CrossMark

The Political Economy: Political Attitudes and Economic Behavior

Ellen M. Key[1] · Kathleen M. Donovan[2]

Abstract It has long been recognized that voters bring their political behaviors in line with economic assessments. Recent work, however, suggests that citizens also engage in economic behaviors that align with their confidence—or lack thereof—in the political system. This alignment can happen consciously or, as we suggest, unconsciously, in the same way that positivity carries over to other behaviors on a micro-level. Using monthly time series data from 1978 to 2008, we contribute further evidence of this relationship by demonstrating that political confidence affects consumer behavior at the aggregate level over time. Our analyses employ measures more closely tied to the theoretical concepts of interest while simultaneously accounting for the complex relationships between subjective and objective economic indicators, economic behavior, political attitudes, and the media. Our results suggest that approval of the president not only increases the electorate's willingness to spend money, but also affects the volatility of this spending. These findings suggest that the economy is influenced by politics beyond elections, and gives the "Chief Economist" another avenue by which they can affect the behavior of the electorate.

Keywords Public opinion · Consumer spending · Presidential approval · Economic behavior

✉ Ellen M. Key
keyem@appstate.edu

[1] Department of Government and Justice Studies, Appalachian State University, 350K Anne Belk Hall, Boone, NC 28608-2107, USA

[2] Department of Political Science, St. John Fisher College, Basil 109, 3690 East Avenue, Rochester, NY 14618, USA

Introduction

Politics and economics are closely intertwined. Scholars have written hundreds of articles about the political consequences of macroeconomic conditions, including studies of election outcomes (Fiorina 1978; Kinder and Kiewiet 1981), macropartisanship (Lockerbie 1989; MacKuen et al. 1989), and presidential approval (Kernell 1978; MacKuen et al. 1989). It is clear that the economy, both directly and indirectly, has a major impact on political attitudes and behaviors.

Much of the literature has assumed this relationship to be one-directional, with economic conditions leading to political attitudes and behavior (e.g., Kiewiet 1983; MacKuen et al. 1992). We suggest, however, that this assumption is theoretically and empirically unjustified: in much the same way that political behaviors (e.g., voting) are influenced by economic perceptions, citizens' economic behaviors are also affected by political attitudes. In particular, we find that increasing approval of the president leads to increased spending in the aggregate, creating a self-fulfilling prophecy for the electorate. At the same time, this increased approval generates greater volatility in spending, a natural function of the increased role motivation plays in spending decisions as mean levels of income (i.e., ability) increase.

While previous research has shown that political evaluations can affect economic *perceptions* (e.g., De Beof and Kellstedt 2004), the present analysis contributes to a growing body of evidence demonstrating a direct link to economic *behavior* at both the individual (Enns and Anderson 2009; Gerber and Huber 2010) and aggregate (Gerber and Huber 2009) levels. Economic evaluations are an important component, but they do not tell the whole story: political optimism affects both economic attitudes and behaviors. This type of emotional carry-over effect is common in political and other contexts, and we argue that the political economy is no exception. After all, "voters and consumers are essentially the same people. Mr. Smith buys and votes; he is the same man in the supermarket and the voting booth" (Tullock 1976).

The present analysis begins by outlining the relationship between economic and political indicators, focusing on recent work that demonstrates how political attitudes influence economic behavior. In doing so, we highlight existing explanations for this link, while offering up our own theoretical approach at the micro-level (i.e., carry-over effects) for observing such a relationship in the aggregate. Employing monthly time series data from 1978 to 2008, our analyses expand upon this nascent body of work by using measures more directly tied to the constructs of interest to examine the complex relationships between subjective and objective economic indicators, political attitudes, and the media. Our theoretical model also lends itself to a system of equations, enabling us to address questions of causality and endogeneity. The results have a number of implications, not least of which is that the picture painted of the political economy by prior studies is incomplete. More concretely, this effect provides presidents with a more pliable method of manipulating the economy—indirectly through approval rather than directly through economic policies.

The Political Determinants of Mean Consumer Spending

While the literature on political outcomes has consistently demonstrated the importance of the economy (Fiorina 1978; Kernell 1978; Kinder and Kiewiet 1981; Lockerbie 1989; MacKuen et al. 1989), the economic literature, in stark contrast, has generally ignored political attitudes and behaviors. A prototypical example comes from Ludvigson (2004), who forecasted changes in consumer spending using only lags of consumer sentiment. Other studies have incorporated borrowing and taxation rates as well as other forms of financial innovation while omitting political factors (e.g., Blinder 1981; Dynan et al. 2006). Indeed, when politics have been explicitly considered in analyses of consumer behavior it is typically limited to major shocks (e.g., the Gulf War, 9/11) that are included to absorb variance in the series, not as variables of interest in and of themselves (e.g., Garner 1991).

This oversight is likely due to the assumption that the relationship between politics and economics is a one-way street, with economic attitudes influencing political behavior, but not the other way around. Yet many politicians speak as if the reverse were true, implying a very different causal relationship in their communications and campaign messages. For example, President Carter's infamous "malaise" speech argued that the root of the economic downturn and gas shortages was a "crisis of confidence" in America that, if restored, would set the country on a positive economic trajectory once more. Reagan's "Morning in America" ad also played on this theme, arguing that the country was "prouder and stronger and better" under Reagan's leadership, resulting in lower unemployment, interest rates, and inflation. In the extreme, the 16-day government shutdown in October of 2013 was blamed for reducing holiday spending and slowing the economic recovery. A survey conducted during this time revealed that citizens agreed with such rhetoric: roughly 40% of Americans reported cutting back on their spending as a result of lowered confidence in the political system (Chung 2013).

From a theoretical standpoint, political optimism might only affect economic behavior *through* expectations: citizens first become more optimistic or pessimistic about the economy in reaction to a change in partisan control in Washington; they then behave according to these updated expectations by increasing or decreasing their spending, in a self-fulfilling prophecy. This theoretical perspective has been put forth by Gerber and Huber (2010), particularly in the context of elections. Partisans "believe that their party is of better quality, and when their party wins an election [they] become more optimistic about the economy and alter their consumption decisions and personal happiness in response to that expected improvement" (p. 168).

There is certainly empirical support for the idea that political attitudes affect economic behavior indirectly through economic attitudes. Most prominently, De Boef and Kellstedt (2004) have demonstrated that increasing presidential approval leads to more optimistic economic attitudes. These findings are echoed in Ladner and Wlezien (2007), who found that the expected electoral success of one's party colors prospective economic evaluations (see also Evans and Pickup 2010). In turn, a large literature demonstrates that consumer sentiment shapes economic behavior,

including consumer spending. While we are not aware of any studies examining this causal chain in its entirety, there is convincing evidence that at least some of the relationship between presidential approval and economic behavior is mediated by economic attitudes.

Yet standard measures of economic perceptions and consumer confidence comprise only part of what determines actual spending (Katona 1968). According to one analysis, the Index of Consumer Sentiment (ICS) explained only 14% of changes in actual consumer spending between 1954 and 1993 (Carroll et al. 1994). Ludvigson (2004) similarly notes that aggregate consumer confidence is a good indicator of present economic conditions, but does not provide much predictive value beyond standard economic indicators (see also Kellstedt et al. 2015). In other words, a great deal of variance in consumer behavior is left unexplained by economic perceptions.

One reason for this discrepancy is that spending is a function of ability and motivation, whereas the ICS tends to emphasize only the former.[1] Furthermore, scholars have recently proposed that political attitudes can directly account for some of this variance. Enns and Anderson (2009), for example, argue that political attitudes directly impact economic behavior because people seek to be consistent in their attitudes and behaviors. In other words, individuals tailor their behavior—economic or otherwise—to their attitudes in order to avoid cognitive dissonance. Using consumer survey data collected during the 2000 presidential election, they found that respondents' partisanship predicted spending, with "winning" partisans increasing and "losing" partisans decreasing spending, an effect driven entirely by voting citizens.

A direct relationship between political attitudes and economic behavior has also been demonstrated at the aggregate level, with sales increasing in counties more heavily populated by partisans of the winning party over the course of elections (Gerber and Huber 2009). Because this boost in consumer spending appears shortly *before* the election, "citizens appear to be adjusting their consumption based on expected income rather than today's income" (p. 424). This adds credence to the notion that while consumer sentiment is an excellent reflection of current economic conditions, actual consumer behavior is affected by political optimism and pessimism.

On a macro scale, a substantial literature in comparative politics has also demonstrated that political certainty and stability leads to greater economic growth, specifically by boosting the rate of private investment and other factors associated with economic expansion (e.g., Aisen and Veiga 2006; Alesina et al. 1996; Cukierman et al. 1992; Ozler and Tabellini 1991). In other words, the more confidence the electorate has in the political system, the better the economy. Of course, these analyses examine a much wider range of political and economic

---

[1] Ironically, as Kellstedt et al. (2015) point out, Katona argued that income and assets measure ability to spend and proposed the attitudinal ICS specifically as a measure of willingness (i.e., motivation). Yet four of the five questions focus on objective realities and ability (e.g., "would you say that you are better off or worse off financially than you were a year ago"); the one question closest to ascertaining motivation and willingness asks "do you think now is a good or bad time for people to buy major household items" rather than "do you plan" or "are people interested in buying" these items.

situations; nonetheless, we see no reason why these relationships would not hold up in a more nuanced fashion with a more restricted range of political confidence.

Within the American context, we do not explicitly reject the notion of cognitive dissonance, however we believe it much more likely that this effect is due to optimism or pessimism in one domain seeping unconsciously into other domains.[2] Research on decision-making has shown that incidental (i.e., unrelated) emotions have carry-over effects that impact subsequent behavior, often outside of one's awareness (e.g., Loewenstein and Lerner 2003; Lerner et al. 2004). For example, consumer researchers have found that relative to a neutral baseline, sad individuals demanded higher prices in exchange for a good but were willing to sell it at a lower price. The authors suggest that this means events such as 9/11 "could actually encourage rather than discourage consumer spending" (Lerner et al. 2004, p. 340). Other research has also found that sad individuals are willing to spend more on a purchase than neutral ones (Cryder et al. 2008). This relationship was moderated by a general orientation toward money: sad consumers who were "spendthrifts" spent more while "tightwads" spent less (Rick et al. 2008), with the latter outnumbering the former 2 to 1.

At a glance such findings appear counter to our argument, but there are two critical issues to consider. First, while happiness and enthusiasm are the opposite valence of sadness, this does not mean that they would have the opposite impact on consumer spending. Indeed, much of the research on incidental emotions has been conducted in the context of appraisal theories, which hold that emotions of the same valence (e.g., anxiety and anger) have different effects on behavior, while emotions with different valences can lead to similar behaviors (e.g., Han et al. 2007). Second, sadness is a relatively uncommon emotional reaction in American politics. Not surprisingly, most of the research on appraisal theories of emotions in a political context has focused on fear, anger, and/or enthusiasm. Regardless, we believe that a drop in presidential approval does not indicate sadness so much as it does disappointment in and/or anger with the political system.

We are unaware of any publicly available research that has examined the impact of happiness or enthusiasm on spending decisions (as opposed to how spending impacts happiness, on which there are many interesting published studies). There is, however, some survey and experimental evidence demonstrating that enthusiasm affects domain-specific behaviors, such as political participation (Brader 2005; Marcus and MacKuen 1993). Certainly happiness appears to increase heuristic thinking and "shallow" thought processing (Brader 2005), and positive emotions generally are affiliated with approach behaviors (Marcus and MacKuen 1993).

As a result, we expect increases in political satisfaction to be associated with increases in consumer spending. Moreover, we hold that an electorate confident in the direction of the country should engage in greater spending as a matter of course, rather than consciously and explicitly aligning economic decisions with political attitudes as a form of coping with cognitive dissonance. Given that experiments

---

[2] Enns and Anderson (2009) examined whether mood could explain the observed changes in consumer behavior, and found no significant change in happiness after the election. However, they do not test whether happiness directly predicts spending and, in any case, the question is quite broad (i.e., "I'm very happy with my life as it is") and does not speak to confidence in the political system.

have typically found subjects to be unaware of the fact that incidental emotions affected their behavior, we believe that this process plays out on a similarly unconscious and implicit level outside the lab.

Of course, our times series data cannot test whether consumer spending is affected by approval consciously or unconsciously. Nonetheless, this theory generates expectations in the aggregate, ones that we seek to observe while simultaneously addressing some weaknesses of prior research. For one, the survey data employed by Enns and Anderson asked about specific categories of consumption that, while important indicators of spending (i.e., food, transportation, and entertainment), comprise only a quarter of total expenditures. Other studies demonstrating that political attitudes affect economic behavior have employed measures of intended—but not actual—holiday and vacation spending (Gerber and Huber 2010). At the aggregate level, Gerber and Huber (2009) used county-level taxable sales that, while exhibiting "no apparent geographic or attrition bias" (p. 412), covered slightly more than half the states, and likely contained some measurement error due to cross-county/state purchases and the reporting of sales—though, as they note, such error would serve to attenuate any results. Regardless, it is clear that employing a more complete and direct measure of consumer spending would serve to bolster these findings and provide greater confidence in the idea that political attitudes and economic behavior are directly linked.

Similarly, previous analyses have focused exclusively on partisanship (Enns and Anderson 2009; Gerber and Huber 2010) or proxies of partisanship (Gerber and Huber 2009) as a measure of political attitudes. Although informed by partisanship, the theoretical concept of interest is approval of and satisfaction with the government. Theoretically, partisanship is relatively stable (Green et al. 2002) and more indicative of one's identity (e.g., Greene 2004) than satisfaction with the present political system. Empirically, satisfaction with the government varies over time in response to political events and the public's approval of political actors involved in these events. As a result, we employ presidential approval as our key independent variable, given that it is more closely linked with the theoretical concept of interest.

Beyond the Mean: Incorporating Volatility into Models of Economic Behavior

Our focus on trends rather than cross-sectional data not only allows us to analyze shifts in the public's attitudes and spending over time, but also enables us to consider the volatility of these trends. Robert Engle acknowledged in his 2003 Nobel lecture that political factors such as elections and wars can affect the volatility in financial markets (see also Canes-Wrone and Park 2012). Yet while a number of studies have examined the causes of volatility in economic variables, these analyses have, much like the macroeconomic literature generally, ignored the potential impact of politics (e.g., Christiansen et al. 2012; Dhawan and Jeske 2006).

When it comes to predicting the volatility of consumer spending specifically, the literature is fairly thin. On one hand, some scholars have found that greater political

instability—as defined by changes in control of executive power in a country—is associated with higher volatility in inflation (Aisen and Vega 2006). Others who have examined how mean levels of political variables affect economic volatility, however, have found that higher levels of democracy are associated with lower volatility in GDP (Mobarak 2005). Moreover, how these results relate to our research questions is not entirely clear, as these studies employ neither presidential approval nor consumer spending in their models.

At the same time, analyses that examine mean levels of political attitudes *as a function of* economic volatility have generally found a positive relationship between the two. In particular, these studies reveal that increasing volatility in the stock market is associated with increased presidential approval (Schwartz et al. 2008; Chong et al. 2011). The "basic idea is simply that in times of uncertainty, people act to support the President," akin to a rally round the flag effect (Schwartz et al. 2008, p. 200). Similarly, Chong and colleagues note that while "it is intuitive to assume that a decrease in market volatility will result in a higher approval, we notice that it is during times of economic uncertainty… when the market is looking toward the president for leadership, that we witness a positive causal relationship" (2011, p. 394). Closely related work finds a similar association, with worsening mean levels of economic conditions leading to decreases in the volatility of presidential approval (Gronke and Brehm 2002; although see Kriner and Schwartz 2009). In other words, negative economic conditions appear to stabilize political opinions, while positive economic events lend themselves to greater unpredictability in the electorate.

Based on this work we expect a similar relationship, albeit in the reverse causal direction: whereas low presidential approval simultaneously dampens consumer spending and decreases the volatility of spending, high levels of approval should not only lend itself to increased spending, but also greater volatility in that spending. Rather than a rally round the flag effect, however, we suggest that volatility is positively associated with presidential approval for more practical reasons. In particular, if presidential approval increases the level of spending, then it will also inherently increase the variance in spending. The lower spending is, the more ability plays a role in spending and the less motivation or willingness matters. Conversely, as sentiment and thus spending increases, motivation comes to play a more important role, motivation that varies across people and over time.

Theoretical Expectations

Given the complex nature of the political economy, Fig. 1 summarizes the hypothesized relationships between the political and economic attitudes and behaviors in the model.[3] First, a large literature has demonstrated that objective economic indicators (Fiorina 1981; Kernell 1978; Kinder and Kiewiet 1979) and subjective economic evaluations (De Boef and Kellstedt 2004; Erikson et al. 2002; MacKuen et al. 1992) affect political evaluations. Similarly, the chief factors in

---

[3] The complexity of the relationships described in Fig. 1 also raise concerns about endogeneity, a question we address in a later section.
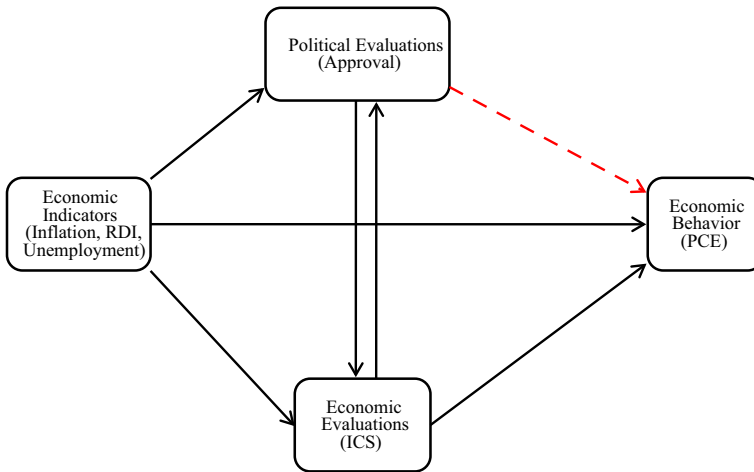
Fig. 1 Theoretical summary

modern time series models of consumer spending are objective economic indicators (Carroll 1992; Poterba and Samick 1995; Romer 1990). The effects are similar to those found in approval models, with consumer spending increasing as the economy improves and declining as economic conditions worsen.

Beyond the impact of objective economic indicators, it is clear that economic behavior is also affected by subjective economic evaluations (Carroll et al. 1994; Gelper et al. 2007; Ludvigson 2004; Starr 2008). We suggest that when political confidence is high, as measured by high presidential approval ratings, consumer spending will also increase; conversely, low presidential ratings should depress consumer spending (H1).

In addition to impacting changes in average consumer behavior, we anticipate that presidential approval will also affect the volatility in consumer behavior. Previous work has found that increased economic volatility is associated with increased presidential approval, though it has focused on approval as the dependent variable. Thus, as the mean level of presidential approval increases, volatility in consumer spending should also increase (H2).

Data and Methods

The analyses that follow explore whether political attitudes and the stability of these attitudes directly impact the economy using monthly data that spans from January of 1978 through December of 2008. In operationalizing the macroeconomy, we follow the mainstream economic literature by measuring our dependent variable in terms of *personal consumption expenditures (PCE)*.[4] PCE include all household purchases of

---

[4] The data on total personal consumption expenditures were gathered from the Bureau of Economic Analysis' "National Income and Product Accounts" (2009), publicly available online at http://www.bea.gov/national/. Measured in billions of dollars and seasonally adjusted, the data have also been adjusted for inflation to constant 2008 dollars.

goods and services made by residents in the U.S. In turn, expenditures comprise approximately two-thirds of the country's domestic spending and "are by far the most important single item of aggregate demand" (Vuchelen 2004, p. 494). As such, PCE are the engine of economic growth and play a vital role in affecting both the unemployment and inflation rates, among other indictors of economic health.

As shown in the first panel of Fig. 2, expenditures have experienced relatively steady growth during the period of examination; however, the short-term changes in PCE are difficult to see. Thus, the second panel presents PCE after it has been differenced, highlighting the median monthly change of over 13 billion dollars.

To measure our key independent variable, *presidential approval*, we use the percentage of respondents according to Gallup Polls who approve of the president's handling of his job each month. Subjective economic evaluations are measured using the University of Michigan's Survey of Consumers ICS. Although recent research suggests that the individual components may be better predictors of consumer spending than the index as a whole, indices are also more reliable than individual survey questions (Kellstedt et al. 2015).[5] We measure the objective economy by including those factors commonly used in models of consumer spending, such as *inflation* and *unemployment rates*, along with real disposable income (*RDI*), and the *Dow Jones Industrial Average (DJIA)*.

In addition, we include political and economic events as interventions to explain shocks to the series not accounted for by other variables in the model.[6] Similarly, the model includes variables indicating the first two months of a new presidential administration, the *honeymoon period*, and *elections*. Finally, a voluminous literature shows that the media play a central role in both economic perceptions (e.g., Soroka et al. 2015; De Boef and Kellstedt 2004) and presidential approval (e.g., Brody 1991; Nadeau et al. 1999). As a result, we control for *media sentiment* toward the president, as measured by separate counts of positive and negative mentions in *The New York Times*. The data were coded for sentiment using the Lydia system.[7]

---

[5] We nonetheless re-ran the model with the two business conditions questions (e.g., Kellstedt et al. 2015) and personal prospections (see footnote 1) one at a time in lieu of the index. The components exhibited unique relationships with spending, but in each case the results of interest were substantively and statistically unaffected. We thus use the index; results using the components are available from the authors upon request.

[6] These interventions were identified by examining the ARFIMA residuals. Only the most extreme events were included to avoid overfitting.

[7] This system has been used by other scholars and institutions as an indicator of media sentiment. Most prominently, beginning in the fall of 2007, the Annenberg National Election Study included daily summary data generated by Lydia to capture information about each presidential candidate and relevant issues, providing a snapshot of the campaign for the day respondents completed the survey. Studies of the system's internal validity can be found in a variety of sources. An overview of the technical aspects of the process can be found in Bautin et al. (2010). For details about the aggregation process, see Bautin et al. (2009). For a discussion of the sentiment analysis, see Bautin et al. (2008) and Godbole et al. (2007). A technical discussion of the spatial analysis can be found in Bautin et al. (2010). Readers may also see Online Appendix A for a general discussion of the Lydia system.

The media coverage variables also act as micro-event detectors, picking up events—political and otherwise—that relate to the president. This allows us to include changes in the political environment in a more parsimonious fashion, reducing the number of interventions in an already complex model.
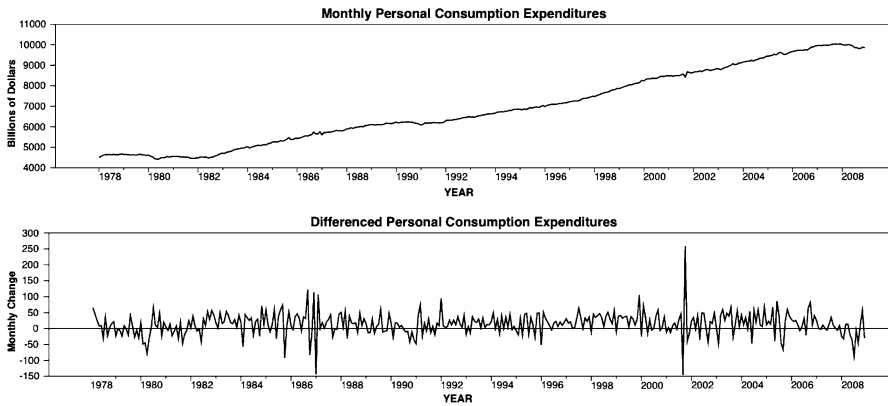
Fig. 2 Monthly personal consumption expenditures, 1978–2008

All variables were differenced by their respective values of *d* to create stationary series (Granger 1980).[8] An attempt to specify lag structure using statistical significance to eliminate insignificant lags runs the danger of curve-fitting.[9] Rather than rely on post hoc decisions, lag lengths were chosen by examining the log-likelihood and AIC for a variety of specifications. Based on these results, contemporaneous effects were included for all variables, and two-month lags were included for all political, economic, and media variables.[10]

Traditional autoregressive fractionally integrated moving average techniques explore only the first moment of a series, yet we are also interested in the stability of expenditures. Because Engle's LM test indicates the presence heteroskedastic errors, also known as an autoregressive conditional heteroskedastic (ARCH) process, a multivariate ARCH-M specification was used to estimate the model.[11] The ARCH-M specification allows conditional volatility to affect the mean of expenditures (Engle et al. 1987). To account for the long-term equilibrium relationship between disposable income, subjective economic evaluations, and consumption, a fractional error correction mechanism (FECM) is included (Grant and Lebo 2016; Lebo and Grant 2016).[12] The

---

[8] See Online Appendix B for integration tests and the values of *d* used to difference each series.

[9] Likewise, specifying the lag structure *a priori* requires assumptions about the behavior of the political and economic variables that are difficult to justify theoretically.

[10] Multicollinearity is certainly a concern for time series data, as variables may share a common trend over time. Although this is true when variables are included as regressors in their level form, differencing the data removes any time trend, thus limiting the correlation between variables (Gujarati 2004, p. 367).

[11] The model has a Durbin-Watson statistic of 2.07, indicating no significant autocorrelation remaining. The residuals are also white noise, with a Ljung-Box Q statistic of 14.6 at a lag of 20. The results for the models run using first differences instead fractional differencing techniques are presented in Online Appendix D. The results remain substantively unchanged.

[12] A table of cointegration tests can be found in Online Appendix C. We follow the procedures discussed in Grant and Lebo (2016) and Lebo and Grant (2016) to test for cointegration. The fractional differencing parameter for the FECM is 0.61. Although PCE and RDI do not meet traditional standards of cointegration in our data, they are treated as cointegrated in the economics literature and are included in our FECM (e.g., Davidson et al. 1978; Lettau and Ludvigson 2001). PCE and approval do not show evidence of cointegration and, as such, approval has been excluded from the FECM.

ARCH-M model includes equations for the mean, or amount of spending, as well as the conditional volatility. We first discuss the results of the mean equation, followed by the ARCH parameters and conditional volatility results.

Mean Results

As shown in Table 1 and in line with H1, the mean of consumer spending is significantly impacted by presidential approval. The relationship is substantively quite powerful: a 1% change in fractionally differenced approval results in a contemporaneous increase of $2.47 billion, or 26.8%, of the mean monthly change in fractionally differenced expenditures. Moreover, the effect of increased approval persists the following month, resulting in an additional increase in spending. A standard deviation change in fractionally differenced approval—4.8 points—leads to almost twice the mean change in fractionally differenced expenditures over two months. The magnitude and persistence of this effect allows political perceptions to play a large role in shaping economic behavior.

With respect to the other political variables, we see that honeymoons have no significant impact on spending, while elections have a more qualified one. Consumers respond to positive political evaluations and elections contemporaneously, but the effect of elections does not reach traditional levels of significance. However, the direction of the effect conforms to previous research finding a positive relationship between elections and spending (Gerber and Huber 2009; Enns and Anderson 2009).

With respect to objective economic indicators, rising inflation has a negative effect on PCE, significantly reducing expenditures over two months. This decrease in expenditures due to adverse economic conditions is to be expected: when goods and services cost more, consumers spend less. The unemployment rate, while not reaching traditional levels of significance, reduces expenditures in the short term, but there is no lagged effect. Similarly, as the DJIA and disposable income increase, PCE increases as well. That is, as the market improves and stocks are worth more, consumers are able to spend more, although this effect is only marginally significant for the stock market. Not surprisingly, changes in objective economic indicators account for a larger percentage of the monthly change in PCE than do the political variables. Nevertheless, even when accounting for these traditional variables, presidential popularity plays a substantively significant role in predicting macroeconomic conditions.

While PCE responds to objective economic indicators, it also reacts to the non-fundamental factors, or "animal spirits" (Keynes 1936), as reflected in the ICS. The month following an increase in sentiment, expenditures also increase. In line with prior research, this shows that consumption expenditures depend not just on the availability of money—the ability to spend—but also on consumers' willingness to spend. When the economy is perceived as improving, expenditures increase the following month. Conversely, when the economy is perceived as performing poorly, even if that perception is not in line with objective economic indicators, consumers will be less willing to spend because they fear conditions may worsen. There is also

Table 1 Model of monthly personal consumption expenditures, 1978–2008

Mean equation	Coefficient	(SE)	*p* value
Political			
Approval	2.470*	(0.695)	0.000
Approval$_{t-1}$	1.243*	(0.619)	0.023
Approval$_{t-2}$	−0.584	(0.451)	0.098
Honeymoon	34.845	(48.460)	0.236
Honeymoon$_{t-1}$	−5.408	(30.205)	0.429
Honeymoon$_{t-2}$	−19.357	(47.348)	0.342
Election	27.315	(21.414)	0.101
Election$_{t-1}$	−16.112	(32.671)	0.311
Election$_{t-2}$	12.680	(22.137)	0.284
Economic			
Inflation	−17.253*	(7.520)	0.011
Inflation$_{t-1}$	−27.187*	(7.418)	0.000
Inflation$_{t-2}$	−11.909	(9.848)	0.114
Unemployment	−23.799	(16.858)	0.079
Unemployment$_{t-1}$	−7.644	(20.303)	0.354
Unemployment$_{t-2}$	−17.569	(17.548)	0.159
ICS	−0.744	(0.740)	0.158
ICS$_{t-1}$	1.571*	(0.858)	0.034
ICS$_{t-2}$	−0.948	(0.707)	0.090
Dow Jones	0.006	(0.009)	0.271
Dow Jones$_{t-1}$	0.014	(0.010)	0.078
Dow Jones$_{t-2}$	−0.011	(0.012)	0.163
Real disp. income	0.267*	(0.050)	0.000
Real disp. income$_{t-1}$	−0.255*	(0.063)	0.000
Real disp. income$_{t-2}$	−0.088*	(0.050)	0.040
Media & other events			
Positive sentiment	−0.232*	(0.072)	0.001
Positive sentiment$_{t-1}$	0.138*	(0.061)	0.012
Positive sentiment$_{t-2}$	−0.015	(0.048)	0.380
Negative sentiment	0.211*	(0.077)	0.004
Negative sentiment$_{t-1}$	−0.128*	(0.065)	0.025
Negative sentiment$_{t-2}$	−0.069	(0.048)	0.075
DJIA crosses 2000	119.615*	(23.439)	0.000
September 11th	−191.510*	(30.128)	0.000
FECM	−0.266*	(0.046)	0.000
Constant	70.252*	(19.322)	0.000
Volatility equation			
Political			
Approval	0.050*	(0.015)	0.001
Approval$_{t-1}$	0.014	(0.015)	0.177
Approval$_{t-2}$	−0.009	(0.009)	0.169

Table 1 continued

Mean equation	Coefficient	(SE)	p value
Honeymoon	1.302	(0.834)	0.060
Honeymoon$_{t-1}$	−0.103	(0.446)	0.408
Honeymoon$_{t-2}$	−0.607	(1.079)	0.287
Election	0.619	(0.498)	0.107
Election$_{t-1}$	−0.244	(0.833)	0.385
Election$_{t-2}$	0.325	(0.595)	0.293
Economic			
Inflation	0.045	(0.156)	0.386
Inflation$_{t-1}$	−0.364*	(0.162)	0.013
Inflation$_{t-2}$	−0.239	(0.197)	0.113
Unemployment	−0.242	(0.398)	0.272
Unemployment$_{t-1}$	0.019	(0.430)	0.482
Unemployment$_{t-2}$	−0.143	(0.423)	0.368
ICS	−0.015	(0.019)	0.212
ICS$_{t-1}$	0.039*	(0.020)	0.024
ICS$_{t-2}$	−0.010	(0.016)	0.273
Dow Jones	0.000	(0.000)	0.266
Dow Jones$_{t-1}$	0.000	(0.000)	0.321
Dow Jones$_{t-2}$	−0.000	(0.000)	0.057
Real disp. income	0.004*	(0.001)	0.001
Real disp. income$_{t-1}$	−0.002	(0.001)	0.058
Real disp. income$_{t-2}$	−0.003*	(0.001)	0.002
Media			
Positive sentiment	−0.006*	(0.001)	0.000
Positive sentiment$_{t-1}$	0.003*	(0.001)	0.003
Positive sentiment$_{t-2}$	−0.002	(0.001)	0.073
Negative sentiment	0.006*	(0.002)	0.001
Negative sentiment$_{t-1}$	−0.003*	(0.001)	0.011
Negative sentiment$_{t-2}$	−0.001	(0.001)	0.248
Constant	6.299*	(0.125)	0.000
ARCH	0.073*	(0.034)	0.016
ARCH-in-mean	−0.082*	(0.033)	0.007
Durbin Watson = 2.07	N = 369		

* $p \leq 0.05$ (All tests one-tailed)

a significant error correction between income, economic sentiment, and expenditures, indicating the three are in long-term equilibrium; 26.6% of the distance between the three series disappears a month after they are driven apart by an exogenous shock.

Interestingly, we also find that positive media sentiment contemporaneously exhibits a negative relationship with spending, but positively predicts increases in

spending one month out. Similarly, negative media coverage is simultaneously associated with greater spending but leads to reductions in spending a month later. We suspect this may be a function of measuring presidential sentiment, which takes longer to filter through the system and bleed over into economic activity than news that is directly about the economy. However, further investigation of this point is beyond the scope of this paper.

The significant ARCH parameter shows evidence of volatility clustering, or periods of high volatility grouping together (Engle 2003). We have modeled the mean of expenditures as a function of risk using an ARCH-M specification. We would expect volatility, indicating economic uncertainty, to have a negative effect on overall spending, and this is borne out in the data: as volatility increases, overall expenditures decrease. These results are consistent with work in economics showing that economic uncertainty leads citizens to tighten their belts.

Volatility Results

While we explored the variables affecting how much consumers spend in the mean equation, those same factors can affect the stability, or volatility, of economic behavior. Turning now to the volatility model, and as hypothesized in H2, the relationship between approval and expenditure volatility is positive. Just as in the mean equation, increased approval leads to a contemporaneous increase in expenditures. Honeymoons also have a similar, positive contemporaneous effect, albeit not at traditional levels of significance. Nevertheless, when political evaluations are high, volatility in consumer spending increases.

Also aligning with the results of the mean equation, increases in inflation dampens volatility in expenditures. Meanwhile, consumer sentiment and disposable income, both positive indicators of economic health, have a positive and significant effect on volatility. Thus, as with mean levels of approval, the increased ability to spend enables citizens' motivation and willingness to spend to play a greater role, creating greater volatility in the series. Similarly, as the economy shrinks and spending ability declines, so, too, do the fluctuations in spending.

Although marginally predictive of the mean of consumption expenditures, the unemployment rate does not have a significant effect on volatility in expenditures. The stock market is a similarly insignificant predictor of expenditure volatility. By including previously neglected political factors, it appears that the explanatory power of objective economic conditions has been reduced.

Instability in consumption expenditures is further influenced by the tone of the media's coverage of the president. As the president is portrayed more positively in one month, variance in PCE declines. The opposite is true of negative mentions: the more negative coverage a president receives, the more economic uncertainty increases. However, both are corrected by a significant rebound effect the following month. While these media effects account for a relatively small percentage of instability in PCE, they are further evidence of politics (as filtered through the media) affecting economic uncertainty.

Temporal Ordering and the Problem of Endogeneity

The theoretical model laid out in Fig. 1 is not the first of the macro-political economy (e.g., Alesina et al. 1993). Often such studies create large-scale models that address both short- and long-term effects but fail to account for endogeneity, and a similar criticism could be levied against the preceding analysis. For instance, one potential source of endogeneity is simultaneity bias due to a reciprocal relationship between presidential approval, consumer sentiment, and consumer spending. If the relationship is indeed reciprocal and this is not taken into account when estimating the model, estimates will be both biased and inefficient.

We have theoretical reasons to expect this relationship to be unidirectional. As discussed previously, we view this effect as an emotional spillover in which increasingly optimistic citizens are also more willing to open their wallets. And while there is an intriguing string of research showing that behaviors can affect one's mental state (e.g., smiling to increase feelings of happiness), it is clear that the standard flow of events is from attitudes and perceptions to behaviors—in this case, from political attitudes to economic behaviors.

We also have statistical reasons to expect the relationship to be unidirectional. Specifically, we can gain purchase on the temporal ordering of events using Granger-causality testing. If including past values of x improves predictions of y over those made solely based on past values of y, x is said to Granger-cause y. These Granger causality tests, displayed in Table 2, indicate that approval and consumer sentiment Granger cause changes in PCE. Based on these results, we feel confident changes in approval and consumer sentiment temporally precede changes in PCE. Likewise, we can rule out bidirectional Granger-causality.

Although we have demonstrated that changes in these variables occur in time before changes in PCE, we must still explore whether a single-equation FECM modeling strategy is justified. In order to use a single equation when there is a cointegrating relationship, one of the components of the FECM must be weakly

Table 2 Granger causality and weak exogeneity tests

Granger causality	F test	p value
Approval → PCE	3.14	0.01
Consumer sentiment → PCE	3.17	0.01
PCE → Approval	0.25	0.91
PCE → Consumer sentiment	2.09	0.08
Weak exogeneity*	ECM	Residuals
Approval weakly exog. to PCE	−0.001 (0.80)	0.25 (0.74)
Consumer sentiment weakly exog. to PCE	0.001 (0.44)	−1.58 (0.08)
Consumer sentiment weakly exog. to disposable income	0.000 (0.79)	0.37 (0.83)
Disposable income weakly exog. to PCE	0.072 (0.25)	−0.28 (0.04)

* t test (p value), two tailed

exogenous to the other (Charemza and Deadman 1997; Ericsson and Irons 1995; Engle et al. 1983). Table 2 shows that PCE is weakly exogenous to consumer sentiment, however the other component of the FECM, disposable income, is not weakly exogenous to PCE. As a result we need to specify an equation for the marginal process of RDI that includes an FECM and estimate the equations simultaneously.[13]

In addition to the two equations we have as a result of our exogeneity testing, we also have two endogenous explanatory variables: presidential approval and consumer sentiment. Similar to the penultimate chapter of Erikson et al.'s *The Macro Polity* (2002), we create a large-scale model of the political economy that includes both short- and long-term effects. Unlike Erikson et al. (2002), however, all our variables are measured monthly. This common time interval enables us to employ the multiple equation formulation that brings us closer to what these authors herald as the "ideal representation" (p. 386) of the macro-political system. Thus, rather than resorting to simulations as they do, we model multiple equations simultaneously.

In particular, we specified equations for the marginal processes of the endogenous explanatory variables, with theoretically informative priors determining the inclusion or exclusion of variables from each equation. These equations were estimated along with equations for PCE and RDI in a four equation near-VAR using seemingly unrelated regression. Table 3 presents the results from a variety of specifications of the PCE equation, including the results of the near-VAR.[14]

The results of the mean equation from Table 1 are presented in the first column of Table 3; the second column is an FECM model of the mean of PCE. Comparing these two columns allows us to see the degree to which the estimates of the mean are affected by estimating the variance equation and allowing conditional volatility to affect the mean of spending. While approval remains significant in the FECM model, the magnitude of the effect is diminished and operates at a lag. Moving from the FECM model to the third column that contains the PCE results from the near-VAR estimation, we are struck again by the consistency of the findings. Regardless of our modeling strategy, the results suggest presidential approval has a significant and substantively meaningful impact on consumer spending. There are, of course, many other ways to model consumer spending; we have tried to balance both theoretical and empirical considerations in our choices, and the robustness of the results across these models gives us additional confidence in our findings.

---

[13] To test for weak exogeneity, models were first specified for the marginal processes (e.g. consumer sentiment). These models were then estimated including an error correction mechanism (ECM) from the PCE model. If the marginal process is weakly exogenous to PCE, the ECM should be statistically insignificant. The next step is to include the residuals from the marginal process equation (estimated without the ECM) into the PCE model. A statistically insignificant coefficient for the residuals fails to reject the null hypothesis of weak exogeneity. Although not a component of the FECM, we included presidential approval in our weak exogeneity testing as a robustness check of our exclusion of this variable from the FECM. For a formal discussion of weak exogeneity, see Online Appendix E.

[14] The results for the models run using first differences instead fractional differencing techniques are presented in Online Appendix F.

Table 3 Specifications of the mean of personal consumption expenditures, 1978–2008

	ARCH-M		FECM		Near-VAR	
	Coeff. (SE)	p value	Coeff. (SE)	p value	Coeff. (SE)	p value
Political						
Approval	2.470* (0.695)	0.000	0.092 (0.330)	0.390	0.009 (0.314)	0.489
Approval$_{t-1}$	1.243* (0.619)	0.023	0.606* (0.337)	0.037	0.582* (0.321)	0.035
Approval$_{t-2}$	−0.584 (0.451)	0.098	−0.265 (0.331)	0.212	−0.256 (0.315)	0.208
Honeymoon	34.845 (48.460)	0.236	0.456 (12.837)	0.486	0.473 (12.226)	0.485
Honeymoon$_{t-1}$	−5.408 (30.205)	0.429	−11.426 (11.173)	0.154	−11.065 (10.644)	0.150
Honeymoon$_{t-2}$	−19.357 (47.348)	0.342	−0.563 (12.111)	0.482	−0.007 (11.526)	0.500
Election	27.315 (21.414)	0.101	3.139 (9.532)	0.371	3.018 (9.073)	0.370
Election$_{t-1}$	−16.112 (32.671)	0.311	−6.394 (11.668)	0.292	−6.945 (11.106)	0.266
Election$_{t-2}$	12.680 (22.137)	0.284	2.426 (10.981)	0.413	2.492 (10.450)	0.406
Economic						
Inflation	−17.253* (7.520)	0.011	−18.113* (4.059)	0.000	−17.475* (3.866)	0.000
Inflation$_{t-1}$	−27.187* (7.418)	0.000	−6.588 (4.381)	0.067	−5.997 (4.174)	0.076
Inflation$_{t-2}$	−11.909 (9.848)	0.114	−0.167 (4.583)	0.486	−0.602 (4.366)	0.445
Unemployment	−23.799 (16.858)	0.079	−22.344* (9.661)	0.011	−22.028* (9.204)	0.009
Unemployment$_{t-1}$	−7.644 (20.303)	0.354	−22.645* (10.138)	0.013	−21.359* (9.658)	0.014
Unemployment$_{t-2}$	−17.569 (17.548)	0.159	−11.727 (9.592)	0.111	−11.559 (9.138)	0.104
ICS	−0.744 (0.740)	0.158	0.077 (0.421)	0.427	0.385 (0.400)	0.168
ICS$_{t-1}$	1.571* (0.858)	0.034	0.296 (0.426)	0.244	0.281 (0.405)	0.244
ICS$_{t-2}$	−0.948 (0.707)	0.090	−0.268 (0.408)	0.256	−0.271 (0.389)	0.243
Dow Jones	0.006 (0.009)	0.271	0.010* (0.005)	0.033	0.010* (0.005)	0.032
Dow Jones$_{t-1}$	0.014 (0.010)	0.078	0.013* (0.006)	0.014	0.012* (0.005)	0.013
Dow Jones$_{t-2}$	−0.011 (0.012)	0.163	0.010* (0.006)	0.041	0.010* (0.005)	0.038
Real disp. income	0.267* (0.050)	0.000	0.126* (0.027)	0.000	0.135* (0.025)	0.000
Real disp. income$_{t-1}$	−0.255* (0.063)	0.000	−0.188* (0.046)	0.000	−0.191* (0.044)	0.000
Real disp. income$_{t-2}$	−0.088* (0.050)	0.040	0.024 (0.027)	0.185	0.024 (0.025)	0.174

Table 3 continued

	ARCH-M		FECM		Near-VAR	
	Coeff. (SE)	*p* value	Coeff. (SE)	*p* value	Coeff. (SE)	*p* value
Media and other events						
Positive sentiment	−0.232* (0.072)	0.001	−0.011 (0.027)	0.346	−0.011 (0.026)	0.332
Positive sentiment$_{t-1}$	0.138* (0.061)	0.012	−0.007 (0.027)	0.398	−0.006 (0.026)	0.403
Positive sentiment$_{t-2}$	−0.015 (0.048)	0.380	0.001 (0.027)	0.484	0.002 (0.025)	0.477
Negative sentiment	0.211* (0.077)	0.004	−0.010 (0.033)	0.237	−0.010 (0.032)	0.380
Negative sentiment$_{t-1}$	−0.128* (0.065)	0.025	0.021 (0.033)	0.498	0.021 (0.031)	0.255
Negative sentiment$_{t-2}$	−0.069 (0.048)	0.075	0.004 (0.031)	0.450	0.004 (0.030)	0.449
DJIA crosses 2000	119.615* (23.439)	0.000	122.546* (21.277)	0.000	121.737* (20.246)	0.000
September 11th	−191.510* (30.128)	0.000	−179.821* (21.277)	0.000	−179.248* (20.883)	0.000
FECM	−0.266* (0.046)	0.000	−0.286* (0.046)	0.000	−0.289* (0.044)	0.000
Constant	70.252* (19.322)	0.000	13.369* (3.099)	0.000	12.980* (2.950)	0.000

N = 369

* $p \leq 0.05$ (All tests one-tailed)

Discussion

As an effort to stave off the impending "Great Recession," President Bush signed into law the Economic Stimulus Act of 2008, giving each taxpayer a rebate of up to $600. The hope was that the extra income would lead to increased consumer expenditures, thus jumpstarting the flagging economy and avoiding a prolonged recession. Bush's concern with boosting consumer spending was not misplaced: consumer expenditures comprise the lion's share of domestic spending, driving economic growth and ultimately affecting other objective indicators of macroeconomic health (Vuchelen 2004; NIPA 2009). In creating this Act, political actors—much like economists—were focusing on the role objective economic conditions play in economic behavior. But in assuming that spending is exogenous to political evaluations, both have overlooked the possibility that politics matter for the economic health of the country.

Our results indicate that economic behavior can be affected by the political system not only through direct measures such as the Stimulus Act, but also by boosting optimism and confidence in the system itself. This effect is not trivial: aggregated across the population, spending can increase or decrease by billions of

dollars as a result of typical changes in presidential approval. Such results demonstrate that the economic consequences of political systems occur not just in extreme situations, as highlighted by research in comparative politics, but also in stable and enduring democracies that experience relatively minor changes in political attitudes. Our results also extend the nascent literature on the political determinants of spending by using direct measures of the concepts of interest with data spanning four decades and five presidential administrations. The use of direct measures and time series data gives us added confidence that the impact of political attitudes on economic behavior, found to exist previously in cross-sectional studies, is substantive and enduring.

One implication of these results is that previous studies of approval have likely overstated the influence of economic conditions. Certainly there is no question that the economy, and perceptions of the economy, are important forces in political evaluations. Yet the economy itself is partially driven by confidence in the political system, thus creating a self-fulfilling prophecy. When political times are good, happy citizens spend freely; when times are bad, citizens tighten their belts and hunker down. This type of spillover effect is common in our daily life, and spending decisions are no exception.

Our findings also lend credence to the popular conception held by citizens and espoused by many politicians that the president has a great deal of power when it comes to economic conditions. Given the complexity of the American economy, one could easily argue that it is unfair or even ignorant that the economy plays such a large role in the electoral fortunes of candidates. Yet here we see that citizens do not just reward and punish their representatives for the state of the economy, but also they respond in kind to their increasing or decreasing approval in the "Chief Economist." By most accounts, the 2008 tax rebates had a modest impact on the economy, as many citizens opted to save it or use it to pay down debts. Our results suggest that this is a limited view of the tax rebates, and the economy may have benefitted more indirectly from increased approval of Bush as a result of the rebates than directly from the rebates themselves. The connection between approval and spending gives the president an important point of leverage, and one that would seem to be more directly and easily manipulated than objective economic factors.

This study also moves beyond previous analyses focusing on mean levels of spending by explicitly considering volatility. We find that increased approval leads to not only increased spending but also increased volatility in that spending. Though counterintuitive on its face, such results are in line with previous research showing a positive association between political attitudes and economic volatility. When approval is low and citizens are saving rather than spending, volatility in spending must also be low: money will continue to be spent on non-durable necessities, but motivation to spend becomes less relevant to spending decisions. As approval and spending increases, volatility will also increase as motivation comes to play an increasingly important role vis-à-vis ability.

By the same token, our results indirectly relate to recent analyses of the ICS. Research by Kellstedt et al. (2015) demonstrates that the ICS as a whole is a reliable measure of consumer sentiment, but in some instances will mask the impact of economic perceptions on spending. Their analysis reveals that prospective,

sociotropic assessments of the economy predicts spending on durable goods, when the composite index reveals no such relationship. Since many durable goods (e.g., household appliances, cars) tend to be large, non-essential purchases (as opposed to non-durable, essential, and comparatively cheap goods such as food, clothing, and gas), we expect motivation to play a critical role in such expenditures. Thus, if we are willing to accept that the ICS captures motivation to spend (which we do not, though that is a question for another day), we should not only see its components are stronger predictors of durable than non-durable spending, but also we should witness higher volatility in that spending. Our analysis, which examines spending on both type of goods combined, should be somewhere in the middle: motivation is an important but qualified moderator of spending.

One interesting but unanswered question from this analysis is whether the effect of political approval on spending is asymmetrically impacted by partisanship. Previous research has demonstrated that not all citizens respond equivalently: for example, survey data regarding the impact of the 2000 election on spending demonstrated that spending increases among Republicans and decreases among Democrats were driven entirely by voters (Enns and Anderson 2009). It would not be surprising to see that increased approval for out-partisans increases spending far more than comparable increases for in-party identifiers (see, for example, Kriner and Schwartz 2009). Conversely, if our theory is correct, we should not see asymmetry when it comes to the volatility of spending: Republicans and Democrats alike should be equally affected by lowered approval and restricted spending. Unfortunately, while presidential approval is available by party identification, we are unaware of any data on consumer spending over time broken down by party identification, which would provide an additional test of our theory.

Similarly, it would not be surprising to see that this effect is to some degree non-linear, and that approval impacts consumer spending more at some levels than others. For example, it is plausible that increases in approval have a greater impact at the mid-point than at very low or high levels of approval, in the sense of diminishing marginal returns (or losses). Alternatively, perhaps the relationship between approval and spending is greater in the latter part of a president's administration, when citizens' attitudes are more crystallized. In other words, a jump in approval at the end of a president's term is more "real" than one at the beginning (although see Gronke and Brehm 2002). Although beyond the scope of this paper, we find such questions to be compelling and worth pursuit.

Moreover, as any study suffers from limitations, ours is no exception. On one hand, the use of aggregate time series data allows us to overcome a number of problems in answering our research question. While spending is, at its core, the result of individual level decisions, it is national PCE that creates economic movement. Moreover, individual-level data is plagued with problems such as response bias and measurement error, problems that are diminished when responses are aggregated (Kramer 1983). On the other hand, and as noted at the outset, the use of such data prevents a direct test of our proposed theoretical mechanism. Although individual analyses that find similar results assuages these concerns to a degree (Enns and Anderson 2009; Gerber and Huber 2010), a focused test of how economic behavior is affected by political evaluations would be of value. Indeed, individual-

level and specifically experimental data is ultimately needed to convincingly demonstrate the particular spillover effect we hypothesize here. The theories of cognitive dissonance and emotional spill-over could be tested against one another by manipulating dissonance or affect and measuring willingness to spend.

Moreover, the data were initially collected in the middle of President Obama's first term, thus why the series end in 2008. Given the events that happened near the end of these series and shortly thereafter, one might wonder how well the results hold up when there are greater shocks to the system than what we observe here. Indeed, whether the relationship between approval and consumer spending is stronger or weaker in times of severe recession would be an interesting finding either way. We leave this important and interesting question for another day.

Regardless of the theoretical mechanism, it is increasingly clear that politics is not simply affected by economics, but also influences it, as well. Incorporating political variables can sharpen forecasts of economic behavior and highlight the important role political attitudes play in determining economic outcomes. This perspective also helps to explain how the president might impact the economy beyond direct measures, and provides evidence of carryover effects on a large scale. As we stated at the outset: politics and economics are closely connected; our results contribute to a growing body of work showing this to be even more the case than previously thought.

References

Aisen, A., & Veiga, F. J. (2006). Does political instability lead to higher inflation? A panel data analysis. *Journal of Money, Credit, and Banking, 38*, 1379–1389.

Alesina, A., Lodregan, J., & Rosenthal, H. (1993). A model of the political economy of the United States. *American Political Science Review, 87*(1), 12–33.

Alesina, A., Özler, S., Roubini, N., & Swagel, P. (1996). Political instability and economic growth. *Journal of Economic Growth, 1*, 189–211.

Bautin, M., Vijayarenu, L., & Skiena, S. S. (2008). International sentiment analysis for news and blogs. *Paper presented at 2nd international conference on weblogs and social media (ICWSM 2008)*.

Bautin, M., Ward, C. B., Patil, A., & Skiena, S. S. (2010). Access: News and blog analysis for the social sciences. *Paper presented at 19th Int. World Wide Web conference (WWW 2010)*.

Bautin, M., Ward, C. B., & Skiena, S. S. (2009). A high-performance architecture for historical news analysis. *Paper presented at 2nd Hadoop Summit*.

Blinder, A. S. (1981). Inventories and sticky prices: More on the microfoundations of macroeconomics. *Working Paper, National Bureau of Economic Research*.

Brader, T. (2005). Striking a responsive chord: How political ads motivate and persuade voters by appealing to emotions. *American Journal of Political Science, 49*(2), 388–405.

Brody, R. A. (1991). *Assessing the president: The media, elite opinion, and public support*. Stanford, CA: Stanford University Press.

Canes-Wrone, B., & Park, J.-K. (2012). Electoral business cycles in OECD countries. *American Political Science Review, 106*(1), 103–122.

Carroll, C. D. (1992). The buffer-stock theory of saving: Some macroeconomic evidence. *Brookings Papers on Economic Activity, 2*, 61–156.

Carroll, C., Fuhrer, J., & Wilcox, D. (1994). Does consumer sentiment forecast household spending? If so, why? *The American Economic Review, 84*(5), 1397–1408.

Charemza, W., & Deadman, D. (1997). *New directions in econometric practice: General to specific modelling, cointegration, and vector autoregression*. Lyme: Edward Elgar.

Chong, J., Halcoussis, D., & Phillips, M. (2011). Does market volatility impact presidential approval? *Journal of Public Affairs, 11*, 387–394.

Christiansen, C., Schmeling, M., & Schrimpf, A. (2012). A comprehensive look at financial volatility prediction by economic variables. *Journal of Applied Econometrics, 27*, 956–977.

Chung, M. (2013). Two out of five americans cut spending amid government shutdown. *Bloomberg Business*. 15 October. http://www.bloomberg.com/news/articles/2013-10-15/two-out-of-five-americans-cut-spending-amid-government-shutdown.

Cryder, C. E., Lerner, J. S., Gross, J. J., & Dahl, R. E. (2008). Misery is not miserly sad and self-focused individuals spend more. *Psychological Science, 19*, 525–530.

Cukierman, A., Edwards, S., & Tabellini, G. (1992). Seigniorage and political instability. *The American Economic Review, 82*(3), 537–555.

Davidson, J. E., Hendry, D. F., Srba, F., & Yeo, S. (1978). Econometric modelling of the aggregate time-series relationship between consumers' expenditure and income in the United Kingdom. *The Economic Journal, 88*, 661–692.

De Boef, S., & Kellstedt, P. (2004). The political (and economic) origins of consumer confidence. *American Journal of Political Science, 48*(4), 633–649.

Dhawan, R., & Jeske, K. (2006). How resilient is the modern economy to energy price shocks? *Economic Review-Federal Reserve Bank of Atlanta, 91*, 21.

Dynan, K. E., Elmendorf, D. W., & Sichel, D. E. (2006). Can financial innovation help to explain the reduced volatility of economic activity? *Journal of Monetary Economics, 53*(1), 123–150.

Engle, R. F. (2003). *Risk and volatility: econometric models and financial practice. Nobel lecture*. Stockholm: Nobel Foundation.

Engle, R. F., Hendry, D. F., & Richard, J.-F. (1983). Exogeneity. *Econometrica, 51*(2), 277–304.

Engle, R. F., Lilien, D. M., & Robins, R. P. (1987). Estimating the time varying risk premia in the term structure: The ARCH-M model. *Econometrica, 55*(2), 391–407.

Enns, P. K., & C. J. Anderson. (2009). The American voter goes shopping: micro-foundations of the partisan economy. *APSA 2009 Toronto Meeting Paper*.

Ericsson, N. R., & Irons, J. S. (1995). *Testing exogeneity*. NewYork: Oxford University Press.

Erikson, R., MacKuen, M., & Stimson, J. (2002). *The macro polity*. New York: Cambridge University Press.

Evans, G., & Pickup, M. (2010). Reversing the causal arrow: The political conditioning of economic perceptions in the 2000–2004 U.S. presidential election cycle. *Journal of Politics, 72*(4), 1236–1251.

Fiorina, M. (1978). Economic retrospective voting in american national elections: A micro-analysis. *American Journal of Political Science, 22*, 426–443.

Fiorina, M. (1981). *Retrospective voting in american national elections*. New Haven: Yale University Press.

Garner, A. (1991). Forecasting consumer spending: Should economists pay attention to consumer confidence surveys? *Federal Reserve Bank of Kansas City Economic Review, 76*, 57–71.

Gelper, S., Lemmens, A., & Croux, C. (2007). Consumer sentiment and consumer spending: Decomposing the granger causal relationship in the time domain. *Applied Economics, 39*(1), 1–11.

Gerber, A. S., & Huber, G. (2009). Partisanship and economic behavior: Do partisan differences in economic forecasts predict real economic behavior? *American Political Science Review, 103*(3), 407–426.

Gerber, A. S., & Huber, G. (2010). Partisanship, political control, and economic assessments. *American Journal of Political Science, 54*(1), 153–173.

Godbole, N., Srinivasaiah, M., & Skiena, S. (2007). Large-scale sentiment analysis for news and blogs. In *Proceedings of the international conference on weblogs and social media*, pp. 219–222.

Granger, C. W. (1980). Long-memory relationships and the aggregation of dynamic models. *Journal of Econometrics, 14*(2), 227–238.

Grant, T., & Lebo, M. J. (2016). Error correction methods with political time series. *Political Analysis, 24*, 3–30.

Green, D., Palmquist, B., & Schickler, E. (2002). *Partisan hearts and minds: Political parties and the social identities of voters*. New Haven, CT: Yale University Press.

Greene, S. (2004). Social identity theory and party identification. *Social Science Quarterly, 85*, 136–153.

Gronke, P., & Brehm, J. (2002). History, heterogeneity, and presidential approval. *Electoral Studies, 21*, 425–452.

Gujarati, D. N. (2004). *Basic econometrics* (4th ed.). New York: McGraw Hill.

Han, S., Lerner, J. S., & Keltner, D. (2007). Feelings and consumer decision making: The appraisal-tendency framework. *Journal of consumer psychology, 17*, 158–168.

Katona, G. (1968). Consumer behavior: Theory and findings on expectations and aspirations. *American Economic Review, 58*(2), 19–30.

Kellstedt, P. M., Linn, S., & Lee Hannah, A. (2015). The usefulness of consumer sentiment: Assessing construct and measurement. *Public Opinion Quarterly, 79*, 181–203.

Kernell, S. (1978). Explaining presidential popularity. *American Political Science Review, 72*(2), 506–522.

Keynes, J. M. (1936). *The general theory of employment, interest, and money*. New York: Harcourt, Brace, and World, Inc.

Kiewiet, D. R. (1983). *Macroeconomics and micropolitics: The electoral effects of economic issues*. Chicago: University of Chicago Press.

Kinder, D. R., & Kiewiet, D. R. (1979). Economic discontent and political behavior: The role of personal grievances and collective economic judgments in congressional voting. *American Journal of Political Science, 23*, 495–527.

Kinder, D. R., & Kiewiet, D. R. (1981). Sociotropic politics: The American case. *British Journal of Political Science, 11*, 129–141.

Kramer, G. H. (1983). The ecological fallacy revisited: Aggregate- verses individual-level findings on economic and elections, and sociotropic voting. *American Political Science Review, 77*(1), 92–111.

Kriner, D., & Schwartz, L. (2009). Partisan dynamics and the volatility of presidential approval. *British Journal of Political Science, 39*(3), 609–631.

Ladner, M., & Wlezien, C. (2007). Partisan preferences, electoral prospects, and economic expectations. *Comparative Political Studies, 40*, 571–596.

Lebo, M. J., & Grant, T. (2016). Equation balance and dynamic political modeling. *Political Analysis, 24*, 69–82.

Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart strings and purse strings: Carryover effects of emotions on economic decisions. *Psychological Science, 15*(5), 337–341.

Lettau, M., & Ludvigson, S. (2001). Consumption, aggregate wealth, and expected stock returns. *The Journal of Finance, 56*(3), 815–849.

Lockerbie, B. (1989). Change in party identification: The role of prospective economic evaluations. *American Politics Research, 17*(3), 291–311.

Loewenstein, G., & Lerner, J. S. (2003). The role of affect in decision making. In R. Davidson, H. Goldsmith, & K. Scherer (Eds.), *Handbook of affective science* (pp. 619–642). New York: Oxford University Press.

Ludvigson, S. (2004). Consumer confidence and consumer spending. *Journal of Economic Perspectives, 18*(2), 29–50.

MacKuen, M. B., Erikson, R. S., & Stimson, J. A. (1989). Macropartisanship. *American Political Science Review, 83*(4), 1125–1142.

MacKuen, M. B., Erikson, R. S., & Stimson, J. A. (1992). Peasants or bankers? The American electorate and the U.S. Economy. *American Political Science Review, 6*(3), 597–611.

Marcus, G., & MacKuen, M. (1993). Anxiety, enthusiasm, and the vote: The emotional underpinnings of learning and involvement during presidential campaigns. *American Political Science Review, 87*(3), 672–685.

Mobarak, A. M. (2005). Democracy, volatility, and economic development. *Review of Economics and Statistics, 87*, 348–361.

Nadeau, R., Niemi, R., Fan, D., & Amato, Timothy. (1999). Elite economic forecasts, economic news, mass economic judgments, and presidential approval. *Journal of Politics, 61*, 109–135.

National Income and Product Account. (2009). *Personal Consumption Expenditures*. National Income and Product Account.

Ozler, S., & Tabellini,G. (1991). *External debt and political instability*. No. w3772. National Bureau of Economic Research.

Poterba, J., & Samwick, A. (1995). Stock ownership patterns, stock market fluctuations, and consumption. *Brookings Papers on Economic Activity*, pp. 295–372.

Rick, S. I., Cryder, C. E., & Loewenstein, G. (2008). Tightwads and spendthrifts. *Journal of Consumer Research, 34*, 767–782.

Romer, C. (1990). The great crash and the onset of the great depression. *Quarterly Journal of Economics, 105*, 597–624.

Schwartz, J., Hoover, S., & Schwartz, A. (2008). The political advantage of a volatile market: The relationship between presidential popularity and the 'Investor Fear Gauge'. *Journal of Public Affairs, 8*, 195–207.

Soroka, S. N., Stecula, D. A., & Wlezien, C. (2015). It's (change in) the (future) economy, stupid: Economic indicators, the media, and public opinion. *American Journal of Political Science, 59*(2), 457–474.

Starr, M. (2008). *Consumption, sentiment, and economic news*. AU Department of Economics Working Paper Series, 2008–16.

Tullock, G. (1976). *The vote motive: An essay in the economics of politics, with applications to the British Economy*. London: Institute of Economic Affairs.

Vuchelen, J. (2004). Consumer sentiment and macroeconomic forecasts. *Journal of Economic Psychology, 25*, 493–506.