Online Appendix for "The Consequences of Partisanship in Economic Perceptions"

Peter K. Enns
Cornell University
pe52@cornell.edu

Paul M. Kellstedt
Texas A&M University
kellstedt@politics.tamu.edu

Gregory E. McAvoy
University of North Carolina at Greensboro
gemcavoy@uncg.edu

Abstract

In this Online Appendix we report additional results and robustness checks that were too lengthy to fit in the manuscript. In all cases, the subsequent materials reinforce the findings and conclusions reported in the text. This appendix proceeds in five sections. First, we report additional results that supplement our discussion of the partisan lens and preference-based models of partisanship. We then show that the asymmetric patterns of partisanship reported in the text hold when we control for the relative proportion of partisans in the population. The third section extends the analysis of partisan updating to show that Democrats and Republicans respond to changes in unemployment differently depending on which party occupies the White House. Section 4 uses a Vector Autoregression (VAR) model to evaluate the relationships reported in Table 2 in the text. Finally, in section 5, we report the full results for Tables 1 and 2, which did not include non-significant control variables.

A-1: Partisan Lens and Preference-Based Models of Partisanship

Although more than one theory of partisanship might predict that consumer sentiment is endogenous to party identification, the text emphasizes the role of selective partisan *perceptions* as opposed distinct partisan *preferences*. In this appendix, we detail and elaborate on evidence that supports this interpretation. Figure 1 in the text shows that Democrats' and Republicans' concerns for various economic conditions are typically indistinguishable. However, differences do exist for their concern for unemployment. Thus, if Republicans and Democrats rate the economy differently because they *prefer* different economic conditions, these differences should be most evident for the unemployment rate. The similar average unemployment rate during the Bill Clinton and George W. Bush presidencies (5.21 and 5.20) allows us to evaluate this possibility. If Democrats are more sensitive to the unemployment rate, perhaps preferring a lower unemployment rate on average than Republicans, we would expect Democrats to weigh unemployment more than Republicans in their economic evaluations. However, since the unemployment rate was similar across presidential administrations, we would *not* expect Democrats and Republicans to change how they weigh unemployment. By contrast, if Democrats and Republicans filter economic information through a partisan lens, even though the average unemployment rate was nearly identical, we would expect the influence of unemployment to vary depending on which party occupied the White House.

Table A-1 reports the relationship between unemployment and consumer sentiment for Democrats and Republicans during the Clinton and Bush presidencies (controlling for the inflation rate, good economic news, bad economic news, and a variety of events).[1] Consistent with the partisan lens hypothesis, the results show clear differences across administrations. Looking at the second row of the table, the total effect of unemployment for Democrats is nearly three times as large (-0.50 versus -0.17) during the Bush presidency compared to the Clinton presidency. Although average unemployment was the same in both administrations, Democrats appear much more sensitive to unemployment under Bush. The opposite result holds for Republicans, as the relationship between unemployment and consumer sentiment is no longer statistically different from zero under Bush.

Of course, even though the average unemployment rate was similar across Clinton and Bush, there were differences in unemployment during the two presidencies. In particular, unemployment increased during the first two and a half years of the Bush presidency while it largely decreased throughout the Clinton presidency. It is possible that Democrats' increased sensitivity to unemployment during the Bush presidency resulted because Democrats' *pref-*

[1] Although not shown, the Clinton model includes dummy variables to control for the Oklahoma bombing, "Travelgate" (controversial firings of Clinton White House Travel Office employees), the federal government shutdown, Clinton's impeachment, and the Monica Lewinsky scandal. The Bush model includes dummy variables to control for September 11^{th} and the start of the Iraq War, as well as a count variable for the duration of the war. In order to compare coefficients across groups and administrations, unemployment has been standardized to a standard deviation of one for each administration. Additionally, for both administrations, Democratic and Republican consumer sentiment has been standardized to a standard deviation of one. By standardizing the variances of unemployment and partisan consumer sentiment, we ensure that any differences in coefficient size are not a result of different variances across comparison groups.

Table A-1: The Relationship between Unemployment and Economic Evaluations for Democrats and Republicans during the Bill Clinton and George W. Bush Presidencies

	Democrats		Republicans	
	Clinton	Bush	Clinton	Bush
Δ Unemployment	0.01	-0.31	-0.22	-0.20
	(0.20)	(0.23)	(0.17)	(0.25)
Unemployment$_{t-1}$	-0.17*	-0.50*	-0.18*	0.03
	(0.08)	(0.13)	(0.07)	(0.09)
Δ Inflation	0.03*	-0.01	0.03*	-0.25*
	(0.01)	(0.01)	(0.01)	(0.01)
Inflation$_{t-1}$	0.02	-0.01	0.03*	-0.03*
	(0.02)	(0.01)	(0.01)	(0.01)
Δ Good News	-0.000	0.005	0.001	-0.002
	(0.001)	(0.004)	(0.001)	(0.004)
Good News$_{t-1}$	0.001	-0.000	0.001	-0.002
	(0.002)	(0.005)	(0.001)	(0.005)
Δ Bad News	0.000	-0.010*	-0.000	-0.004
	(0.002)	(0.004)	(0.002)	(0.005)
Bad News$_{t-1}$	-0.001	-0.007	-0.002	-0.001
	(0.003)	(0.006)	(0.002)	(0.006)
Error Correction Rate				
Economic Evaluations$_{t-1}$	-0.20*	-0.53*	-0.18*	-0.22*
	(0.08)	(0.095)	(0.06)	(0.07)
Constant	-0.002	0.52	-0.02	0.04
	(0.055)	(0.22)	(0.05)	(0.22)
R^2	.25	.53	.33	.35
N	95	76	95	76

$* = p < .05$ (two–tailed tests), Standard errors in parentheses. Controls for the Oklahoma bombing, "Travelgate," the federal government shutdown, Clinton's impeachment, and the Monica Lewinksy scandal not shown.

erence for lower unemployment leads them to weigh unemployment more when it is rising. The results in Table A-2 do not, however, support this conclusion. Here we compare the relationship between unemployment and Democrats and Republicans' consumer sentiment during the first 30 months of the Bush presidency when unemployment was rising. If anything, Republicans were more sensitive than Democrats to the unemployment rate during this period. It appears that the results in Table A-1, which show Democrats were more attentive to unemployment under Bush while Republicans were less attentive to unemployment under Bush, did not result because Democrats were more critical of rising unemployment. Although a complete analysis of why partisan differences exist in economic evaluations is well beyond the scope of this paper, we believe Figure 1 (in the text) and these results are most consistent with the partisan lens interpretation that we rely on.

Table A-2: The Relationship between Unemployment and Economic Evaluations for Democrats and Republicans during the First 30 Months of the Bush Presidency

	Democrats	Republicans
Δ Unemployment	0.33	-0.08
	(0.54)	(0.40)
Unemployment$_{t-1}$	-0.35	-0.82*
	(0.18)	(0.15)
Δ Inflation	0.05	-0.01
	(0.03)	(0.02)
Inflation$_{t-1}$	0.03	-0.00
	(0.03)	(0.02)
Δ Good News	0.001	0.003
	(0.007)	(0.006)
Good News$_{t-1}$	-0.017	-0.006
	(0.011)	(0.008)
Δ Bad News	-0.011	-0.011
	(0.008)	(0.007)
Bad News$_{t-1}$	0.010	-0.007
	(0.013)	(0.010)
Error Correction Rate		
Economic Evaluations$_{t-1}$	-0.52*	-1.03*
	(0.18)	(0.13)
Constant	-0.20	0.74*
	(0.32)	(0.26)
R^2	.71	.87
N	29	29

$* = p < .05$ (two–tailed tests), Standard errors in parentheses. Controls for September 11^{th} and the Iraq War not shown.

A-2: Further Evidence of Partisan Asymmetries

Figure 3 in the text offers compelling evidence of partisan asymmetries in economic evaluations. Of course, the percentage of Democrats and Republicans are not equivalent and the relative size of the two parties changes over time (MacKuen, Erikson and Stimson, 1989). Thus, the observed asymmetries could still cancel each other out in the aggregate if we weight the series in Figure 3 by the relative percent of Democrats and Republicans in society. To evaluate this possibility, we utilize MacKuen, Erikson and Stimson's (1989) updated measure of macropartisanhip, which offers a quarterly estimate of the relative proportion of Democrats and Republicans.[2] The analysis begins by collapsing the monthly partisan series in Figure 3 to quarterly series (since macropartisanship is a quarterly measure). We then multiply the Democrats' economic evaluations by the proportion of Democrats in society and Republicans' economic evaluations by the proportion of Republicans in society. The sum of these two weighted series yields an aggregate measure of partisan consumer sentiment. From this measure, we subtract Independents' economic evaluations. Any difference between these two series reflects the effect of partisanship on economic evaluations that remains after weighting for the proportion of Democrats and Republicans in society.

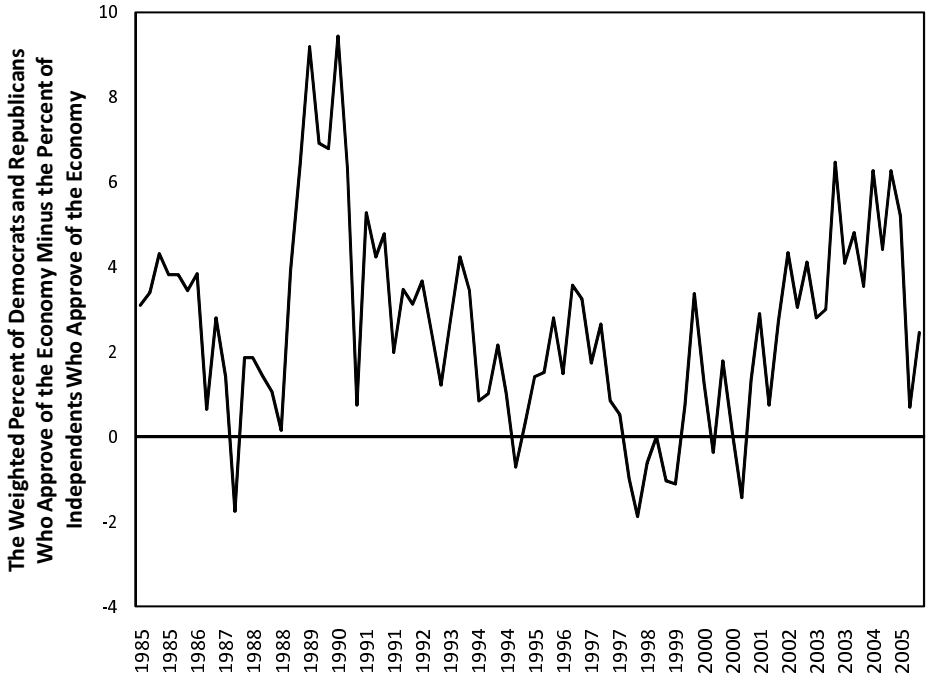

Figure A-1: The Influence of Partisanship on Economic Evaluations, Calculated as the Difference between Aggregate (Weighted) Partisan Economic Evaluations and Independents' Economic Evaluations, 1985 to 2005

[2]The updated macropartisanship data end in 2005, so this portion of the analysis ends in that year.

This series appears in Figure A-1. We see that for most of the period of analysis, aggregate partisanship is greater than zero (the mean difference between the two series is 2.6, indicating that on average, the percent approving of the economy among partisans was 2.6 percent higher than the corresponding percent of Independents). In other words, partisan economic evaluations appear to pull consumer sentiment in a positive direction. This is consistent with the asymmetric patterns of Figure 3, where Republicans were consistently more optimistic than Democrats were pessimistic. We also see predictable patterns of over-time variation in the series (the standard deviation is 2.3 and the values range from -1.9 to 9.4). During the 1990s, we see convergence between the aggregate partisan series and Independents' economic evaluations. This pattern again coincides with Figure 3 where we saw the three series converge during the good economic times that corresponded with the Clinton presidency. In 2001, after Bush takes office, however, we see the increasing effect of partisanship, as Republicans pull aggregate partisan economic evaluations in a positive direction. These over-time differences imply that we cannot purge partisanship from consumer sentiment by simply shifting the intercept of the series. As expected, the influence of partisanship on aggregate economic evaluations varies depending on the economic and political context.

A-3: Further Evidence of Differential Partisan Updating

Because of the importance of unemployment to economic perceptions (as documented in the text), it is useful to explore further the relationship between changes in unemployment and economic perceptions. Although the differences between Democrats and Republicans in the LRMs for unemployment described in Table 1 are noteworthy, they do not quite reach conventional levels of significance in a Wald test (p=0.12). However, the analysis of partisan economic perceptions does not allow for effects to differ as partisan control of the executive changes. Using the Clarify program written by Tomz, Wittenberg and King (2003) to estimate the expected changes in the economic perceptions, it is possible to see how Democrats and Republicans respond to unemployment when a Democrat is the White House (see Figure A-2), and how they respond when a Republican is the in White House (see Figure A-3). The figures demonstrate the expected change in the economic perceptions in response to unemployment while accounting for the uncertainty in making those predictions through the calculation of confidence intervals. Thus, rather than showing that parties respond differently overall, we can see when they have a similar evaluation and when it is different.

Figure A-3 shows that, at both low and high levels of unemployment during a Republican administration, there are significant differences between the effects that unemployment has on economic attitudes; the 95 percent confidence intervals for Republicans and Democrats do not overlap except when unemployment is very low. Figure A-2 shows that, during a Democratic administration, at both extremely low and extremely high levels of unemployment, the effects of unemployment on consumer sentiment are statistically indistinguishable among Republicans and Democrats. In the middle range, however, the differences are statis-

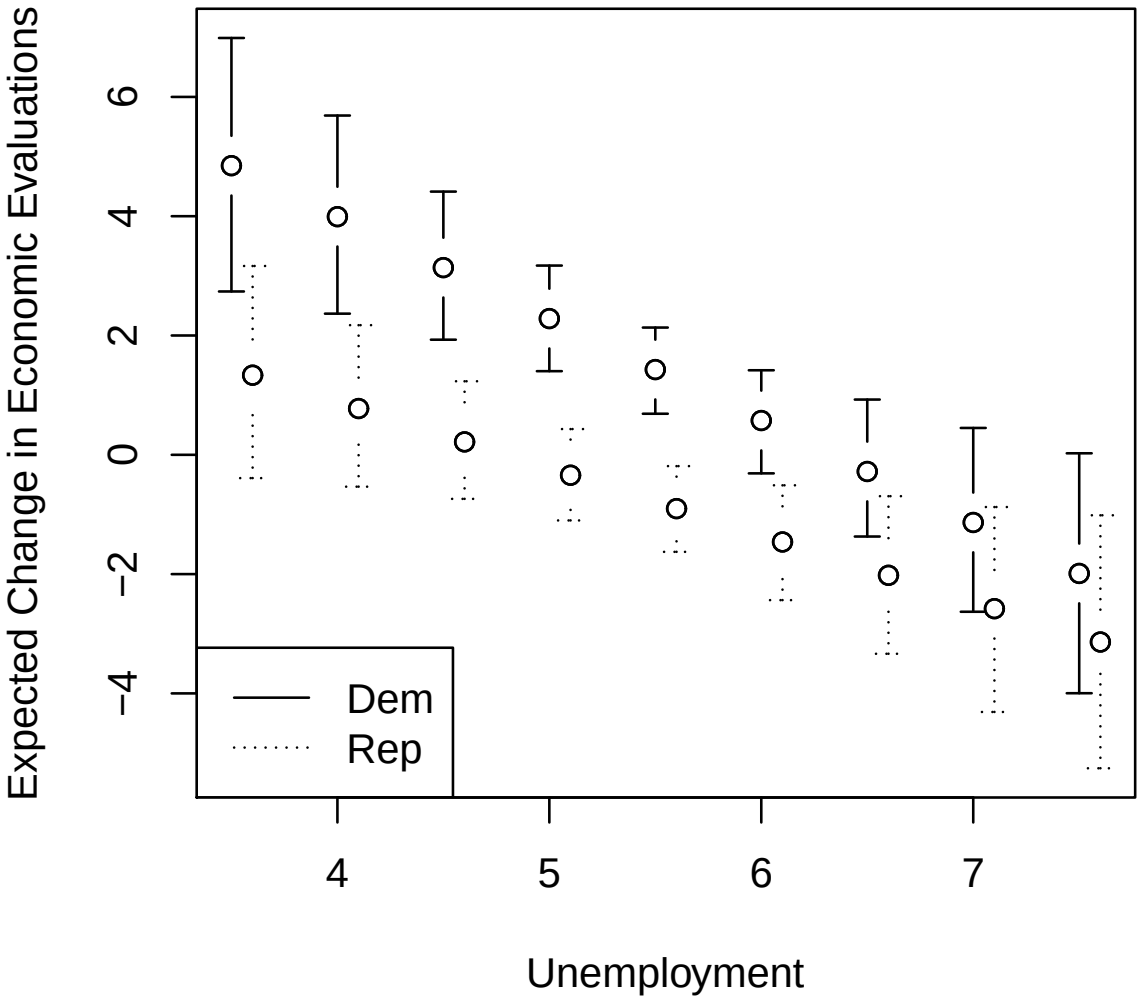

Figure A-2: The Expected Change in Partisan Economic Perceptions for Unemployment When a Democratic Controls the White House, with 95 Percent Confidence Intervals

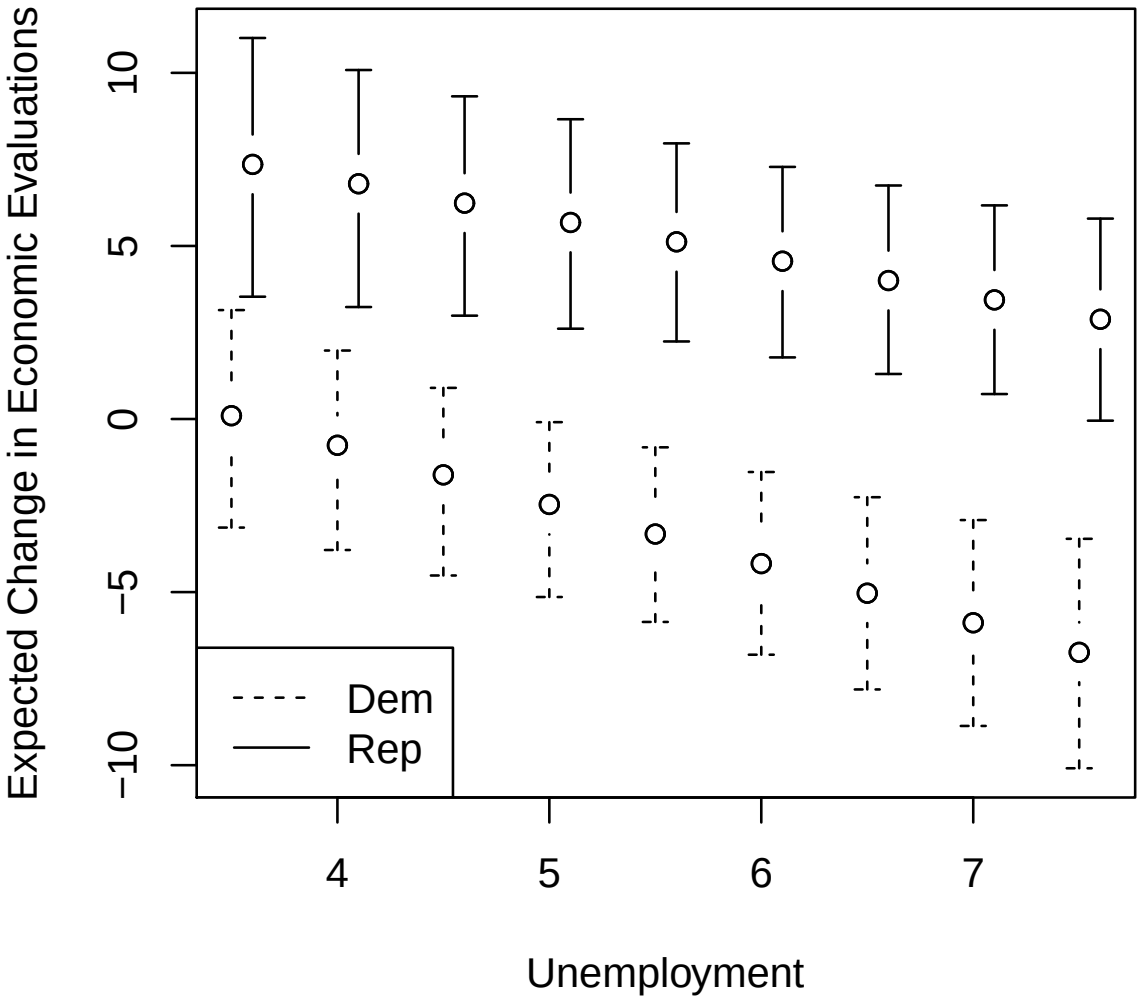

Figure A-3: The Expected Change in Partisan Economic Perceptions for Unemployment When a Republican Controls the White House, with 95 Percent Confidence Intervals

tically different. Thus, partisan effects are sharper when the signals about the strength of the economy are less clear (i.e., neither very good nor very bad). This analysis, which provides a more nuanced understanding of the way that unemployment works its way through partisan filters, provides additional evidence that significant partisan differences exist.

A-4: VAR Analysis of Effects of Endogenous Economic Evaluations

We extend the analysis reported in Table 2 to consider the possibility that a simultaneous relationship between approval of the president's handling of the economy (i.e., economic job approval) and consumer sentiment is leading to an overestimate of the effect of partisanship. This issue is examined with a Vector Autogression (VAR) model using the same variables as in the text, focusing on the relationship between economic job approval, consumer sentiment, and the non-partisan factor measure.[3] Table A-3 contains Granger causality tests for two models, one using consumer sentiment as a measure of the public's evaluation of the economy and the other using the non-partisan factor. The results of both models confirm a simultaneous relationship between economic evaluations and economic job approval, a relationship first demonstrated by DeBoef and Kellstedt (2004). Thus, economic job approval and economic evaluations (even when controlling for partisanship in the non-partisan factor model) seem to reinforce one another in the month that they are measured. However, even controlling for this simultaneous relationship with the VAR model, the effect of partisanship on economic job approval and consumer sentiment overstates the impact of economic evaluations. The impulse response functions reported in Figure A-4 show the effect that changes in consumer sentiment and the non-partisan factor have on economic job approval. As the figure shows, consumer sentiment consistently overstates the role of economic evaluations on economic job approval when compared to the impact of the non-partisan factor. Thus, this analysis, which controls for simultaneity, is consistent with the single-equation effects described in the ECM analysis.

[3]The structural analysis was also evaluated using a Vector Error Correction (VEC) model, which may be more appropriate for integrated data, but makes it difficult to conduct causality tests. Using a VEC model yields nearly identical findings to the VAR analysis, particularly for the impulse response analysis presented in Figure A-4

Table A-3: Assessing Issues of Simultaneity in Economic Perceptions and Economic Job Approval, VAR Analysis

Model 1: Consumer Sentiment and Economic Job Approval

Response		Cause	χ^2	Prob. χ^2
Consumer Sentiment	←	**Economic Job Approval**	**10.526**	**0.001**
	←	Unemployment	1.1538	0.283
	←	Inflation	2.7046	0.100
	←	Good News	0.37793	0.539
	←	Bad News	1.2085	0.272
Economic Job Approval	←	**Consumer Sentiment**	**9.312**	**0.002**
	←	Unemployment	3.295	0.069
	←	Inflation	0.765	0.382
	←	Good News	0.350	0.554
	←	Bad News	0.096	0.756

Model 2: Non-Partisan Economic Evaluation and Economic Job Approval

Non-Partisan Evaluation	←	**Economic Job Approval**	**9.171**	**0.002**
	←	Unemployment	0.278	0.598
	←	Inflation	0.347	0.556
	←	Good News	2.535	0.111
	←	Bad News	14.577	0.000
Economic Job Approval	←	**Non-Partisan Evaluation**	**12.77**	**0.000**
	←	Unemployment	7.528	0.006
	←	Inflation	1.461	0.227
	←	Good News	1.580	0.209
	←	Bad News	0.161	0.688

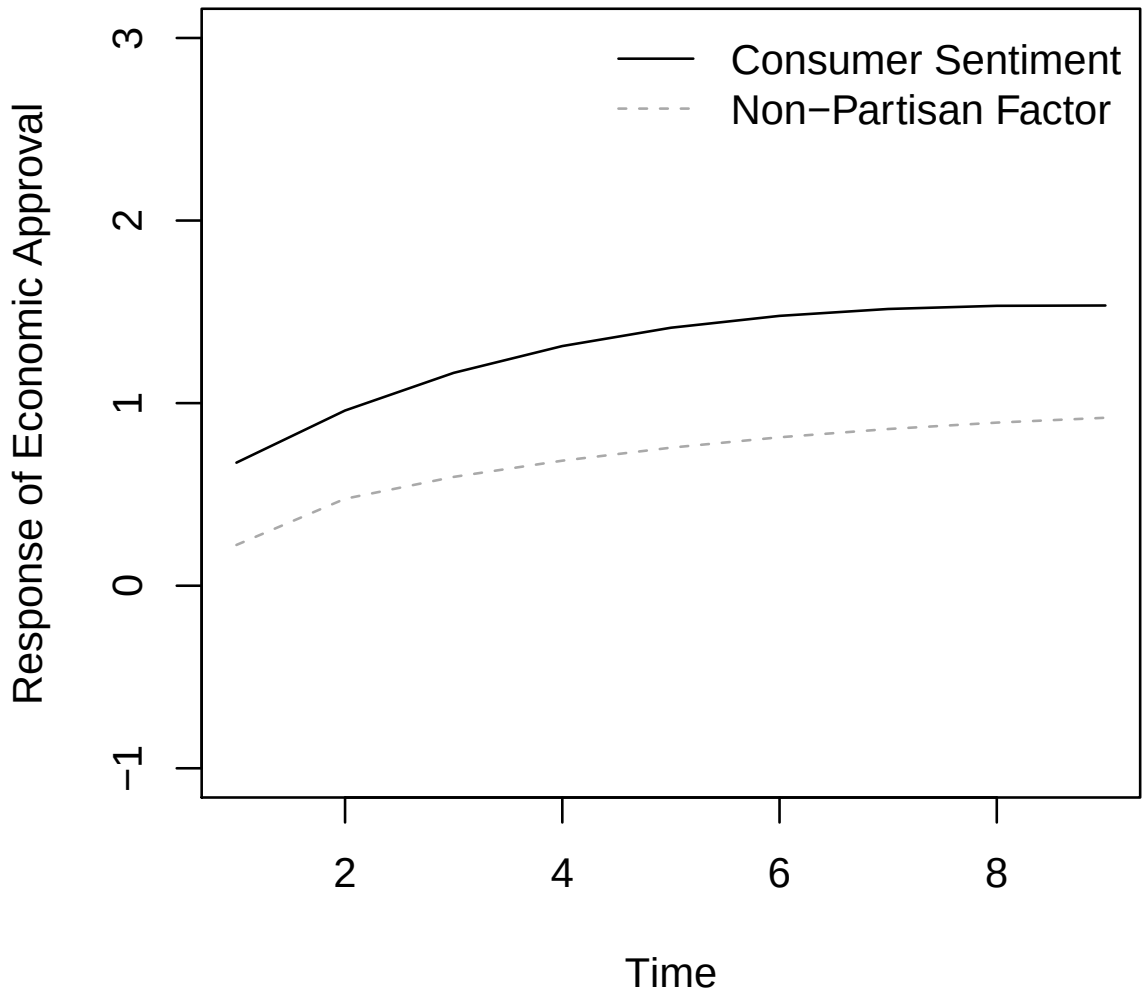

Figure A-4: Orthogonalized Impulse Response of Approval of the President's Handling of the Economy to Shocks in Economic Evaluations

A-5: Complete Results for Tables 1 and 2

To save space, Tables 1 and 2 in the text did not report certain control variables and some independent variables that were not significant. Tables A-4 and A-5, below, report the full results for Tables 1 and 2.

Table A-4: The Economic Determinants of Changes in Economic Evaluations by Partisanship

	(1) Democrats	(2) Independents	(3) Republicans
Economic Evaluation$_{t-1}$	-0.169^{***}	-0.186^{***}	-0.171^{***}
	(0.021)	(0.020)	(0.022)
Δ Unemployment	-1.793	-0.828	-3.584^{*}
	(1.896)	(1.706)	(1.861)
Unemployment $_{t-1}$	-1.752^{***}	-1.342^{**}	-1.096^{**}
	(0.592)	(0.524)	(0.552)
Δ Inflation	-0.036	0.018	0.003
	(0.084)	(0.076)	(0.082)
Inflation$_{t-1}$	-0.186^{*}	-0.133	-0.106
	(0.096)	(0.086)	(0.094)
Δ Coincident Indicators	-0.349	0.365	1.727^{*}
	(1.056)	(0.949)	(1.036)
Coincident Indicators$_{t-1}$	-0.009	0.1115	0.135^{*}
	(0.077)	(0.069)	(0.076)
Δ Good News	0.013	0.003	0.007
	(0.016)	(0.014)	(0.016)
Good News$_{t-1}$	0.026	0.014	0.016
	(0.020)	(0.018)	(0.020)
Δ Bad News	-0.044^{*}	-0.025	-0.033
	(0.023)	(0.020)	(0.022)
Bad News$_{t-1}$	-0.058^{**}	-0.039	-0.045
	(0.028)	(0.025)	(0.028)
Bush Admin Dummy	-3.779^{***}	-5.842^{***}	-5.177^{***}
	(1.057)	(1.036)	(1.134)
Clinton Admin Dummy	-1.692	-4.842^{***}	-6.425^{***}
	(1.385)	(1.324)	(1.557)
W. Bush Admin Dummy	-5.928^{**}	-9.157^{***}	-7.508^{***}
	(2.493)	(2.303)	(2.505)

Continued on next page

Table A-4 – continued from previous page

	(1) Democrats	(2) Independents	(3) Republicans
Long-run Multiplier			
Unemployment	−10.342***	−7.207***	−6.408***
	(3.119)	(2.660)	(3.177)
Inflation	−1.097*	−0.713	−0.621
	(0.572)	(0.466)	(0.554)
Coincident Indicators	−0.054	0.616*	0.791*
	(0.045)	(0.373)	(0.466)
Good News	0.154	0.076	0.092
	(0.119)	(0.096)	(0.115)
Bad News	−0.340***	−0.208	−0.265*
	(0.171)	(0.136)	(0.164)
Constant	22.626**	11.891	9.608
	(9.834)	(8.643)	(9.269)
Observations	268	268	268
R^2	0.11	0.10	0.10

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
Long-run Multiplier estimated with a Bewley transformation, following De Boef and Keele (2008). Administration dummy variables not shown.

Table A-5: The Relationship between Approval of the President's Handling of the Economy and Three Measures of Economic Evaluations

	(1) Index of Consumer Sentiment	(2) Aggregate Economic Evaluations	(3) Non-Partisan Economic Evaluations
Economic Evaluation$_{t-1}$	-0.127^{***}	-0.148^{***}	-0.134^{***}
	(0.0266)	(0.0303)	(0.0296)
ΔIndex of Consumer Sentiment	0.167^{***}		
	(0.0517)		
Index of Consumer Sentiment$_{t-1}$	0.167^{***}		
	(0.0517)		
ΔAggregate Economic Evaluation		0.121^{**}	
		(0.0474)	
Aggregate Economic Evaluation$_{t-1}$		0.067^{**}	
		(0.0279)	
ΔNon-Partisan Econ Evaluation			0.0159
			(0.0500)
Non-Partisan Econ Evaluation$_{t-1}$			0.0465^{*}
			(0.0272)
Δ Unemployment	-1.601	-1.391	-1.715
	(1.320)	(1.308)	(1.342)
Unemployment$_{t-1}$	-0.852^{**}	-0.776^{**}	-0.830^{**}
	(0.3068)	(0.318)	(0.331)
Δ Inflation	-0.0675	-0.0886	-0.0915
	(0.0601)	(0.0581)	(0.0591)
Inflation$_{t-1}$	-0.0378	-0.0816	-0.0998
	(0.0705)	(0.0676)	(0.0682)
Δ Bad News	-0.0393^{**}	-0.0436^{***}	-0.0484^{***}
	(0.0159)	(0.0159)	(0.0160)
Bad News$_{t-1}$	-0.0285	-0.0366^{*}	-0.0437^{**}
	(0.0195)	(0.0194)	(0.0200)
Δ Good News	0.0521^{***}	0.0536^{***}	0.0552^{***}
	(0.0110)	(0.0111)	(0.0112)
Good News$_{t-1}$	0.0453^{***}	0.0478^{***}	0.0501^{***}
	(0.0136)	(0.0136)	(0.0138)
Bush Admin Dummy	-1.217^{*}	-0.649	-0.857
	(0.682)	(0.764)	(0.817)

Continued on next page

Table A-5 – continued from previous page

	(1) Index of Consumer Sentiment	(2) Aggregate Economic Evaluations	(3) Non-Partisan Economic Evaluations
Clinton Admin Dummy	−0.545	0.297	0.240
	(0.593)	(0.719)	(0.780)
W. Bush Admin Dummy	−1.846**	−0.827	−1.280
	(0.710)	(0.907)	(0.907)
First Gulf War	7.636**	6.780**	6.558**
	(2.928)	(2.914)	(2.951)
September 11, 2002	3.719***	3.768***	3.710***
	(1.214)	(1.207)	(1.228)
Invasion of Iraq	1.889	2.167	2.306
	(1.687)	(1.673)	(1.670)
Long-run Multiplier			
Consumer Sentiment	0.634***		
	(0.255)		
Aggregate Economic Evaluation		0.453***	
		(0.138)	
Non-Partisan Econ Evaluation			0.348**
			(0.161)
Unemployment	−6.729***	−5.229**	−6.216**
	(2.385)	(2.247)	(2.676)
Inflation	−0.299	−0.550	−0.748
	(0.556)	(0.466)	(0.529)
Bad News	−0.225	−0.246*	−0.327**
	(0.165)	(0.140)	(0.163)
Good News	0.358***	0.322***	0.375***
	(0.135)	(0.113)	(0.133)
Constant	3.647	7.787**	8.713***
	(4.440)	(3.114)	(3.241)
Observations	268	268	268
R^2	0.256	0.250	0.231

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

References

De Boef, Suzanna and Luke Keele. 2008. "Taking Time Seriously." *American Journal of Political Science* 52(1):184–200.

De Boef, Suzanna and Paul M. Kellstedt. 2004. "The Political (and Economic) Origins of Consumer Confidence." *American Journal of Political Science* 48:633–649.

MacKuen, Michael B., Robert S. Erikson and James A. Stimson. 1989. "Macropartisanship." *American Political Science Review* 83:1125–1142.

Tomz, Michael, Jason Wittenberg and Gary King. 2003. "CLARIFY: Software for Interpreting and Presenting Statistical Results." *Journal of Statistical Software* 8:1–30.