The Role of Partisanship in Aggregate Opinion

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Abstract Despite the centrality of party identification in U.S. politics, the effects of partisanship on public opinion remain elusive. In this article, we use monthly economic opinion data disaggregated by partisanship to evaluate the role of party identification on economic perceptions. Using both static and time-varying error correction models, we find strong evidence of partisan bias in the public's assessment of the state of the economy, and importantly, this bias changes over time. This evidence of the changing influence of partisanship helps reconcile some of the different findings of individual and aggregate level opinion studies. We also examine how the time-varying influence of partisanship affects aggregate public opinion. Specifically, we show that the increased influence of partisanship has led aggregate economic perceptions to respond more slowly to objective economic information.

> Identification with a party raises a perceptual screen through which the individual tends to see what is favorable to his partisan orientation. (Campbell et al. 1960, p. 133)

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Republicans, Democrats, and Independents, like other groupings of Americans, generally change opinions—or remain stable—in a parallel fashion. (Page and Shapiro 1992, pp. 308–309)

Does partisanship act as a screen that leads Democrats and Republicans to update their opinions distinctly or do partisans incorporate new information in a parallel manner? As the quotes above suggest, the answer to this question depends in large measure on the level of analysis through which partisanship is studied. Individual-level studies pioneered by Campbell et al. (1960) offer resounding evidence that partisanship has a profound impact on political attitudes. By contrast, Page and Shapiro (1992) and others studying how public opinion moves over time contend that partisanship plays a relatively minor role in aggregate opinion, with both Democrats and Republicans updating in tandem in response to changing circumstances or information.

However, recent scholarship on political polarization provides reasons to think that the answer to this question—whether or not partisanship raises a perceptual screen—may change over time. Those studying the issue of polarization from the perspective of political institutions (Binder 1999, 2003), presidential popularity (Jacobson 2006), public opinion, and voting (Gelman et al. 2008) agree that polarization varies over time and that it is higher in recent years.[1] Voters have also become better sorted, linking their partisanship to their political ideology (Levendusky 2009). Furthermore, media heterogeneity has also increased over time with implications for partisan polarization (Iyengar and Hahn 2009; Prior 2007). Drawing on this literature and existing debates about the role of partisanship, we develop a theory of time-varying partisan influence. Specifically, we argue—and show—that at times a "partisan screen" does exist, but its effects are not constant. Since the 1980s, the effects of partisanship on opinion updating have ranged from almost negligible to massive. Thus, depending on the period of analysis, we find support for both the individual level studies showing partisan bias and the aggregate studies showing parallelism.

To examine our theory of time-varying partisan influence, we rely on a familiar time series technique, error correction models (ECM), and explain how the logic of these models makes them ideally suited to the study of partisan bias. We extend the logic of ECMs to include a time-varying error correction rate consistent with the idea that partisanship exerts more or less effect depending on the time period. In the analysis of partisan bias, we focus on the public's monthly evaluation of the condition of the national economy. These economic evaluations allow us to better isolate the changes in economic conditions that should lead to "rational" opinion updating. That is, this analysis of economic evaluations focuses on the ways in which different partisan groups use available information differently. In this context, polarization arises when Democrats and Republicans respond differently to the same information about current economic conditions. Because the analysis is across administrations, we can distinguish between different preferences (e.g., Republicans might consistently care more about inflation than unemployment) and

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[1] Even in his counterargument to claims of rising polarization, Fiorina (2006) concedes that on political "evaluations," like presidential job approval, polarization has increased.

partisan bias (partisans respond to information differently depending on which party is in control of the presidency). After identifying periods of partisan bias, we quantify whether this bias affects aggregate public opinion, paying particular attention to recent years. Given that polarization has increased simultaneously among political institutions, leaders, and the general public, it seems unlikely that aggregate public opinion could be immune to its effects. Indeed, we find that during the end of George W. Bush's presidency, both Democrats and Republicans' slow reaction to objective economic information caused aggregate measures of the public's overall economic rating to respond much more slowly than expected.

The Nature of Partisan Bias

Survey research has documented partisanship's influence on information processing and opinion updating at the individual level (Berelson et al. 1954; Campbell et al. 1960; Finkel 1993; Goren 2002, 2007; Jacoby 1988; Markus and Converse 1979; Stokes 1966; Zaller 1992). As Stokes (1966, p. 127) notes, "for most people the tie between party identification and voting behavior involves subtle processes of perceptual adjustment by which the individual assembles an image of current politics consistent with his partisan allegiance." Experimental studies also suggest that individuals' motivations to maintain consistent attitudes produce strong partisan effects (Gaines et al. 2007; Kunda 1990; Taber and Lodge 2006; Taber et al. 2009). According to individual level analyses, partisanship influences what information individuals encounter, whether they accept or discount the information, and how they interpret the information.

Yet, how these individual partisan effects influence aggregate public opinion remains unclear. Many overtime studies of public opinion do not consider potential partisan differences and evaluate the public as a whole (e.g., DeBoef and Kellstedt 2004; MacKuen et al. 1992; Stimson et al. 1995; Stimson 1999; Wlezien 1995).[2] Furthermore, the studies that do examine partisan groups over time have reached different conclusions. Hibbs (1982) argues that Democrats and Republicans update their presidential evaluations differently in response to changes in unemployment and inflation. Lebo and Cassino (2007) reach a slightly different conclusion, contending that partisan groups generally incorporate economic performance into their presidential approval ratings, but only for presidents of the opposite party. A third perspective questions whether partisan groups show any differences in their opinion updating. These scholars show that Republicans, Independents, and Democrats tend to update their opinions in parallel (Erikson et al. 2002; Gerber and Green 1999; Page and Shapiro 1992).

The notion that partisan groups update their opinions in parallel corresponds with Gerber and Green (1999) and Green et al.'s (2002) view of partisanship, which specifically counters the notion of partisan bias. They make the provocative claim

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[2] As we note below, not all time series opinion studies ignore partisanship. See, for example, Page and Shapiro (1992), Erikson et al. (2002), and Gerber and Huber (2010).

that partisanship, like race, class, or gender, is a form of social identification.[3] According to these authors, just as religious or regional attachments are not a direct function of recent experiences, social attachment to the Republican or Democratic party does not depend on recent political and economic news. We might expect Democrats to anticipate a strong economy if a Democrat is president but their identity or attachment to the party does not depend on this outcome. Like parishioners who complain about a boring sermon but still return the next Sunday, partisans can take note of an economic downturn or a political scandal, and still remain attached to the party. In other words, partisans receive favorable *and* unfavorable news and they update their opinions accordingly without compromising feelings of partisan identification.

Bartels (2002) offers a different theoretical interpretation of parallel opinion change. He contends that the unbiased updating that Green and his coauthors posit actually predicts opinion convergence. When objective conditions change, rational updating should lead partisan assessments to converge, not remain parallel. Parallel opinion change would provide evidence that partisans are assessing new informa-tion with the same partisan filter they used to formulate their initial evaluation. As Bartels (2002, p. 138) summarizes, "Partisan bias in political perceptions plays a crucial role in perpetuating and reinforcing sharp differences in opinion between Democrats and Republicans." Thus, according to Bartels, convergence, not parallelism, signals a lack of partisan bias.[4]

We are left with three competing views of how partisanship influences public opinion updating. According to Bartels (2002), non-partisan updating would lead Republican and Democrats' beliefs to converge. By contrast, pure-partisan updating should lead to opinion divergence (e.g., Taber and Lodge 2006; Zaller 1992). Or, we may observe parallelism, where the individuals' partisan filter is weak enough to let opposing messages through (Gerber and Green 1999; Green et al. 2002) but strong enough to prevent opinion convergence (Bartels 2002). Each of these perspectives holds different implications for aggregate public opinion. Consider, for example, the *New York Times* headline, "The Testing of a President: Public Opinion; Clinton Holds Mostly Steady in the Polls."[5] Did approval hold steady because Democrats and Republicans, on average, did not change their opinions or because their support diverged in equal amounts? Simply knowing whether aggregate opinion held steady or changed does not provide information about the underlying behavior of partisans.

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[3] Several other notable theories of partisanship (e.g., Achen 1992; Downs 1957; Fiorina 1981) propose that causality runs the other direction, where party identification is a function of voters perceptions of past (or expected) party behavior. Thus, voters adopt and solidify their partisanship based on the perceived benefit of the party's actions. These models imply that partisanship will become stronger as more information enters what Fiorina (1981) calls voters' "running tally" of past political evaluations. Whether or not this strengthening partisanship influences individuals' reception of and responses to new information is an open question within this literature.

[4] In contrast to Bartels, Bullock (2009) recently showed that Bayesian learning need not produce opinion or belief convergence. However, given our interest is in whether partisans update their economic evaluations differently during different periods, we are comfortable with the claim that in a *relative* sense, parallel opinion change signals more similarities across partisan groups than divergent change.

[5] This headlines comes from the *New York Times*, 23 Sep 1998.

The Role of Partisanship on Opinion Over Time

In contrast to most existing treatments of partisanship, we propose that partisan bias and its resulting influence on aggregate public opinion change over time. Thus, rather than trying to resolve the debate between those arguing for and against partisan bias, we contend that depending on the time period, it is possible to observe convergence, divergence, and parallel updating in partisans' evaluation of the economy. In other words, the discrepancy between individual level studies showing strong partisan effects and aggregate studies showing parallel partisan movement may result in part from different periods of analysis.

To develop our expectations of the time-varying nature of partisanship, we draw on both mass public and elite-level accounts of partisanship and party polarization. Levendusky (2009, pp. 4–5) offers an important distinction between partisan polarization and partisan sorting, noting that "sorting is a changing correlation between partisanship and ideology" and polarization "means that voters are adopting more ideologically extreme positions." We expect both sorting and polarization to increase the influence of partisanship on information processing and opinion updating. Our aim is not to disentangle these two processes. Rather, we seek to show that the influence of partisanship has changed overtime and this carries implications for both partisan opinion updating *and* aggregate opinion.

A rich literature on partisanship has emerged in recent years, and these studies describe the rise of partisan differences, showing that the source of this polarization arises from a variety of factors. Zaller (1992) documents the potential for partisan polarization in public opinion and argues that we should expect partisan polarization, particularly among the politically aware, when media and partisan elites diverge along partisan lines. Thus, when elite rhetoric converges (for example, following a "rally-round-the-flag" event (Mueller 1973) or robust economic conditions), we should expect the influence of partisanship on related opinions and issues to diminish. By contrast, when elites polarize along partisan lines (for example, as the conflict in Vietnam progressed (Zaller 1992)), Democrats and Republicans should increasingly rely on their partisanship when processing related information.

While Zaller emphasizes short-term changes in the media environment, institutional changes in media also matter for partisan bias (e.g., Iyengar and Hahn 2009; Prior 2007). Prior (2007), for example, shows how increasingly fragmented media sources have led to increased polarization among voters. As cable and internet news sources have multiplied, partisans can easily tune in to political information and those less interested in politics, who tend to be moderates, can more easily replace political information with entertainment television. The work of these scholars implies that an analysis of partisanship and opinion change must allow for variation across the short-term and long-term media context.

Looking within political institutions, we also see evidence of partisan polarization since the percent of moderates in Congress began to decline in the 1970s (Binder 2003; McCarty et al. 2006). As elites have polarized, the public has become more sorted into partisan labels, leading to a stronger connection between ideology and partisanship (Levendusky 2009, see also, Fiorina 2006; Gelman et al. 2008).

As more individuals connect their political ideologies to their partisanship, we expect the influence of partisanship on information processing and opinion updating to increase.

However, before we precede to these predictions, our time-varying argument also carries implications for *aggregate* public opinion. Here we rely on the notion of "sticky" updating, developed in the economics literature (Carroll 2003; Mankiw and Reis 2002, 2006). The basic idea behind sticky information is that habit, bounded rationality, and transaction costs lead some economic agents to collect information and update their economic decisions slowly over time. Thus, aggregate economic expectations (or opinions) will appear to react more slowly (i.e., become "stickier") than would otherwise be expected. While the notion that some individuals (or even most individuals) are slow to update their opinions is unlikely to surprise public opinion scholars, the logic of sticky updating holds an important implication for our analysis of aggregate economic evaluations. If partisan bias varies over time, the "stickiness" of the public's economic evaluations will rise and fall as a function of this "bias." Thus, the notion of stickiness suggests we should look to the rate of opinion updating when evaluating how partisan bias influences aggregate opinion. We will see some evidence consistent with the expectation of "sticky" partisan updating but we learn that the story is much more complex. The analysis of partisanship's influence on aggregate opinion produces a surprising conclusion that reinforces the importance of relying on both subgroup and aggregate data when studying the influence of partisanship.

Data on Partisan Economic Evaluations

In order to understand how partisanship influences opinion change, we analyze monthly evaluations of the economy from 1985 to 2007. Economic evaluations provide several advantages for our analysis. First, individuals' assessments of the economy (at least in the aggregate) consistently track objective economic indicators (De Boef and Kellstedt 2004; Juster and Wachtel 1972; Mueller 1966). Thus, changes in the objective economy provide an observable benchmark for "rational" opinion updating. The use of such a benchmark is necessary to evaluate Bartels' parallelism thesis. Although Democrats and Republicans may reward or punish presidents differently for rising inflation and unemployment (Hibbs 1982), both partisan groups should view high inflation and high unemployment as bad economic news and low inflation and low unemployment as good economic news. Thus, unbiased updating implies that Democrats and Republicans' economic evaluations will converge. Divergence, by contrast, will provide evidence of a partisan screen.[6]

Second, economic evaluations offer a conservative test of partisan bias. Regular economic decisions, such as buying or leasing a car, purchasing a new washer or

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[6] It is important to remember that Bayesian updating does not necessarily produce convergence (Bullock 2009), but as previously mentioned we believe it is safe to view periods of convergence as evidence of *less* partisan bias than periods of divergence or even parallelism. This is especially likely for opinion updating in response to economic information, which is readily available and consistently relevant for decisions and behavior.

keeping the old one, or eating out versus staying in, create incentives for individuals to maintain accurate economic perceptions. Thus, if we find evidence of partisan differences on evaluations of the economy, it is likely that such differences would arise when examining other judgments like trust in government or the job performance of Congress.

The opinion data come from Gallup, ABC, and CBS surveys. Since 1985, these surveys have regularly asked respondents about their evaluation of economic conditions.[7] We combine the questions from the three surveys into a single index that reflects the percent of respondents who rated the economy favorably.[8] Because each of the surveys skipped some months, using data from all the surveys helps overcome the missing data problem that would occur if we relied on a single survey. But equally important, combining surveys in the months where they overlap (a majority of time points), decreases the sampling error because the total sample size increases. Thus, we can disaggregate by partisanship and still obtain an accurate estimate of the subgroup's rating of the economy. In theory, the values for the economic rating series can range from 0 (all respondents rate the economy negatively) to 100 (all respondents rate the economy positively). However, we are most interested in overtime changes in economic ratings and how these differ across subgroups.

The frequency of observations as well as the time period of analysis are both crucial to our analysis. Experiments have produced the most dramatic evidence of partisan bias. The experimental setting evaluates effects almost immediately after the new information has been introduced. Our use of monthly data may show evidence of partisan bias that annual observations (e.g., Gerber and Green 1999) do not uncover. Additionally, by examining monthly surveys from 1985 to the present, we allow for short and long-term changes in the media and political environment in a way that individual-level studies of economic perceptions cannot match.[9]

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[7] The Gallup question asks, "How would you rate economic conditions in this country today–as excellent, good, only fair, or poor?" CBS asks, "How would you rate the condition of the national economy these days? Is it very good, fairly good, fairly bad, or very bad?" The ABC surveys ask, "Do you think the nation's economy is getting better, worse, or staying about the same?" For the Gallup series, the percent rating the economy as excellent or good was tabulated, and for the CBS series, the percent rating the economy as very good or fairly good was calculated. For ABC, the percent saying the economy was getting better is tabulated. In the questions used to identify partisanship, respondents were asked whether "you usually consider yourself a Republican, Democrat or Independent."

[8] We combine the series using a technique for merging time series described in Shumway and Stoffer (2006). This procedure is similar to Stimson's (1999) Dyad Ratios Algorithm but provides a smoother estimate of the underlying opinion for the early years of the analysis. This was necessary since there were fewer polls to disaggregate for the subgroup analysis during the 1980s than in subsequent years. The smoother estimate provided by the Shumway and Stoffer (2006) approach guards against sampling error affecting the time-varying analysis that we employ. Both algorithms scale the series to a common metric and then use a factor analytic approach to extract the common variance of the series.

[9] The analysis begins in 1985 because monthly economic opinion data are not consistently available prior to this year.

Modeling Strategy

We estimate the determinants of changing economic evaluations with error correction models for two reasons. First, tests of the economic evaluations data indicate that the series are non-stationary and thus it is necessary to use a technique like ECMs, which rely on transformations of the data to address the stationarity issue.[10] Second, ECMs provide the advantage of modeling short- and long-term causal effects. In ECMs, the dependent variable is transformed into its differenced form, and the independent variables are transformed into both the lagged level (X_{t-1}) and differenced form (ΔX). With these transformations, the short-run effects of the independent variables on economic evaluations can be examined through differenced independent variables and long-run effects can be studied through the lagged-level form.[11] The principal assumption of the ECM is that there is a steady-state equilibrium among the dependent and independent variables. In the context of our analysis, this implies that the public's evaluation of the economy moves together with the unemployment and inflation rate. Likewise, when unemployment and inflation are stable, the steady-state implies that evaluations of economic conditions would stay put. However, we do not expect the public to constantly monitor these economic indicators and automatically update its economic evaluations. Thus, when perturbations to key variables like unemployment and inflation occur, the system is likely to be temporarily out of equilibrium. It will, however, return to the steady-state equilibrium at the rate characterized by the speed of adjustment or error correction rate. In essence, the error correction rate estimates how quickly the public notices changes to the key economic variables and adjusts its rating of the economy to return to the equilibrium.

A standard formulation of the error correction model is

$$\Delta Y_t = \beta_j \Delta X_{jt} + (\alpha_1 - 1)(Y_{t-1} + \gamma_j X_{jt-1}) \qquad (1)$$

where j is the number of independent variables.[12] In this formulation, the error correction rate is represented by the term, $(\alpha_1 - 1)$. This error correction rate ranges between -1 and 0, where values closer to 0 indicate *slower* updating. One key feature of the model is that all of the variables in their levels have an influence on

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[10] Dickey–Fuller tests indicate that we cannot reject the null hypothesis of a unit root in the partisan series and provide further evidence that the ECM is the appropriate technique for analyzing these data. Thus, our approach is similar to De Boef and Kellstedt (2004) who find that the consumer sentiment time series is not stationary, leading them to employ ECM for their analysis. Other techniques for dealing with non-stationary data, like ARIMA models, make it difficult to isolate long-term, short-term, and equilibrium relationships. Vector Error Correction Models provide another strategy for dealing with problems of stationarity, but their utility is primarily in modeling the equilibrium relationship, not the short-term and long-term effects.

[11] Note that in the tables that follow, the lagged independent variables are used to calculate the long-run multiplier (LRM). Both the lagged dependent variable and the LRM tell us about the long-run effect, but since the LRM provides more information, we only report the LRM.

[12] As noted by De Boef and Keele (2008) and many standard econometric texts, there are a variety of transformations that can be made to an Autoregressive Distributed Lag (ADL) to produce an error correction model. De Boef and Keele use the form consistent with one-step estimation. The form above makes it easier to see how the effects of independent variables are filtered through the error correction factor and this is even more important for the time-varying ECM described below.

the dependent variable through the error correction rate, making it well-suited for the study of partisan bias and other issues in which habits or delayed responses might occur. For example, if partisan opponents of presidents are slow to reward them in light of good economic news, this effect is captured in the error correction model by a slower error correction rate (i.e., $\alpha_1 - 1$ is near zero).

In ECMs, the coefficient, γ, associated with X_{t-1} is often called the "long-run effect" because it tests the hypothesis that the predictor and dependent variable move together in a steady-state equilibrium. However, the long-run effect does not indicate the *total* effect of a predictor on the dependent variable, which can occur across future time periods. The total effect is captured by the "long-run multiplier" (LRM).[13] We focus on the LRM because when considering partisan bias, we want to be sure to account for the total influence of predictors.

An example can help demonstrate the kind of analysis facilitated by an ECM. In an analysis of the effect of unemployment on economic evaluations, we might find that the short-run effect of unemployment on consumer sentiment was -0.50, the long-term effect ($Unem_{t-1}$) was -0.80, and the speed of adjustment parameter was 0.20. This would lead to a long-run multiplier of -4. If unemployment increased by 1%, the immediate effect would be to reduce the percent positively evaluating the economy by 0.5 point (1×-0.50). But the immediate effects are only part of the impact. The remaining 3.5 point change would occur over time with the rate of change determined by the speed of adjustment parameter. In the next time period (t + 1), positive economic ratings would fall by -0.7 (or 17% of the total change will occur); at t + 2, economic ratings will fall by -0.56 (or 14% of the total change); and so on. Thus, the ECM allows us to calculate both the immediate change as well as the long-run effect, and the LRM that we estimate is a useful way to summarize these effects.

When the immediate effects are not significant (as is true in the some of the analysis that follows), we are primarily interested in two estimates, the error correction rate and the LRM. As noted above, the error correction rate will show us whether partisans incorporate relevant information at different rates, depending on which party holds the presidency. The LRM, by contrast, tells us whether the total effect of new economic information differs across partisans. The first part of our analysis examines whether these parameters differ across partisan groups and, more importantly for our interests, whether the influence of partisanship changes across presidential administrations.

After documenting the time-varying influence of partisanship, we then investigate how partisanship influences aggregate opinion over time. In order to better understand the over time effect of partisan bias on aggregate opinion, it is possible to extend the logic of the ECM to include time-varying effects (see, for example,

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[13] As De Boef and Keele (2008) note, because the LRM is calculated from the formula for the ratio of the lagged independent variables and the speed of adjustment parameter, (using the notation from Eq. 1, $(\gamma/(\alpha - 1))$), the standard error is calculated using the formula for the variance of a ratio. Because the LRM is the byproduct of a ratio, it is possible for the LRM to be significant even when the coefficient for the X_{t-1}'s are not. This can occur when $(\alpha - 1)$ is small or the covariance between the coefficients is high. See De Boef and Keele (2008, p. 192).

Barassi et al. 2005).[14] By using a time-varying parameter approach, the speed of adjustment can vary, speeding up and slowing down as the partisan bias increases or decreases. Thus, we add the subscript t to α indicating perturbations to the system will have a different effect over time, depending on whether partisan bias is on the rise or decline. The time-varying ECM model is thus,

$$\Delta Y_t = \beta_j \Delta X_{jt} + (\alpha_t - 1)(Y_{t-1} + \gamma_j X_{jt-1}). \qquad (2)$$

In this model, $(\alpha_t - 1)$ is the error correction rate and it varies with time.[15] This time-varying approach is effective at capturing the changes in the rate at which partisans update their economic evaluations over time. For example, if as a result of partisan bias, Democrats during the Bush presidency are slow to reward him for good economic news, we will see the error correction rate slow down. As in the static case, high error correction rates mean that the public is responding quickly to new information in updating their evaluation of the economy and slow rates mean that the effects of changes in the economic environment have a delayed effect on economic evaluations. Thus, the error correction parameter provides a direct test of the "stickiness" hypothesis. During periods of high partisan bias, we not only expect some partisans to update more slowly, but this will, in turn, lead aggregate public opinion to respond more slowly to changes in the economic environment than it would otherwise.

Does the Influence of Partisanship Vary Over Time?

In order to examine the aggregate effects of partisanship over time, the analysis proceeds in several steps. First, as a preliminary analysis, we examine time plots of the data and describe some of the general trends in the partisan economic evaluations in order to identify periods of agreement and disagreement among partisans. This analysis provides some insight into the question of whether partisan bias leads to parallel trends, divergent trends, or convergence. However, it does not explain the ways that partisans might use information differently over time. To that end, we next analyze each administration separately in order to assess the ways in which partisan evaluations can vary with administrations and the extent to which partisanship has a more pronounced impact in more recent administrations. Since the effects of the influence of partisanship may not be bound by administration, we then examine time-varying effects across the whole time period. Finally, with an understanding of the nature of partisan bias over time, we test our predictions regarding the overall effect that partisanship has on aggregate opinion.

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[14] For a more general application of time-varying analysis of aggregate opinion, see McAvoy (2006).

[15] Although our theoretical priors focus on the rate of responsiveness, it is possible to allow the γs to vary with time as well. This suggests that partisanship also changes the weight that the public attaches to unemployment, not just the speed with which it returns to equilibrium. For the analysis of economic evaluations, the γs were not time-varying and as a result we leave the discussion of a full time-varying model for future research and a different context. In their estimates of time-varying ECMs, Barassi et al. (2005) also just allow $\alpha_t - 1$ to vary with time.

We begin the analysis with a visual summary of the data and comparison of partisan groups. Figure 1 plots the percent rating the economy positively for Democrats, Independents, and Republicans. Recall that we expect a general pattern of increasing partisan differences as well as short-term variation in the influence of partisanship. Consistent with expectations, there are periods of convergence, divergence, and parallelism among Democrats and Republicans in their assessment of the economy. During the second term of the Reagan presidency, Republicans consistently rate the economy higher than Democrats. The average difference between the two parties during this time periods is 24% (see Table 1). The parties converge early in George H.W. Bush's administration as perceptions of the economy turn worse for both Democrats and Republicans. In 1991, both parties become more optimistic during the international crises and war precipitated by the Iraqi army's invasion of Kuwait. In the wake of this crisis and growing concern about the economy, Democrats are decidedly more pessimistic about the state of the economy than Republicans. Over the four years of the Bush presidency, the average positive rating of the economy is 29% for Democrats and 47% for Republicans, a difference of 18% overall.

For the Clinton years, both in terms of the level of economic evaluations and over time change, we see remarkable similarity among partisans. Shortly after Clinton takes office, evaluations of the economy drop, reaching a low point in the summer of 1993. All subgroups then begin to show a higher rating of economic conditions, with a leveling in 1994 and 1995, followed by higher ratings again until 1998. For the final two years, the percent rating of the economy positively levels around 90%. Over the Clinton presidency, Democrats and Republicans rated the economy fairly consistently, with a average difference of just nine percent.
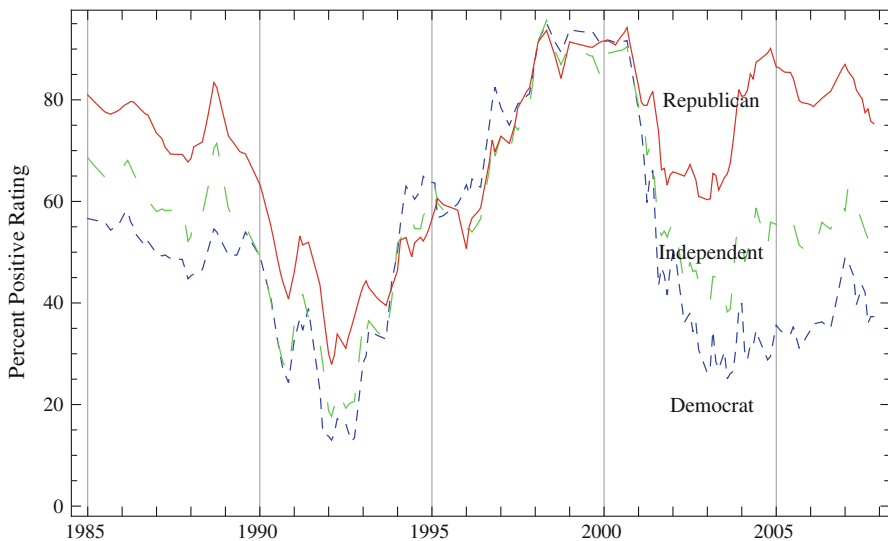

Fig. 1 Rating the economy by party (combined data from CBS, Gallup, and ABC, 1985 to 2007)

Table 1 Average monthly economic evaluations by partisan group

	Democrats	Independents	Republicans
Reagan	47.5	57.2	71.6
GHW Bush	29.0	33.2	47.0
Clinton	69.8	66.5	68.6
GW Bush	36.0	51.0	75.0

The tenure of George W. Bush marks the greatest disparity between the parties in terms of their evaluation of the economy. In contrast to the Clinton years, Fig. 1 indicates strong partisan differences. When Bush took office, all partisan groups were relatively optimistic. Within months, however, the percent rating the economy favorably began to decrease in each group. By the end of 2001, Republicans leveled, but the percent offering a positive economic evaluation among Independents and Democrats continued to drop until the summer of 2003. Furthermore, during 2004 and 2005, Democratic economic ratings hovered around 25%, while Republican ratings had rebounded to roughly 75% positive, above the level when Bush took office.

Overall, the plot offers some support for each of the prominent theories of partisanship. Consistent with expectations, the effects of partisanship do not appear to be constant. Rather, we see evidence of unbiased updating (e.g., convergence during the mid-1990s), moderate partisan influence (e.g., parallelism during the late 1980s), and partisan bias (e.g., divergence after 2001). It appears that differences between Democrats and Republicans rise and fall and do seem to have become more intense during the George W. Bush presidency, a period of high political polarization (Jacobson 2006, 2009; McAvoy and Enns 2010).

Prior to assessing the updating behavior of partisans across administrations, it is useful to link the theory of partisan influence to an administration by administration analysis. It is important to consider the role of partisanship in two ways—within and across administrations. The within-administration effects are derived from theories of biased partisan updating. Building on motivated reasoning research (e.g., Kunda 1990; Kruglanski and Webster 1996; Taber and Lodge 2006; Taber et al. 2009), Lebo and Cassino (2007) show that the extent to which the public holds the president accountable varies according to partisan affiliations.[16] Those who do not identify with the party of the president are more likely to adjust their approval of the president in response to changing economic conditions. In-party partisans, by contrast, behave more like cognitive misers. Seemingly happy with the party in charge, they are less likely to respond to positive or negative news.[17] Thus, across all four of our administrations, we should expect to see some differences in the

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[16] The relationship between economic evaluations and presidential approval is well established (see, e.g., Sigelman and Knight 1985). Even during periods of divided government, the public holds the president responsible for the economy (Norpoth 2001). See Wlezien et al. (1997) for an application to vote choice.

[17] Although we differ from Lebo and Cassino in that we expect the influence of partisanship to vary over time, when partisanship does influence opinion updating, we expect our results to corroborate their findings.

updating behavior of Democrats and Republicans. The only exception to this general pattern might occur for the Clinton administration. Particularly during his second term, Bill Clinton presided over unambiguously prosperous economic times, leaving little room for dissenting opinions about the conditions of the economy (McAvoy and Enns 2010).

Looking *across* administrations, the role of institutions, sorting, and selective use of the media should be evident. As discussed in a previous section, the impact of partisanship on opinion updating from these changes in the political environment is likely to be smaller during the earliest time periods in our study, the administrations of Ronald Reagan and George H. W. Bush. As documented by Levendusky (2009) and Gelman et al. (2008), the parties were more ideologically mixed during the Reagan and Bush administrations but became "sorted" as conservatives (particularly Southerners) moved into the Republican party and moderate, professional Republicans aligned with the Democratic party. In addition, because of the institutional changes in media and Congressional polarization, we expect partisanship to have a stronger influence at the end of our series than at the beginning.

In order to assess these patterns in partisans' evaluations of the economy, we analyze these time series using ECMs. Table 2 reports the results of the ECMs for the public's rating of the economy during the presidencies of Ronald Reagan and George H.W. Bush. The results for Presidents Clinton and George W. Bush follow in Table 3. As noted above, ECMs use variables in their differenced form, ΔY or ΔX, and in their lagged level, Y_{t-1} and X_{t-1}. We follow previous research (Erikson et al. 2002) and estimate the regression equations for different partisan groups jointly, using Zellner's (1962) system of seemingly unrelated regression (SUR) equations. Given that the series in Fig. 1 follow similar trends, we expect residuals to be correlated across equations. The SUR model estimates this correlation and incorporates it into the regression, producing more efficient estimates. Since the results of the time series plots support our theoretical priors that partisan bias varies over time, we begin the analysis by estimating models of each administration covered by our data.[18]

Looking across administrations, some clear patterns emerge. In general, long-term effects matter more than short-term ones. The short-run effects of inflation are not significant across all party groups and administrations with the exception of Democrats' and Independents' evaluations under George H. W. Bush and Republicans' evaluations under George W. Bush. The short-term effects of unemployment vary over time and were not significant during the second Reagan administration and George H.W. Bush's administration. However, the short-term effects of unemployment do have some role to play in the public's evaluations of economic conditions during the Clinton and George W. Bush administrations. Given the variation over time and the differing impact of inflation and unemployment, it is hard to argue that short-run effects are key to understanding the public's evaluation of the economy. This is as we expect. For the most part, public opinion does not react instantaneously to changes in economic information. It takes time for

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[18] Our analysis does not disaggregate beyond partisan groups, because party is the concept of theoretical interest. This decision is also consistent with past research, which shows that partisan differences in overtime evaluations of the president typically trump differences across educational groups (McAvoy and Enns 2010, see also, Enns and Kellstedt 2008).

Table 2 The monthly determinants of economic ratings for Democrats, Independents, and Republicans for Reagan and GHW Bush

Coefficient	Ronald Reagan			George HW. Bush		
	Δ Dem	Δ Ind	Δ Rep	Δ Dem	Δ Ind	Δ Rep
Δ Unemployment	1.040	1.238	1.263	−0.301	−1.948	−2.507
	(0.844)	(1.092)	(1.206)	(2.442)	(1.657)	(2.340)
Δ Inflation	0.0617	0.0934	0.0841	−0.286**	−0.211**	−0.181
	(0.0549)	(0.0707)	(0.0781)	(0.137)	(0.0935)	(0.132)
Unemployment$_{t-1}$	−0.107	−0.340	−0.350	−1.571**	−0.572	−0.700
	(0.197)	(0.242)	(0.267)	(0.759)	(0.462)	(0.656)
Inflation$_{t-1}$	0.140**	0.147**	0.0625	−0.278	−0.153	−0.0640
	(0.0570)	(0.0734)	(0.0812)	(0.180)	(0.123)	(0.173)
Dem$_{t-1}$	−0.0277			−0.139***		
	(0.0383)			(0.0502)		
Ind$_{t-1}$		−0.0600*			−0.103***	
		(0.0307)			(0.0309)	
Rep$_{t-1}$			−0.0673**			−0.114***
			(0.0320)			(0.0405)
Long-run multiplier						
Unemployment	−3.855	−5.666	−5.208	−11.40***	−6.270***	−6.483*
	(10.283)	(5.101)	(4.577)	(2.801)	(3.017)	(3.960)
Inflation	5.063	2.443	0.929	−2.012	−1.563	−0.681
	(7.502)	(1.793)	(1.301)	(1.245)	(1.105)	(1.424)
Constant	1.527	5.174**	6.974**	14.43**	6.994*	9.376
	(1.912)	(2.359)	(3.017)	(6.485)	(4.087)	(6.196)
Observations	47	47	47	48	48	48
R^2	0.189	0.195	0.107	0.116	0.293	0.153

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

economic news to make its way from government reports into news reports so that ordinary citizens can absorb and respond to this information. Given the limited short-run effects, the impact of partisanship on economic evaluations is best understood through an examination of the long-run multiplier and the speed of adjustment parameters reported in the tables. For the long-run changes in the public's rating of the economy, unemployment seems to matter more than inflation since the effects of unemployment are more consistently significant and in the expected direction (i.e., a negative coefficient), so the focus of the discussion is on it. Figure 2 summarizes the LRM for unemployment, making it easy to see the varying effect of party both within and across administrations.[19]

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[19] The upper bound for the vertical axis in the figure is set at 5 to emphasize the systematic patterns across administrations as opposed to highlighting Republican's atypical pattern (i.e., increasing positive economic ratings when unemployment rises and decreasing positive ratings when it falls) of updating under Bush.

Table 3 The monthly determinants of economic ratings for Democrats, Independents, and Republicans for Clinton and GW Bush

Coefficient	Bill Clinton			George W. Bush		
	Δ Dem	Δ Ind	Δ Rep	Δ Dem	Δ Ind	Δ Rep
Δ Unemployment	−0.286	−2.007*	−3.700**	−6.547**	−1.931	−2.593
	(1.709)	(1.157)	(1.736)	(3.313)	(1.579)	(2.382)
Δ Inflation	0.102	0.0884	0.156	0.00176	−0.0440	−0.114*
	(0.0970)	(0.0663)	(0.0999)	(0.0873)	(0.0407)	(0.0627)
Unemployment$_{t-1}$	−0.336	−0.689	−1.861***	−3.338**	0.0199	0.953
	(0.665)	(0.457)	(0.668)	(1.490)	(0.721)	(0.627)
Inflation$_{t-1}$	−0.0619	−0.122	0.0687	−0.0868	−0.0402	−0.0209
	(0.126)	(0.0859)	(0.129)	(0.0965)	(0.0450)	(0.0691)
Dem$_{t-1}$	−0.0546*			−0.227***		
	(0.0313)			(0.0567)		
Ind$_{t-1}$		−0.0571**			−0.100***	
		(0.0226)			(0.0383)	
Rep$_{t-1}$			−0.103***			−0.0721**
			(0.0333)			(0.0333)
Long-run multiplier						
Unemployment	−6.145	−12.06***	−18.05***	−8.353***	−7.408	8.249
	(8.904)	(3.809)	(2.277)	(3.996)	(7.250)	(12.3591)
Inflation	−1.132	−2.136	0.667	−1.188**	−0.240	0.0229
	(2.357)	(1.674)	(1.279)	(0.447)	(0.488)	(0.971)
Constant	6.301	8.155**	16.94***	25.80**	4.228	0.0451
	(5.593)	(3.850)	(5.699)	(10.14)	(5.742)	(4.912)
Observations	96	96	96	77	77	77
R^2	0.130	0.144	0.080	0.309	0.349	0.204

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

An examination of the LRM's within administration highlights the sharp party differences. During the Reagan administration, Democrats, Republicans and Independents reacted mildly to changes in unemployment. Looking within the George H.W. Bush administration, party differences are more clearly delineated. The long-run effect of unemployment for the first Bush administration also shows the weight of unemployment is nearly twice as much for Democrats as Republicans. These sharp differences are reversed during the Clinton administration, with Republicans responding much more dramatically to changes in unemployment than Democrats (Republicans' LRM is more than three times the estimate for Democrats). During the George W. Bush adminstration, Democrats and Independents responded negatively to changes in unemployment, while Republicans responded positively.

The pattern that emerges from these estimates of the impact of unemployment on the public's evaluation of the economy show clear partisan differences. Although there is just one Democratic administration during the period under study, the
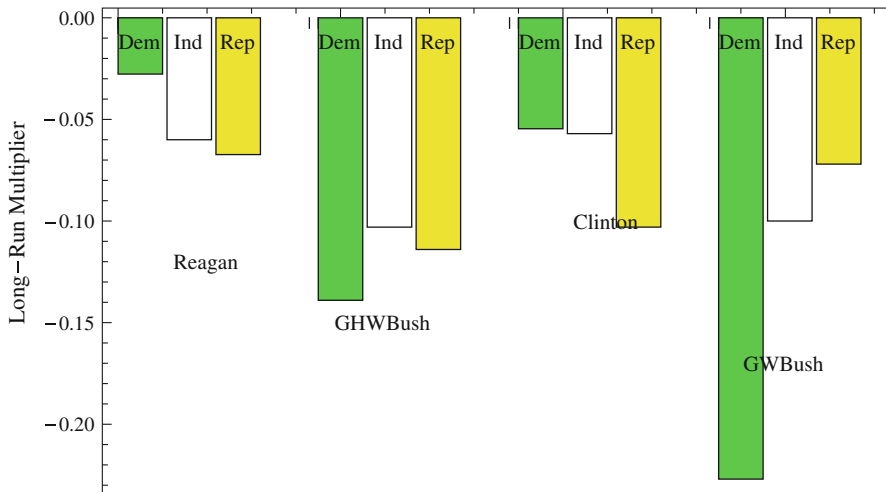
Fig. 2 Long-run multiplier for unemployment by administration, 1985 to 2007

results show that supporters of the president consistently have a weaker response to changes in the economy than those from the party that opposes the president.[20]

Some additional insight into the reactions of partisans to changes in economic conditions across time can be gained through a comparison of the error correction rates. In this analysis of partisans' rating of the economy, the error correction rate is the speed with which partisans respond to changes in economic conditions as measured by the rate the equilibrium between economic conditions and partisans' evaluation of the economy is restored.[21] Figure 3 summarizes the error correction rates from the Tables 2 and 3. Consistent with the analysis of the LRM for unemployment, there are notable differences within and across administrations. For three of the four administrations analyzed, those identifying with the president's party have an error correction rate closer to zero than those identifying with the opposition party. This means that partisans loyal to the president typically respond more slowly to changes in the environment than both Independents and those identifying with the out-party. This is particularly pronounced during the George W. Bush administration, in which Democrats' error correction rate was much faster than Republicans. Comparing across the Republican administrations, there is stronger evidence of partisan updating over time with small party differences during the Reagan administration and large ones during the GW Bush administration.

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[20] As noted earlier, these results support recent research by Lebo and Cassino (2007) on presidential approval. In the next section, however, our analysis of how these effects influence aggregate opinion shows how the influence of out-party updating varies over time and that Independents tend to move in concert with the out party—not the in party.

[21] As noted above, the error correction rate ranges from −1 to 0 and estimates near 0 indicate a slow return to equilibrium and ones near −1 indicate an immediate return to equilibrium.
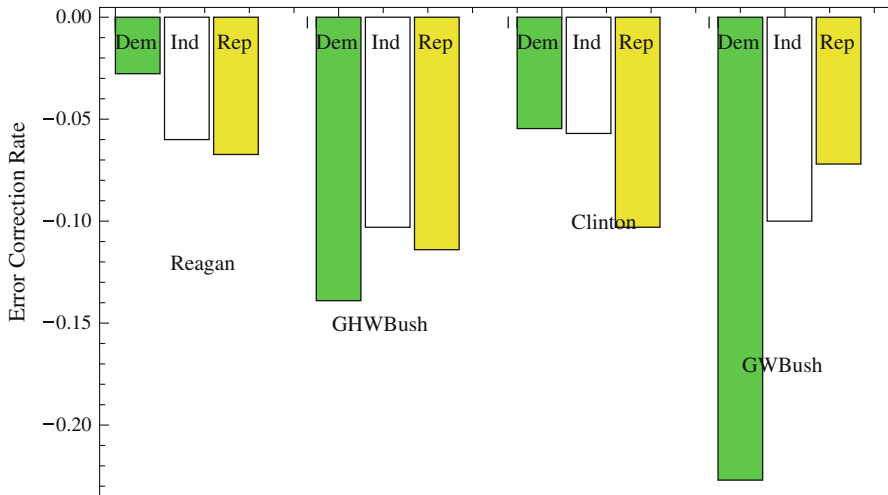
Fig. 3 Error correction rates by administration, 1985 to 2007

A Time-Varying Analysis

Time series analysis of partisan bias tend to look for evidence that a bias either exists or does not. For example, Green and Gerber argue that the parallel tracks of presidential approval suggest that partisan bias is simply a shift in the mean value of approval not a change in slope (Green et al. 2002). The analysis of the partisan groups across administrations squares nicely with the argument that party influence varies over time. In particular, the comparison of the error correction rates across administrations described in the previous section suggests that both a slow reaction by the in-party and a faster reaction by the out-party are likely to influence the overall response of the public to changes in economic conditions.[22] However, as discussed above, it is possible to add time-varying components to the ECM model to gain a more nuanced understanding of how partisanship's influence varies both *across* and *within* administrations. The overall objective in the time-varying analysis is to assess the changes in the error correction rate over time and link these changes to partisan bias. As a starting point, we estimate the time-varying error correction model (as described in Equation 2) for each of the partisan groups and compare the error correction rates over time.[23] One key piece of evidence for the

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[22] An alternative approach to studying the heterogeneity in partisan is to use models of fractional integration (Box-Steffensmeier and Smith 1996; Lebo et al. 2000). However, tests of these the partisan subgroup data and the aggregate series suggest that they do not exhibit the long-memoried characteristics of fractionally integrated series. This maybe the result of merging several time series together, which is likely to diminish any long-memoried features of the series. As noted earlier, the partisan economic evaluation series do have a unit root and, thus, are consistent with models of "permanent" memory employed here.

[23] The time-varying parameter model is estimated using the Kalman filter and maximum likelihood estimation of the hyper-parameters, as described in Beck (1983, 1990). Estimation was done using the R package, "dlm." (Petris and Petrone 2009). The hyper-parameters to estimate are the error variances of

Table 4 The hyper-parameters for the time-varying error correction model, 1985 to 2007

Estimated variance of the error correction rate	Democrats	Independents	Republicans
$\sigma^2_{\alpha_t-1}$	0.00127**	0.00034**	0.00017*
	(0.00064)	(0.00007)	(0.000097)
Observations	274	274	274

Analysis includes dummy variables (not shown) for the Gulf War, 9/11, and the Iraq Wars. Standard errors in parentheses

** $p < 0.05$; * $p < 0.1$

time-varying analysis is for the variance of the error correction parameter ($\alpha_t - 1$) to be significant, indicating change in this parameter over time. The results of the time-varying error correction rates are reported in Table 4. As the table shows, for all partisan groups, there is significant time variation since the null of no error variance for $\alpha_t - 1$ can be rejected.[24]

The results of this analysis are summarized in Fig. 4 which shows the error correction rate, ($\alpha_t - 1$), as it changes over time. As the figure shows, the parties do fluctuate in their error correction rates. The patterns in the error correction rate during the Reagan administration shows a high degree of continuity with all partisan groups trending downward, indicating faster response to changes in economic conditions over the course of the presidency. All groups show a slight decrease in their response to economic conditions at the time of the Gulf war, but groups seem to respond more quickly to economic news once that crisis was over. Once President Clinton takes office, Democrats and Independents update in a way that is generally consistent, but there is some tendency for Republicans to continue to react more strongly, exhibiting quicker error correction rates. Later in the Clinton administration, as all groups tend to view the economy positively (see Fig. 1), their updating behavior again is similar with error correction rates converging. In other words, there is little room for partisan bias when the economy is clearly strong.

A quite different pattern emerges during the administration of George W. Bush. As soon as George Bush takes office in 2001, both Democrats and Independents exhibit a sharp change in their error correction rates, signalling a much more rapid

Footnote 23 continued

the time-varying coefficients, and in this setup the key parameter is the error variance of $\alpha_t - 1$, which is $\sigma^2_{\alpha_t-1}$. We can conduct a hypothesis test to see if the error variance is significantly different from zero. If the error variance is not significantly different from zero, the parameter reverts to a constant effect coefficient as in OLS. In this case, rejecting the null hypothesis means that the error correction varies over time, and failing to reject the hypothesis means it is constant. The time-varying model was estimated allowing short and long-term effects to vary overtime, but only the error correction rate and the constant were significant over time. The time-varying error correction rate is consistent with the model described in Eq. 2.

[24] When the null hypothesis cannot be rejected, this means that there is no error variance $\alpha_t - 1$ and that the error correction rate is fixed and can be estimated with a standard OLS approach. But, in this case, since the null hypothesis can be rejected, there is time-variation in the error correction rates.
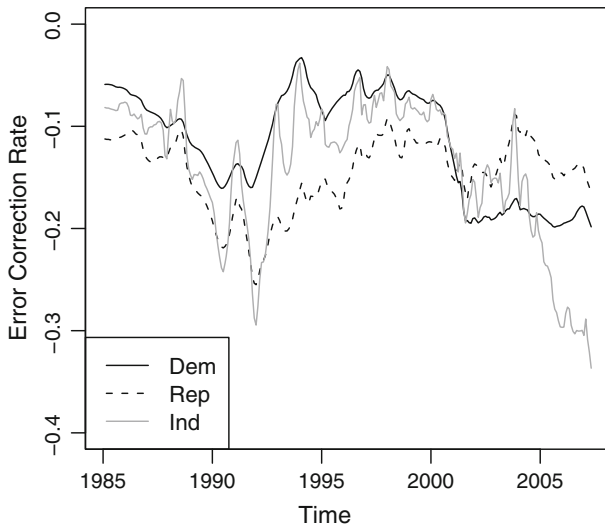
Fig. 4 Time-varying error correction rates by party, 1985 to 2007

response to news about the economy. Republicans, on the other hand, hold steady, showing little change in their updating behavior throughout George Bush's administration, even during the recession that arose after 9/11. There is a slight change in both Independents and Republicans updating behavior during 2003, with the invasion of Iraq. After this point, Independents again are more responsive to changes in economic conditions, and Republicans show only small changes. Democrats, on the other hand, do not change their updating behavior once Bush takes office.

Importantly, we do see the expected reversal in partisans' response to the economy between the Bush and Clinton administrations. Overall, Republicans react more quickly to changing news about the economy during the Clinton administration, and Democrats react much more quickly during the Bush administration. At least since Clinton's presidency, the results suggest that partisanship can lead those of the out-party to respond to economic news more quickly than those in support of the president's party.

The time-varying analysis also shows that the administration-by-administration analysis conducted above can mask important variation within administrations. This is most notable for George W. Bush's presidency. We see in Fig. 4 that at the start of the administration, Democrats were the quickest to incorporate economic information into their economic evaluations and their rate of error correction was roughly consistent. In the administration-by-administration analysis (shown in Table 3; Fig. 4), this results in Democrats having the fastest *average* error correction rate. However, the time-varying error correction rate shows that around 2005, Independents started updating their economic evaluations much more quickly than Democrats. This is an important result of the time-varying analysis that we explore in more detail below.

How Does the Time-Varying Effect of Partisanship Influence Aggregate Opinion?

Having established that the influence of partisanship varies both across administrations and within administrations, our final analysis seeks to understand how these partisan differences influence our understanding of aggregate public opinion. In other words, rather than simply documenting that partisan bias exists, our focus here is to try to understand more precisely its impact on aggregate public opinion. Given the above evidence that the influence of partisanship varies over time, we suspect partisanship's influence on *aggregate* public opinion is also likely to vary over time. It is possible that partisan bias may lead to an error correction rate that is slower overall as partisan loyalists react slowly to news about a president from their party. Or, it may be that those opposed to the incumbent president react more decisively, sharpening the differences between partisan groups. Or, both may occur simultaneously.

Thus, our final model estimates the time-varying ECM for the public as a whole. The final point estimates for this model are reported in the first column of Table 5. The parameters in Table 5 represent the constant effect of each variable over the whole time period, except for the error correction rate. For the error correction rate, the result from the last time point, May 2007, is reported in Table 5, but all the other time points are summarized in Fig. 5. The model shows

Table 5 The time-varying model of aggregate economic evaluations, 1985 to 2007

Variable	Param. Est.	σ^2
Constant	15.439***	–
	(4.315)	
Error correction rate		
Economic evaluation$_{t-1}$[†]	−0.167***	0.0005
	(0.061)	(0.0005)
Δ Unemployment	−1.745	–
	(1.288)	
Unemployment$_{t-1}$	−1.612***	–
	(0.551)	
Δ Inflation	0.0789	–
	(0.056)	
Inflation$_{t-1}$	0.0017	–
	(0.066)	
Observations	274	

Analysis includes dummy variables (not shown) for the Gulf War, 9/11, and the Iraq Wars. Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$
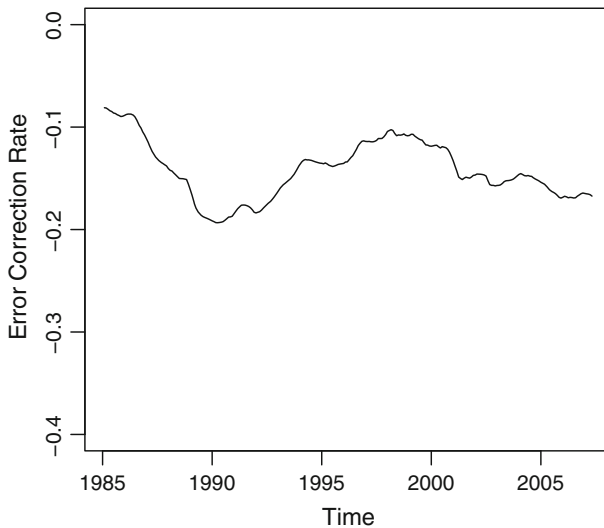
[†] Results are from the end point of the analysis

Fig. 5 Time-varying error correction rate, 1985 to 2007

that when accounting for time-variation in the error correction rate, unemployment has a significant long-term effect on the public's evaluation of the economy. Column 2 reports the estimate of the error variance in the time-varying model $\sigma^2_{\alpha_{t-1}}$. The variance parameter for the error correction rate using the aggregate evaluation data is not significant. This is a surprising finding, given the significant time variation that each of the parties exhibited when their error correction rates were analyzed individually.[25]

The lack of significant time variation in Fig. 5 offers surprising—yet understandable—insight into how the time-varying nature of partisan bias influences aggregate opinion updating. Overall, this analysis shows that the effect of partisanship is to produce "stickiness," with an error correction rate that lacks the more sustained movement of the partisan series and is essentially an average of the partisan error correction rates. The presidency of George W. Bush demonstrates, in particular, how partisan updating (Fig. 4) leads to stickiness at the aggregate level. After 2004, the most partisan period of our analysis, we see that Independents were updating their economic evaluations in response to objective economic information faster and faster. Six months before the start of the "Great Recession" Independents were responding more quickly than any period during our 22 year analysis. However, Republicans and Democrats were not showing increased responsiveness to economic information. Thus, the partisan influence of Democrats and Republicans kept aggregate consumer confidence from appearing more responsive to changing economic information.

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[25] It is important to note, however, that the error correction rate itself has a significant impact on economic evaluations, but that impact does not change significantly over time.

Conclusions and Implications

In individual-level studies of public opinion, the effects of partisanship on political attitudes are widely accepted. Aggregate studies of public opinion, by contrast, have generally avoided incorporating partisanship into their analyses, arguing that partisans have different levels of support but react similarly to changes in the political environment (Page and Shapiro 1992; Erikson et al. 2002).[26] Our analytical approach, which allowed for differences across political contexts, helps clarify these conflicting perspectives. At times, partisan bias and its resulting affect on aggregate opinion appear minimal. By contrast, shifting political contexts show significant partisan differences among subgroups (McAvoy and Enns 2010). Perhaps most importantly, these differences systematically influence aggregate opinion. These differences are apparent through a simple examination of the data themselves which shows periods of general agreement among partisans and ones in which their evaluations are sharply different. Examining these differences more systematically with ECMs and time-varying ECMs makes three important contributions. We are able to show how partisanship influences economic evaluations across administrations, when the effects of partisanship are most pronounced, and how partisan bias influences aggregate economic evaluations. Overall, the analysis shows that partisan differences rose in recent years beginning in the middle of the Clinton administration and escalating during the tenure of George W. Bush.[27] The total effects of partisanship appear to reduce the overall response of the public to changes in economic conditions. Even for economic evaluations, partisan attachments can overwhelm motivations for accuracy.

This result may hold significant economic implications. When partisan bias is high, as during the George W. Bush presidency, aggregate economic evaluations appear less responsive to the objective economy. As a result, aggregate economic evaluations appeared more optimistic than the unemployment and inflation rates warranted. Furthermore, because consumer sentiment predicts future aggregate consumer expenditures (Eppright et al. 1998; Huth et al. 1994), partisanship's influence on economic evaluations may have indirectly influenced aggregate consumer expenditure (Gerber and Huber 2010).[28] Finally, given the historic importance of the 2008 financial crisis, our findings and this literature on expenditures suggest that future research should examine the extent to which partisan bias inflated economic evaluations and consumer behavior prior to the crisis.

Although we have focused on economic evaluations, partisanship's time-varying effects also carry important implications for representation. When partisanship exerts only a minor influence and Republicans, Independents, and Democrats update their opinions in parallel, government representation of public opinion benefits all partisan groups. However, when aggregate opinion change masks differences

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[26] Gerber and Green (1999) provide an important defense of this practice.

[27] The time series plotted in Fig. 1 suggest parallelism during the Clinton administration, but the ECM provides a more systematic analysis and shows parallel updating among the parties at the beginning of the Clinton administration and divergent updating after 1995.

[28] Such a finding would be consistent with the work of De Boef and Kellstedt (2004) in which they find that political judgments and events play a role in consumer sentiment.

between partisan groups, we must reconsider the implications of policy responsiveness to public opinion. For example, if Republicans and Democrats' update their opinions differently, government response to aggregate opinion will only reflect one group's opinions. It appears that during recent times the opportunity for differential representation of partisan interests has increased.

The findings in this article open several avenues for future research. First, we intentionally selected a least likely issue for finding partisan effects. Given the evidence of partisan differences (at least during the Bush administration), a next step is to look at how partisanship influences aggregate opinion for other, more political issues. The evidence here suggests that during some periods strong effects will emerge. Second, the current analysis does not isolate the causes of differences over time, only that our evidence of partisan bias is consistent with the general pattern of polarization. But, it would be useful to determine more precisely the effects of media elites, media sources, and opinion leaders in shaping partisan bias. We suspect that each of these explanations plays some role in the effect of partisanship on subgroup and aggregate opinion. If so, the results suggest that scholars, politicians, and the public must be increasingly cautious about how they interpret changes in public opinion. Opinion shifts, or lack thereof, may reflect the ideological leanings of partisans—that do not always cancel in the aggregate.

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