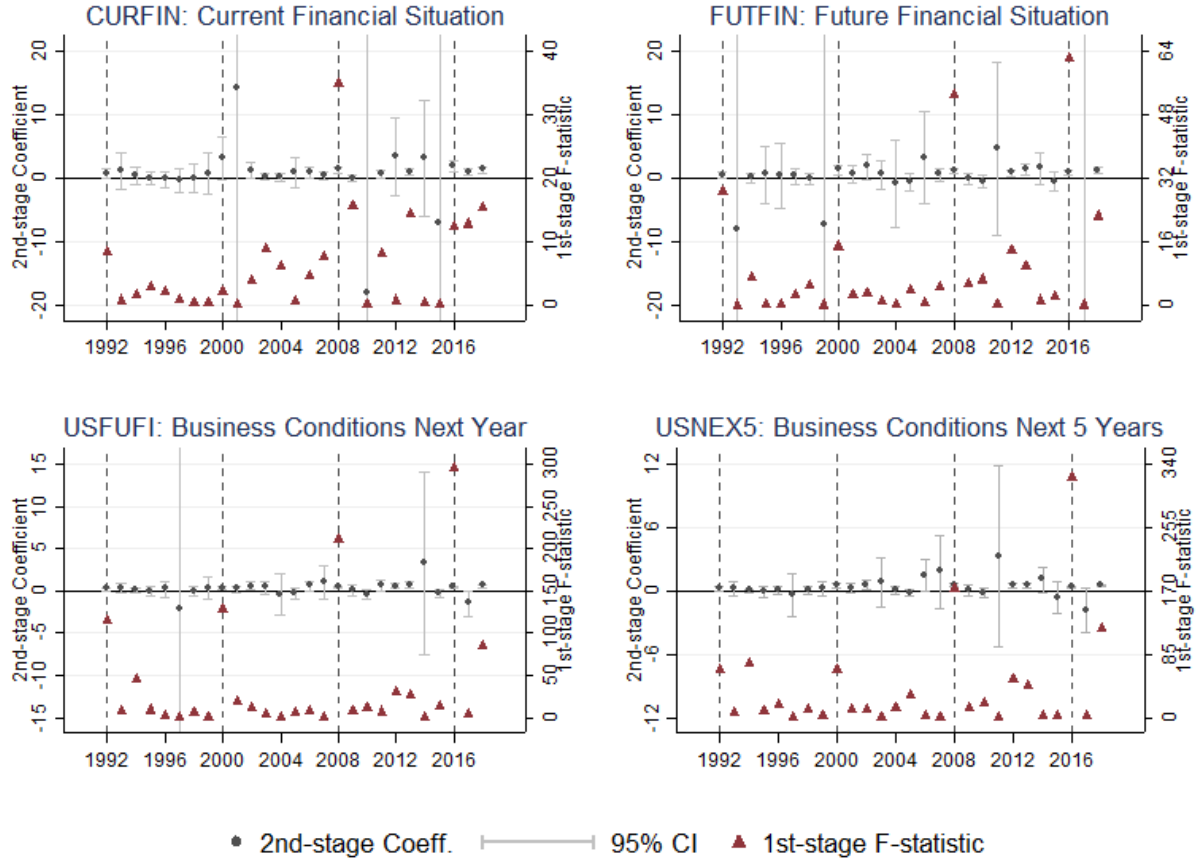
Data Source: University of Florida Consumer Attitude Survey. The figure plots the cumulative distribution function of the share of Republicans/Democrats across zip codes. There are 930 standard zip codes in Florida; around 80% of them have a share of Republicans/Democrats that ranges between 30% and 70%.

Table B2: Effect of Sentiment on Spending Intentions (GBTIME): Sensitivity Analysis (first-stage)

	(1)		(2)		(3)		(4)	
	Pres.	Elect. 1992	Pres.	Elect. 2000	Pres.	Elect. 2008	Pres.	Elect. 2016
Panel A. Income								
CURFIN	0.077***	(0.028)	0.052*	(0.027)	0.107***	(0.025)	0.088***	(0.027)
<i>F</i>	7.316	[0.007]	3.661	[0.056]	17.666	[0.000]	10.433	[0.001]
FUTFIN	0.115***	(0.025)	0.072***	(0.023)	0.169***	(0.026)	0.175***	(0.024)
<i>F</i>	21.747	[0.000]	9.842	[0.002]	41.676	[0.000]	51.425	[0.000]
USFUF1	0.310***	(0.033)	0.323***	(0.032)	0.358***	(0.027)	0.434***	(0.028)
<i>F</i>	90.689	[0.000]	101.116	[0.000]	169.882	[0.000]	245.552	[0.000]
USNEX5	0.224***	(0.033)	0.232***	(0.033)	0.284***	(0.027)	0.460***	(0.027)
<i>F</i>	45.453	[0.000]	50.551	[0.000]	114.427	[0.000]	279.870	[0.000]
Panel B. 6-month window								
CURFIN	0.054	(0.039)	0.051	(0.038)	0.130***	(0.036)	0.037	(0.040)
<i>F</i>	1.896	[0.169]	1.811	[0.179]	13.037	[0.000]	0.865	[0.353]
FUTFIN	0.099***	(0.034)	0.066**	(0.033)	0.160***	(0.037)	0.165***	(0.034)
<i>F</i>	8.413	[0.004]	4.043	[0.044]	18.391	[0.000]	22.983	[0.000]
USFUF1	0.327***	(0.044)	0.326***	(0.043)	0.314***	(0.039)	0.432***	(0.040)
<i>F</i>	55.341	[0.000]	57.537	[0.000]	63.834	[0.000]	116.162	[0.000]
USNEX5	0.201***	(0.045)	0.268***	(0.045)	0.272***	(0.038)	0.496***	(0.040)
<i>F</i>	20.098	[0.000]	35.455	[0.000]	50.263	[0.000]	153.525	[0.000]
Panel C. 3-month window								
CURFIN	0.085	(0.062)	0.097	(0.059)	0.033	(0.059)	0.029	(0.071)
<i>F</i>	1.903	[0.168]	2.691	[0.101]	0.305	[0.581]	0.168	[0.682]
FUTFIN	0.135**	(0.053)	-0.021	(0.053)	0.221***	(0.063)	0.169***	(0.060)
<i>F</i>	6.599	[0.010]	0.155	[0.694]	12.507	[0.000]	7.959	[0.005]
USFUF1	0.272***	(0.067)	0.266***	(0.067)	0.269***	(0.068)	0.373***	(0.069)
<i>F</i>	16.392	[0.000]	15.884	[0.000]	15.692	[0.000]	29.500	[0.000]
USNEX5	0.152**	(0.070)	0.173**	(0.074)	0.278***	(0.067)	0.471***	(0.072)
<i>F</i>	4.731	[0.030]	5.423	[0.020]	17.162	[0.000]	43.161	[0.000]
Panel D. Month x County FE								
CURFIN	0.068**	(0.027)	0.028	(0.027)	0.131***	(0.025)	0.091***	(0.028)
<i>F</i>	6.387	[0.012]	1.074	[0.300]	27.958	[0.000]	10.794	[0.001]
FUTFIN	0.122***	(0.024)	0.094***	(0.024)	0.168***	(0.025)	0.172***	(0.025)
<i>F</i>	26.055	[0.000]	16.113	[0.000]	44.192	[0.000]	48.039	[0.000]
USFUF1	0.320***	(0.030)	0.327***	(0.031)	0.371***	(0.027)	0.448***	(0.028)
<i>F</i>	112.496	[0.000]	108.317	[0.000]	184.505	[0.000]	249.618	[0.000]
USNEX5	0.249***	(0.031)	0.236***	(0.032)	0.319***	(0.026)	0.456***	(0.028)
<i>F</i>	63.352	[0.000]	53.985	[0.000]	149.326	[0.000]	264.575	[0.000]
Panel E. Probit								
CURFIN	0.014	(0.011)	0.021*	(0.013)	0.048***	(0.009)	0.058***	(0.013)
<i>Chi</i>	1.425	[0.233]	2.773	[0.096]	27.812	[0.000]	20.152	[0.000]
FUTFIN	0.047***	(0.012)	0.050***	(0.013)	0.072***	(0.012)	0.119***	(0.013)
<i>Chi</i>	13.992	[0.000]	14.117	[0.000]	33.762	[0.000]	80.998	[0.000]
USFUF1	0.158***	(0.012)	0.168***	(0.014)	0.155***	(0.011)	0.290***	(0.013)
<i>Chi</i>	163.190	[0.000]	154.230	[0.000]	202.790	[0.000]	465.249	[0.000]
USNEX5	0.128***	(0.013)	0.144***	(0.014)	0.161***	(0.012)	0.310***	(0.013)
<i>Chi</i>	100.642	[0.000]	109.802	[0.000]	176.792	[0.000]	549.131	[0.000]

The table reports estimates of β from the first-stage regression, equation (1). Each coefficient comes from a separate regression using individual-level data pooled one year before and one year after each election that resulted in a change in political leadership (see table 3). The variable *Partisanship* equals one whenever a survey respondent's party affiliation matches the political party winning the presidential election. All regressions include MSA \times survey-month and zip code fixed effects (except for Panel D and E). The F- and Chi-statistics test whether the coefficient on the variable *Partisanship* equals zero. Robust standard errors are shown in parentheses and p-values in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure B2: Placebo



Data Source: University of Florida Consumer Attitude Survey. The figure reports estimates of the F-statistic and δ from the first- and second-stage regressions, equations (1) and (2), for each year between 1992 and 2018. First-stage F-statistics are represented by triangles (right axis), and second-stage coefficients are represented by dots (left axis). For the years when the presidential election resulted in a change in party in power (1992, 2000, 2008, and 2016), the coefficients correspond exactly to our main results. These years are identified with vertical dashed lines. For all other years, the coefficients correspond to a placebo, that is, as if there was a presidential election in November of each year that resulted in a change of the party in office. The F-statistic tests whether the coefficient on the instrument *Partisanship* equals zero in the first stage. For each coefficient, the regression sample considers one year before and one year after November (that is, from October $t - 1$ to November $t + 1$).

Figure B3: Other Spending Intentions by Party Affiliation



Data Source: University of Florida Consumer Attitude Survey. The figure plots the share of respondents reporting positive (optimistic) views to different specific spending intention questions by party affiliation. The sample varies by spending intention question. Questions PLANBC and PLANBH use data one year before and one year after the 1992 presidential election. Responses to questions MERCH, GCARDS, and APPAREL are available for September, November and December 2007; September, October, and November 2008; and October, November, and December 2009. Question HOMEGEN data are available between October and November 2016. See table 1 for question wording. The vertical dashed lines correspond to the presidential election that resulted in a change of the political party in office.