

# Good News and Bad News: Asymmetric Responses to Economic Information

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*There is a growing body of work suggesting that responses to positive and negative information are asymmetric—that negative information has a much greater impact on individuals' attitudes than does positive information. This paper explores these asymmetries in mass media responsiveness to positive and negative economic shifts and in public responsiveness to both the economy itself and economic news coverage. Using time-series analyses of U.K. media and public opinion, strong evidence is found of asymmetry. The dynamic is discussed as it applies to political communications and policymaking and more generally to public responsiveness in representative democracies.*

There are large and growing bodies of work on the political significance of economic news. Most prominent is work connecting media coverage of the economy with electoral results. This literature shows that economic news coverage has an effect on public perceptions of the economy, which in turn have an effect on support for government and/or voting behaviour (e.g., Erikson, MacKuen, and Stimson 2002; MacKuen, Erikson, and Stimson 1992; Nadeau et al. 1999; Sanders, Marsh, and Ward 1993). This is just one way in which economic news has important political consequences.

That said, relatively little attention has been paid to the precise nature of both (a) the relationship between real-world economic indicators and economic news and (b) the effect that economic news has on public opinion and policymakers. For instance, much past research on economic news assumes implicitly if not explicitly that the effects of positive and negative news—or, rather, of *increases* and *decreases* in positive or negative news—are symmetric: that the effect of a 1-unit increase in negative news on public opinion is the same as that of a 1-unit decrease in negative news. The only difference is that if the former effect is positive, the latter is negative.

It is unlikely that individuals' responses to positive and negative information are symmetric. An increasing body of work in political science and psychology suggests that the effect of a 1-unit increase in negative news is *not* simply the opposite of a 1-unit decrease; rather, increases in bad news may matter a good deal more. In economics, theories of *loss aversion* and

*prospect theory* suggest a somewhat similar dynamic. Asymmetric responses to positive and negative news by media, public, and policymakers are both likely and widespread.

This paper seeks to draw research in political science together with research from other fields and build a more thorough account of the magnitude and pervasiveness of asymmetric responses to information. In particular, this paper draws together asymmetries evident in public opinion and asymmetries evident in media content. Both may be produced by the same individual-level processes; both may also be regular features of representative democracy.

Asymmetries in media and public responsiveness are investigated here using aggregate-level time-series data for the United Kingdom from 1986 to 2000. The paper begins with a discussion of recent work on asymmetric responses to information. A content analysis of economic news in *The Times* (London) is then used to examine (1) the link between news coverage and the actual economy and (2) the relationship between the economy, media coverage and public opinion. Results provide strong evidence of asymmetric responses to positive and negative information.

## Asymmetric Responses to Information

There is a growing body of work suggesting asymmetry in responses to negative versus positive informa-

tion. There is evidence that negative information plays a greater role in voting behaviour (e.g., Aragones 1997; Campbell et al. 1960; Kernell 1977) and, more specifically, that U.S. presidents are penalized electorally for negative economic trends but reap few electoral benefits from positive trends (e.g., Bloom and Price 1975; Claggett 1986; Headrick and Lanoue 1991; Kiewiet 1983; Lanoue 1987; Mueller 1973; Nannestad and Paldam 1997).<sup>1</sup> Asymmetries have also been identified in the formation of more general impressions of U.S. presidential candidates and parties (Holbrook et al. 2001; Lau 1982, 1985), and the significance of negativity has been examined as it relates to the effects of negative campaigning (Fridkin and Kenney 2004) and declining trust in governments (Niven 2000).

The individual-level process behind asymmetric responsiveness has been further explored in the psychology literature on impression formation. This work finds that unfavorable information has a greater impact on impressions than does favorable information, across a wide variety of situations (e.g., Ronis and Lipinski 1985; Singh and Teoh 2000; Van der Pligt and Eiser 1980; Vonk 1993, 1996). Several explanations have been given for this asymmetry. Most work suggests that impressions are formed based on an expectation, or reference point. These impressions can vary based on experience; however, individuals tend to be mildly optimistic, so the reference point tends to on average be slightly positive. In one conception, this simply means a shift in *perspective*: -4 looks much worse from an expectation of +4 than it does from an expectation of 0 (e.g., Helson 1964; Sherif and Sherif 1967). An alternative theory suggests that the asymmetry is driven by *cognitive weighting*: more attention is given to information that is regarded as unique or novel, which tends to be information that is more extreme (e.g., Fiske 1980). So similarly, -4 is more extreme (and thus is given greater weight) if the expectation is +4 rather than 0. Both theories suggest that it is the average expectation of a reasonable economy that leads individuals to view mildly negative information as very negative, or particularly informative, and react accordingly.<sup>2</sup>

<sup>1</sup>It is notable that, using individual-level data from a number of European countries, Lewis-Beck (1988) finds no evidence of a greater effect of negative economic views than positive economic views. The analysis relies on two questions dealing with retrospective and prospective views of the *Government's* economic policies, however, and may thus confuse judgments of Government with economic assessments.

<sup>2</sup>For a thorough review of the literature, see Skowronski and Carlston (1989).

Work in economics suggests a similarly asymmetric story. *Prospect theory* (Kahneman and Tversky 1979) is a theory of choice under uncertainty which contains a feature called *loss aversion*. Simply put, people care more strongly about a loss in utility than they do about a gain of equal magnitude. This individual-level loss-averse behaviour is evidenced in macroeconomic dynamics: consumption tends to drop more when the economy contracts than rise when the economy expands (Bowman, Minehart, and Rabin 1999). Since people are averse to losses, they fail to cut back on expenditures immediately following news that economic performance is expected to decline, which forces them to cut back more sharply when the poor economic outcome is actually realized. Since people are not averse to gains, their immediate increase in consumption following good news means that there is not a steep increase in consumption once the good outcome is realized. The net result is that current increases in income have an incremental (positive) effect on current consumption, while current decreases have quite a dramatic (negative) effect.<sup>3</sup>

Prospect theory is specific to consumption and relies on a slightly different cognitive process than does work on attitude formation. In the psychology literature, asymmetry is the product of differences in perception; in the economics literature, asymmetry is conceived not so much as a function of perception as the process of reacting differently to positive and negative perceptions. Each body of theory draws on similar beliefs about human nature, however. And in each narrative reactions to negative information are greater than reactions to positive information.

It is notable that discussions of asymmetric responsiveness are also widespread in the literature on mass media. A considerable body of work suggests that news tends to be more negative than positive. Mass media overemphasize the prevalence of violent crime (e.g., Altheide 1997; Davie and Lee 1995; Smith 1984), and events involving conflict or crisis receive a greater degree of media attention (Bagdikian 1987; Herman and Chomsky 1988; Paraschos 1988; Patterson 1997; Shoemaker, Danielian, and Brendlinger 1991). Most relevant to the current analysis, U.S. networks regularly give more coverage to bad economic trends than to good economic trends (Harrington 1989).

The prominence of negative media coverage may be driven by the same individual-level theories outlined above. Journalists are individuals, writing arti-

<sup>3</sup>For a review of prospect theory in political science research, see Levy (2003).

cles to appeal to other individuals. Journalists will thus regard negative information as more important, not just based on their own (asymmetric) interests, but also on the (asymmetric) interests of their news-consuming audience. Observed trends in media content are, in this view, a product of asymmetric reactions to information at the individual level.

There is an alternative explanation for the prominence of negative news. It may be that media outlets' emphasis on negative news reflects one of their principle institutional functions in a democracy: holding current Governments (and companies, and indeed some individuals) accountable. The notion of mass media as a "Fourth Estate" (Carlyle 1841) has been prominent both in the literature on newspapers (e.g., Merrill and Lowenstein 1971; Hage et al. 1976; Small 1972), as well as in the pages of newspapers themselves. Surveillance of this kind mainly involves identifying problems. We might consequently expect that media emphasize negative information in part because it is their job to do so.

Asymmetry—viewed as a focus on monitoring and identifying problems—may thus be a standard attribute of representative democracy, not just for media but for voters as well. There is a body of political representational theory where accountability for errors plays a central role.<sup>4</sup> Ministerial responsibility in parliamentary systems focuses on this penalty-for-errors dynamic; so too do many accounts of "electoral responsibility." These notions of accountability fit well with early descriptions of asymmetry at the individual level: "the electorate votes against policies and incumbents to a greater degree than it votes for new policies and candidates" (Kernell 1977, 51).

This accountability explanation need not be independent from the preceding psychological theory. A particular focus on the watch-dog role of the press, and on accountability in governance more generally, may well be connected to the impression that negative information is a more critical indicator of government performance than is positive information. Asymmetry and accountability may be fundamentally intertwined. The existence of asymmetric responsiveness should not necessarily be viewed as a negative, normatively speaking; indeed, it may reflect a well-functioning, accountable democratic system. Asymmetric responsiveness may be a typical and critical feature of representative democracy.

Asymmetry is accordingly not examined here as a problem, but as an important and perhaps underappreciated dynamic in both public opinion and media

coverage. That it exists may have both good and bad consequences. These are not judged here; for the meantime, the goal is to better understand the nature and magnitude of asymmetry. Particular attention is paid to the interaction between asymmetries in media and public responsiveness—to the possibility that media content magnifies the asymmetry in individuals' responses to information. Individuals will already be predisposed towards overweighting negative information. In anticipation of this interest, mass media will tend to prioritize coverage of negative information. As individuals receive information about the state of the world in part from mass media, then, they may be responding asymmetrically to information that is already asymmetrically biased. Where mass-mediated information matters, asymmetric responsiveness may accordingly be enhanced.

## The Determinants of Economic News

Given the potential influence of mass media (e.g., Iyengar and Reeves 1997; Patterson 1994), and of economic news in particular (e.g., Behr and Iyengar 1985; Duch, Palmer, and Anderson 2000; Mutz 1992; Nadeau et al. 1999; Pruitt, Reilly, and Hoffer 1988), this section explores the relationship between economic news and the actual economy. The investigation takes the form of two relatively simple autoregressive distributed lag (ADL) models,<sup>5</sup> where current media content is modelled as a function of past media content and current changes in economic indicators. More formally, the models are as follows,

$$Media_t = \alpha_1 + Media_{t-1,k} + \Delta Eco_t + \varepsilon_1, \quad (1)$$

$$Media_t = \alpha_2 + Media_{t-1,k} + \Delta Eco(Worse)_t + \Delta Eco(Better)_t + \varepsilon_2, \quad (2)$$

where *Media* is media content, *Eco* is an economic indicator, and  $\alpha$  and  $\varepsilon$  are the constant and error term, respectively. Model 1 tests for a simple symmetric effect—the coefficient for *Eco* denotes the magnitude of the change in *Media* (at time *t*) related to a concurrent one-unit increase or decrease in *Eco*. Model 2 tests for asymmetric responsiveness. Here, *Eco (Worse)* is negative changes in the economy, and *Eco (Better)* is positive changes in the economy. To be clear: *Eco*

<sup>4</sup>See Pitkin's (1967, 55–59) discussion of "accountability theorists."

<sup>5</sup>There is some concern that this simple model is inappropriate if the time series are integrated. The media time series are not integrated; unemployment and inflation are both integrated in levels, but not in changes.

(*Worse*) is equal to *Eco* when the economic indicator worsens, and equal to zero otherwise; *Eco (Better)* is equal to *Eco* when the economic indicator improves, and equal to zero otherwise. If reactions are symmetric, the size of the coefficients for *Eco (Worse)* and *Eco (Better)* should be roughly equal; if reactions are asymmetric, the size of the coefficients should differ significantly.

*Media* is measured here using coverage of unemployment and inflation in *The Times* (London) from July 1986 to December 2000. Articles were coded as positive, negative, or neutral in their coverage. Articles noting that unemployment dropped, that a new factory was employing 1,000 workers, or that the cost of living was decreasing, for instance, were coded as positive; conversely, articles noting that unemployment was rising, that a major factory was closing, or that the cost of living was going up were coded as negative. Just over 5,000 relevant articles were coded; complete details of the content analysis, including a comparison of *The Times* with other U.K. broadsheets (and descriptives for all variables used in this paper), are available in an online appendix at <http://www.journalofpolitics.org>.

The resulting data are used to create several media series: total monthly negative coverage for unemployment or inflation; total monthly positive coverage for unemployment or inflation; and *net* monthly coverage—the number of positive stories minus the number of negative stories—for unemployment or inflation. In addition, a measure of “Bad News” was created, combining total negative coverage in all stories. Media series are illustrated in the bottom two panels of Figure 1.

*Eco* in Models 1 and 2 is either the unemployment rate or rate of inflation, or—for Bad News—the Conference Board’s leading index, combining information from seven different economic time series.<sup>6</sup> Unemployment and inflation are included in current changes; leading indicators are lagged by one period, as they are indeed “leading” and don’t tend to be reflected in media content until the following month.<sup>7</sup> The leading index is also reversed (multiplied by  $-1$ )

<sup>6</sup>Information on The Conference Board’s Leading Index is available at <http://www.conference-board.com>. The usual index includes a survey-based measure of consumer confidence; this has been excluded from the index used here so as to avoid difficulties in subsequent analyses, where the index is used as an independent variable in models of public economic expectations. Removing the survey measure in fact makes little difference to the index.

<sup>7</sup>This suspicion was confirmed in preliminary tests, where there was no discernable current effect of leading indicators, but very strong lagged effects.

for forthcoming analysis, so that—like unemployment and inflation—upward shifts reflect negative economic change.

Results for both models are shown in Tables 1 and 2. Each of the seven media series listed above is modelled using both the necessarily symmetric Model 1, and the potentially asymmetric Model 2. All media time series show considerable autocorrelation, accounted for in these models using lags of the media variable from  $t - 1$  to  $t - 4$ ;<sup>8</sup> only the summed coefficient is presented in Table 1.

Results for Model 1 in Table 1 show that current trends in the unemployment rate have a positive and significant impact on negative coverage of unemployment (column 1) and inflation (column 7) in *The Times*. Specifically, a one-standard deviation (.12) rise in the unemployment rate leads to an average (concurrent) additional two negative articles; a one-standard deviation (.36) rise in the rate of inflation leads to an average .5 negative articles. Similarly significant effects are found for net coverage of both unemployment and inflation. This is positive minus negative coverage, so the coefficients should be and are negatively signed.

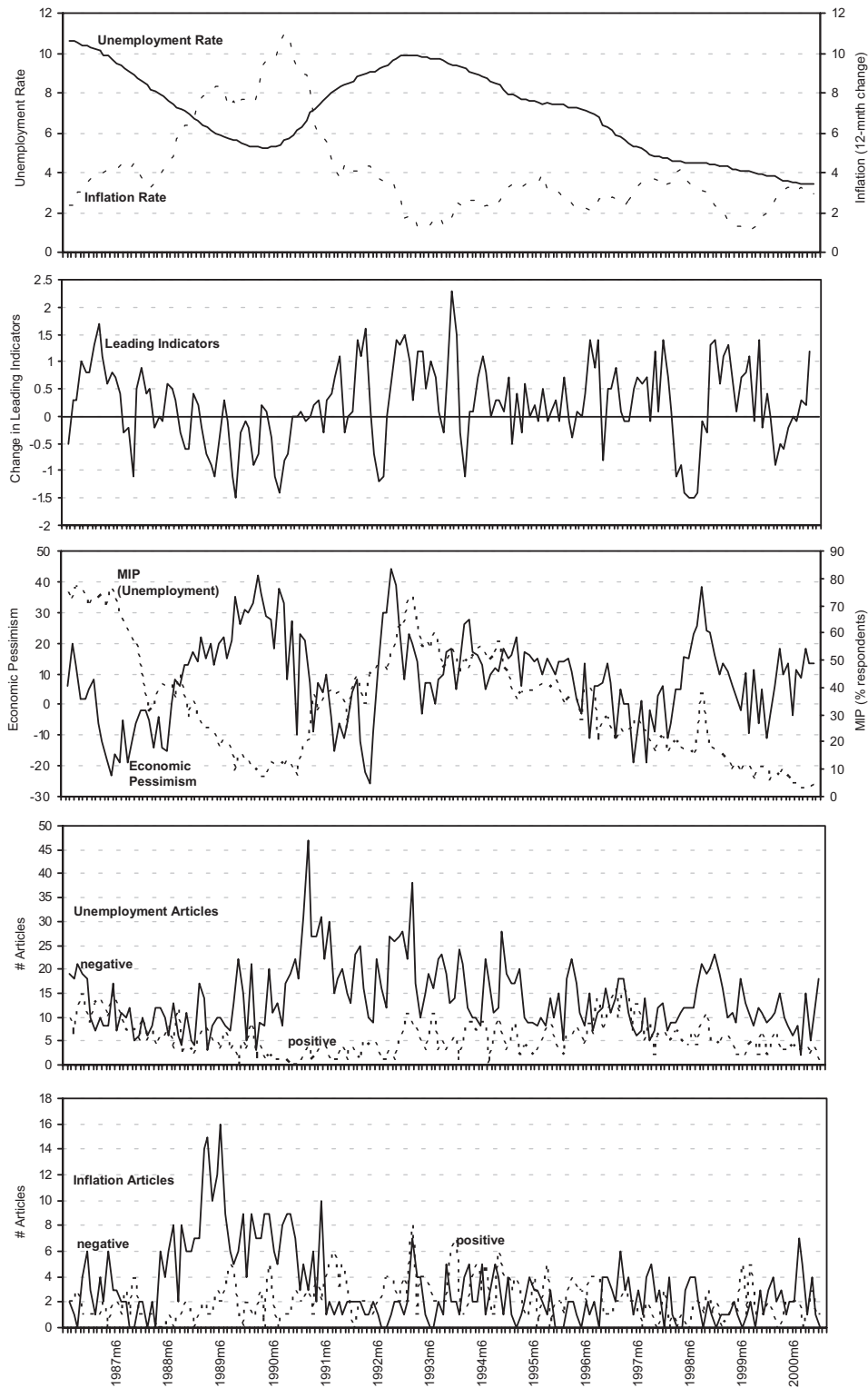
For positive coverage (columns 3 and 9), the *Eco* coefficient is appropriately negatively signed in both cases but significant only for inflation.<sup>9</sup> Note that this does not necessarily mean positive articles appear bearing no relation to economic shifts. Positive economic information just does not generate positive articles as consistently as negative information generates negative articles. Positive shifts in unemployment are simply not as newsworthy.

It is striking just how little of the volume and tone of economic news coverage can be accounted for by current changes in the actual economy. Some of this is to be expected—there is bound to be a certain amount of “noise” in news coverage, as the number of stories is affected by variations in the volume of advertising, the passing interests of individual reporters, and the constantly varying salience of all other issues (to name just a few possible factors). However, controlling for the history of each media series, the additional proportion of variance explained by the

<sup>8</sup>The decision to use lags  $t - 1$  to  $t - 4$  (that is, lags  $t - 1$ ,  $t - 2$ ,  $t - 3$  and  $t - 4$ ) reflects purely statistical considerations. That is, there is no theory to guide us here—no substantive reason why effects should happen over four months in particular. Rather, preliminary tests suggest that four lags are necessary to account for the autocorrelation in these data series.

<sup>9</sup>The apparent lack of connection between positive media content and unemployment is in line with previous work (Goidel and Langley 1995).

FIGURE 1 Time Series



unemployment rate (based on the increase in the R-squared for each model) is about 6% for negative and net coverage, and less than 2% for all and positive coverage. The story for inflation is no better: the rate of inflation accounts for an additional 3% of vari-

ance in negative coverage, 1% of net coverage, and 5% of positive coverage. The “noise” in each media series is rather considerable; the connection between coverage and either unemployment or inflation is rather weak.



TABLE 1 Economic Indicators and Media Coverage: Unemployment and Inflation

Column	Dependent Variable											
	Unemployment Articles						Inflation Articles					
	Negative		Positive		Net		Negative		Positive		Net	
Model 1 (1)	Model 2 (2)	Model 1 (3)	Model 2 (4)	Model 1 (5)	Model 2 (6)	Model 1 (7)	Model 2 (8)	Model 1 (9)	Model 2 (10)	Model 1 (11)	Model 2 (12)	
Chg in Economy <sub>t</sub> <sup>a</sup>	16.256* (4.234)	—	-2.809 (2.215)	—	-22.17* (5.317)	—	—	1.367* (.460)	—	-1.027* (.324)	—	-1.145 (.612)
Chg Economy (Worse) <sub>t</sub> <sup>a</sup>	—	28.396* (7.875)	—	-2.268 (3.629)	—	-34.10* (9.139)	3.869* (.869)	—	-7.88 (.611)	—	—	-1.450 (1.198)
Chg Economy (Better) <sub>t</sub> <sup>a</sup>	—	8.139 (6.124)	—	-3.270 (3.303)	—	-14.884* (6.977)	-4.76 (.708)	—	-1.208* (.509)	—	—	-9.20 (.979)
Σ Dependent <sub>t-1,4</sub>	.545* (.091)	.502* (.093)	.711* (.089)	.711* (.089)	.541* (.092)	.502* (.095)	.774* (.066)	.813* (.068)	.449* (.120)	.449* (.121)	.774* (.078)	.770* (.080)
Constant	6.958* (1.436)	6.657* (1.435)	1.349* (.487)	1.300* (.554)	-4.866* (1.058)	-4.350* (1.101)	.139 (.303)	.576* (.282)	1.120* (.274)	1.065* (.299)	-2.76 (.245)	-2.11 (.328)
N	170	170	170	170	170	170	163	163	163	163	163	163
Rsq/Adj Rsq	.412/.394	.423/.402	.431/.413	.431/.410	.512/.498	.520/.502	.557/.537	.525/.507	.173/.142	.173/.142	.416/.394	.417/.390
Durbin's h	1.217	.212	.205	.396	3.257*	.847	1.075	1.237	.474	.474	4.952*	6.012*

Note: Cells contain OLS regression coefficients with standard errors in parentheses, and standardized coefficients in italics.  
<sup>a</sup>Chg in Economy is monthly changes in the unemployment rate for unemployment models, and monthly changes in the rate of inflation for inflation models.  
 \*p > .05.

That economic indicators account for just a small proportion of the variance in media coverage is just part of the story. It is also true that media responsiveness to economic conditions is asymmetric. Results in Table 1 for Model 2 show quite clearly that this is the case for unemployment. For positive coverage, as in the symmetric model, there is no apparent effect of unemployment on coverage (column 4). For negative and net coverage (columns 2 and 6), the size of the coefficient for increases in the unemployment rate is much greater than that for decreases in the unemployment rate.<sup>10</sup> For instance, results for negative coverage suggest that a one-standard deviation (.12) increase in the unemployment rate is associated with an average current increase of 3.4 articles; the same decrease leads to a drop of just 1 (and this latter coefficient is insignificant). A similar story is evident in negative and net coverage of inflation (columns 8 and 12). Positive coverage of inflation (column 10) is the only outlier—here, improvements in the economy are significantly related to positive articles.

Table 2 shows the same two models estimated for the *Bad News* media series and the leading index. Results are very similar and nicely summarize trends in Table 1. In Model 1, the (reversed) leading index is appropriately positively related to Bad News. In Model 2, the effect of negative swings in the Index increase threefold, and positive swings have no significant effect.<sup>11</sup>

Media responses to economic conditions are asymmetric. To start, the size of the window for negative economic news is greater than the window for positive economic news—there is just simply more negative news. The mean number of negative stories a month for the period of analysis is 17.3; the mean number of positive articles is 7.5. Even within the negative and positive news windows, however, media responsiveness to both unemployment and inflation rates is asymmetric. An increase in either has a much greater effect on media coverage than does a decrease. Negative media coverage increases with signs of economic deterioration, but does not consistently

<sup>10</sup>F-tests of the null hypothesis that the coefficients for *Chg Economy (Worse)* and *Chg Economy (Better)* are equal provide a stricter test of asymmetry, and predictably return more conservative results. Results are, for unemployment, Negative,  $F = 3.32$ ,  $p = .07$ ; Positive,  $F = .04$ ,  $p = .85$ ; Net,  $F = 2.57$ ,  $p = .11$  (in all cases,  $df = 1,163$ ); for inflation, Negative,  $F = 11.24$ ,  $p = .00$ ; Positive,  $F = 21$ ,  $p = .65$ ; Net,  $F = .09$ ,  $p = .77$  (in all cases,  $df = 1,155$ ). The strongest case for a difference in coefficients, then, is for negative coverage.

<sup>11</sup>The F-test of the null hypothesis that the coefficients for *Chg Economy (Worse)* and *Chg Economy (Better)* are equal is 3.67,  $p = .05$  ( $df = 1,158$ ).

TABLE 2 Economic Indicators and Media Coverage: Bad News

Independent Variables	Dependent Variable Bad News	
Chg Economy <sub>t</sub> <sup>a</sup>	1.572* (.744)	—
Chg Economy (Worse) <sub>t</sub> <sup>a</sup>	—	4.547* (1.720)
Chg Economy (Better) <sub>t</sub> <sup>a</sup>	—	-.346 (1.244)
Σ Dependent <sub>t-1,4</sub>	.736* (.082)	.730* (.081)
Constant	4.821* (1.506)	3.737* (1.597)
N	165	165
Rsq/Adj Rsq	.367/.347	.381/.358
Durbin's <i>h</i>	.117	.071

Note: Cells contain OLS regression coefficients with standard errors in parentheses, and standardized coefficients in italics.

<sup>a</sup>*Chg in Economy* is monthly changes in the Conference Board Leading Index, excluding public opinion, and reversed so that upward change indicates negative trends in the economy.

\* $p > .05$ .

decrease with signs of economic improvement. And only in one case—positive inflation coverage—is there any sign that news adjusts reliably as the economy improves. These findings are in line with psychological theories of impression formation and loss aversion; they are also in line with mass media's role as a Fourth Estate, with a focus on monitoring and identifying problems as they arise.

## The Determinants of Public Opinion on the Economy

Media responses to economic trends are asymmetric. Do public responses to economic trends show a similar dynamic? What about public responses to media coverage? These questions are explored here using two different time series of public opinion: (1) responses to the “most important problem” (MIP) question, and (2) public (sociotropic, prospective) economic expectations.

The first analyses speak to the extent to which issue salience responds asymmetrically to positive and negative news. MIP data have been used elsewhere to gauge public concern about economic issues (e.g., Hibbs 1989) and have played a particularly prominent role in the agenda-setting and priming literatures (e.g., Behr and Iyengar 1985; Dearing and Rogers

1996; Edwards and Mitchell 1995; Iyengar and Simon 1993; Krosnick and Kinder 1990; McCombs and Shaw 1972; Rabinowitz, Prothro, and Jacoby 1982; Soroka 2002). In addition, recent research shows that the relative salience of an issue can have a significant effect on government attention to the issue, and particularly government attentiveness to public preferences in a given policy domain (e.g., Franklin and Wlezien 1997; Jones 1994; Soroka 2003; Soroka and Wlezien 2004, 2005; Wlezien 2004). Evidence of asymmetric responses in the MIP time series may accordingly have significant implications for a considerable body of political research.

The first models accordingly explore the relationship between the economy, economic news, and responses to the MIP question. Unemployment, the most salient macroeconomic issue over this time period, is the focus here.<sup>12</sup> Specifically, the dependent variable is the proportion of respondents citing “unemployment” in response to the question, “What do you think is the most important problem facing our country today?” Survey results are drawn primarily from Gallup (United Kingdom); MORI results are used to interpolate data for months in which Gallup data are missing.<sup>13</sup>

While MIP data speak to the relative salience of issues, they are not well-equipped to provide measures of how exactly the public feels about the economy. Results for any one issue are of course related to the salience of all other issues; also, these data can indicate only problems, not not-problems (see Wlezien N.d.). In particular, they are not an adequate measure of economic expectations—forward-looking opinions likely to have an impact on future economic behaviour (and consequently the economy itself). Indeed, economic expectations data have played a more prominent role in the political economy literature, particularly in the literature connecting economic attitudes to government popularity and voting (e.g., Clarke and Stewart 1995; Happy 1986; Lewis-Beck 1988; MacKuen, Erikson, and Stimson 1992; Nadeau,

Niemi, and Amato 1994, 1996; Price and Sanders 1993; Sanders 1996, 1999), and to public preferences for policy (e.g., Durr 1993; Stevenson 2001).

A second set of analyses thus test for asymmetric responsiveness in a sociotropic expectations series. The series is drawn from the Gallup U.K. question: “Do you consider that the general economic situation in the next twelve months is likely to improve a lot, improve slightly, remain the same, deteriorate slightly, or deteriorate a lot?” The percentage of positive responses is subtracted from the percentage of negative responses to create an economic Pessimism measure. Missing data is interpolated using a similar MORI economic expectations series (see note 13). The resulting data are illustrated in the third panel of Figure 1.

Asymmetric responsiveness in the two public opinion series is tested using models similar to those for media content:<sup>14</sup>

$$\begin{aligned} \text{Opinion}_t = & \alpha_3 + \text{Opinion}_{t-1,k} + \Delta \text{Eco}_t \\ & + \Delta \text{Media}_t + \varepsilon_3, \end{aligned} \quad (3)$$

$$\begin{aligned} \text{Opinion}_t = & \alpha_4 + \text{Opinion}_{t-1,4} + \Delta \text{Eco}(\text{Worse})_t \\ & + \Delta \text{Eco}(\text{Better})_t + \Delta \text{Media}(\text{Worse})_t \\ & + \Delta \text{Media}(\text{Better})_t + \varepsilon_4 \end{aligned} \quad (4)$$

where *Opinion* is the MIP or Pessimism series, *Media* is the number of negative unemployment stories for MIP responses and the Bad News measure for Pessimism, and *Eco* is the corresponding economic indicator. For the former case, the economic indicator is simply the unemployment rate; for Pessimism, it is the leading index. Using the index means that the Pessimism model cannot speak to the extent to which particular components of the economy drive sociotropic economic expectations.<sup>15</sup> Rather, the estimation focuses on what is hoped to be a relatively

<sup>12</sup>Unemployment is the most consistently salient issue over this time period, though there were certainly other important economic issues, including both inflation and the ERM crisis. There is some interesting work to be done comparing (asymmetric) reactions to different economic issues within and across countries; this is left for future work.

<sup>13</sup>MORI results are not simply substituted for Gallup results in months with missing data, since the Gallup data used here include only first responses, and MORI data lump together multiple responses. Rather, interpolated data is generated using predictions from a regression where the Gallup series is regressed on the MORI series.

<sup>14</sup>There are reasons to believe that the relationship between opinion series and the economy should be modeled as an error-correction model. ECMs are not used here mainly for the sake of consistency with preceding models of media content, and the advantages of generating predictions in levels rather than changes. To be sure, all public opinion models were modeled using a ECM, with current changes and lagged levels of all variables. The effect of current changes were in each case similar to those Table 3. Results are available upon request from the author.

<sup>15</sup>For instance, past work suggests that in the United Kingdom and the United States the rate of inflation contributes more to economic expectations than does unemployment (e.g., Goidel and Langley 1995; MacKuen, Erikson, and Stimson 1992; Nadeau et al. 1999); that interest rates are additionally important in driving expectations in the United Kingdom (e.g., Sanders 1999); and that the industrial production index can sometimes have an effect (Krause 1997).



TABLE 3 The Economy, Media Coverage, and Public Opinion

Ind Variables	Dependent Variable			
	MIP Responses <sub>t</sub>		Pessimism <sub>t</sub>	
Chg Economy <sub>t</sub> <sup>a</sup>	12.881* (3.771)	—	2.854* (1.248)	—
Chg Economy (Worse) <sub>t</sub> <sup>a</sup>	—	20.466* (6.358)	—	8.207* (2.684)
Chg Economy (Better) <sub>t</sub> <sup>a</sup>	—	5.103 (6.087)	—	3.325* (1.822)
Chg Media <sub>t</sub> <sup>b</sup>	.053 (.058)	—	.183* (.101)	—
Chg Media (Worse) <sub>t</sub> <sup>b</sup>	—	.080 (.104)	—	.459* (.173)
Chg Media (Better) <sub>t</sub> <sup>b</sup>	—	.033 (.111)	—	-.110 (.176)
Σ Dependent <sub>t-1,k</sub> <sup>c</sup>	.996* (.021)	.993* (.021)	.740* (.059)	.721* (.054)
Constant	.037 (.801)	.720 (1.006)	2.882* (.954)	.750 (1.519)
N	163	163	167	167
Rsq/Adj Rsq	.937/.935	.941/.938	.574/.562	.616/.601
Durbin's <i>h</i>	3.867*	1.096	.155	.203

Note: Cells contain OLS regression coefficients with standard errors in parentheses.

<sup>a</sup>Chg in Economy is monthly changes in the unemployment rate for MIP models, and monthly changes in the leading index for Pessimism models.

<sup>b</sup>Chg Media is monthly negative media coverage of unemployment MIP models, and monthly negative media coverage of both unemployment and inflation for Pessimism models.

<sup>c</sup> $k = 4$  for MIP models, and  $k = 2$  for Pessimism models.

\* $p < .05$ .

clear test of the possibility that expectations respond asymmetrically to the economy in general. Also for the sake of parsimony, this estimation excludes controls for both election periods and the mid-1992 Exchange Rate Mechanism (ERM) crisis.<sup>16</sup>

Results are presented in Table 3. The symmetric model of MIP responses is presented in the first column. Here, a one-standard deviation (.12) increase in unemployment is associated with an average 1.5-point increase in MIP responses. Media content has no discernible effect.

The model allowing for asymmetric responsiveness in MIP responses is shown in the second column, and the estimation quite clearly shows asymmetric responsiveness to the economy. The effect of an upward shift in unemployment is roughly four times

the magnitude of a similar downward shift. Indeed, the effect of a downward shift is not significantly different from zero.<sup>17</sup> Media coefficients also show signs of asymmetric responsiveness, as the coefficient for upward shifts in negative news is more than twice the size of the coefficient for downward shifts. Neither media coefficient is significant in this model, however.<sup>18</sup>

<sup>17</sup>An F-test of the null hypothesis that the coefficients for *Eco (Worse)* and *Eco (Better)* are equal is 2.43,  $p = .12$  ( $df = 1,155$ ).

<sup>18</sup>More significant effects—and evidence of the asymmetric effects of news content—can be found with a slight adjustment of this model. Specifically, we can first estimate media coverage as a function of unemployment and then use the residuals as the media measure in Model 4. That is, replace the basic media measure with a measure that is the number of negative media articles above (or below) what we would expect given unemployment at the time. Doing so eliminates the (slight) collinearity between the unemployment rate and media coverage; viewed differently, it also goes some way towards solving the endogeneity built into Model 4—the economy drives media content, and both are included as independent regressors here. Interpretation of these results is slightly more complicated, but they do provide additional evidence of significant and asymmetric media effects. Results are available from the author upon request.

<sup>16</sup>Nadeau et al. (1999) show that expectations tend to go up at election times, and Sanders (1999) finds that the ERM crisis had a temporary but significant effect on expectations in the United Kingdom. Controls for these events are or approach significance when included in these models, but they do not substantively change other coefficients. Full results are available in the online appendix at <http://www.journalofpolitics.org>.

Estimates for Pessimism are presented in the third and fourth columns of Table 3.<sup>19</sup> In the third column, negative changes in the economy push Pessimism upwards, as do negative news stories. In the fourth column, there is evidence that both effects are asymmetric. Negative shifts in the economy have more than twice the effect of positive shifts; increases in negative media content have a significant and considerable effect, while decreases have no significant effect whatsoever.<sup>20</sup>

Table 3 indicates a significant asymmetry in opinion responsiveness to both economic conditions and economic news. Indeed, results in Tables 1 through 3 suggest that the effects of negative swings in the economy are magnified several times over. Specifically, an increase in unemployment first provokes an asymmetrically large increase in negative media content. Then, both this media content and the actual unemployment rate have asymmetrically large effects on public concern.

This dynamic is illustrated in Figure 2. The first two panels show the effect of one-standard deviation (.64) shift in the leading index on the number of negative articles (based on results in Table 2). The symmetric model suggests that such a shift leads to a concurrent increase of about one negative article; the effect of a positive shift leads to a similar decrease. The story is quite different using a model that allows for asymmetry: the concurrent effect of a negative shift increases to about three additional articles, and there is no discernible effect of a positive shift.

The impact of the same shift in the leading index on Pessimism is displayed in the bottom two panels of Figure 2. Here, effects of both the economy and media are taken into account; that is, the estimates incorporate both (a) the direct effect of the leading index on expectations (from Table 3), and (b) the effect that the leading index has on media content, which then affects expectations (from Tables 2 and 3).

The figure accordingly illustrates three possibilities. In the first case, both media and expectations respond symmetrically, and the overall estimated effect is a concurrent 3-point drop or rise in expectations. When expectations are allowed to respond asymmetrically to both the economy and media, but

media are restricted to symmetric responsiveness, the overall effect of a negative shift in the economy increases to about a 5.5-point increase in Pessimism, while the effect of a positive shift declines to about a 2-point decrease. When both expectations and media are allowed to respond asymmetrically, the effect of a positive shift remains about 2 points, while the effect of a negative shift in the economy effect is about a 6.5-point increase in Pessimism. (And recall that by this point the effects of positive shifts are statistically insignificant.) Media coverage thus serves to enhance the asymmetry in public responsiveness.

Note that Figure 2 serves as a reminder of why we are not experiencing an endless decrease in economic expectations: effects decay over time. All of the models explored here focus on asymmetry in responsiveness to current economic shifts, and evidence here suggests that negative responses will far outweigh positive responses in the short term. But both effects—*ceteris paribus*—decay over time, at a rate determined by the coefficient for the lagged dependent variable. These models do not suggest that public perceptions of the economy will endlessly spiral downwards over the long term, then, only that negative information has much greater short-term impact than does positive information.

## Discussion and Conclusions

Public responses to negative economic information are much greater than are public responses to positive economic information. The same trend is evident in mass media content, and this content serves to enhance the asymmetry in public responsiveness. In the preceding estimates of economic Pessimism, media content increases the (concurrent) public reaction to negative information by about 16%. Mass media respond asymmetrically to economic information, and the public then responds asymmetrically to both media content and the economy itself.

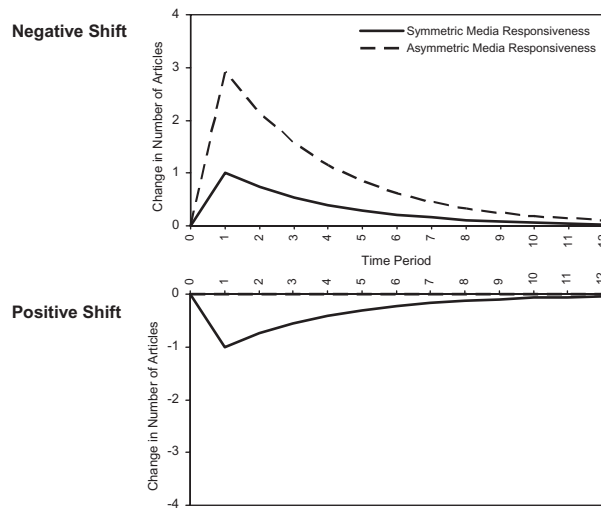
A 16% increase is significant but not enormous, of course, so it is worth noting that much of the asymmetry in opinion is in fact a function of individuals' reactions to the economy itself, rather than the effect of media coverage. The asymmetry in public opinion is considerable. Nevertheless, media coverage does matter here and does serve to enhance the effect of negative information. And note that because most individuals have direct experience with the economy, the potential for news impact is likely lessened (e.g., Ball-Rokeach and DeFleur 1982). Media may thus enhance asymmetry more in domains for which indi-

<sup>19</sup>Note that the Pessimism series exhibits less autocorrelation than the MIP series. Accordingly, only two lags of the dependent variable are used in the Pessimism models. See Note 8.

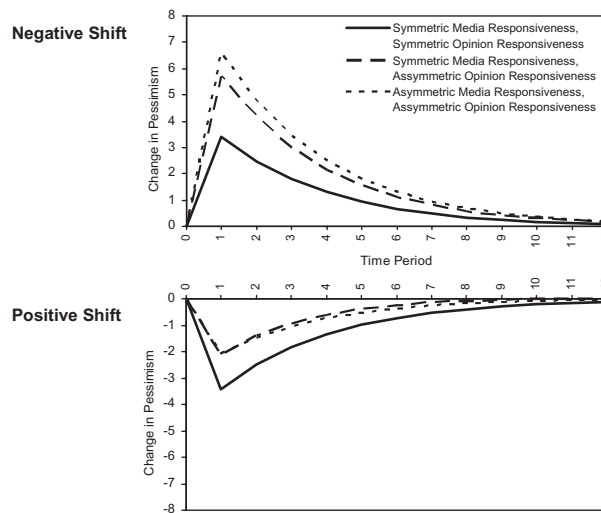
<sup>20</sup>An F-test of the null hypothesis that the coefficients for *Eco* (*Worse*) and *Eco* (*Better*) are equal is 1.66,  $p = .19$  ( $df = 1, 154$ ); for positive and negative media coefficients,  $F = 2.21$ ,  $p = .13$  ( $df = 1, 154$ ).

FIGURE 2 The Net Effect of Asymmetric Responsiveness

**Effect of One-Standard Deviation Shift in Leading Indicators on Negative Media Content**



**Effect of One-Standard Deviation Shift in Leading Indicators on Pessimism**



viduals have a greater reliance on media content. The current work may accordingly present a conservative estimate of the overall extent to which media tend to enhance the effect of negative over positive information.

Only further research will tell. Asymmetries in media and opinion responsiveness have relevance for a considerable body of work, including research on agenda setting, issue priming, government popularity, and the link between public preferences and policy. It is not the case that the important relationships have not been identified—in preceding models, accounting for asymmetry results in only a small increase in predictive power. Nevertheless, the exact nature of responsiveness in much of this work

deserves further study. So too does the extent of asymmetry in egocentric economic expectations. If it is true that media effects—and particularly media effects on asymmetric responsiveness—are smaller in those domains which individuals experience directly, then opinions about one’s own economic situation may not show the same asymmetry as do opinions about the country’s economy. As this stage, we simply do not know.

More broadly speaking, asymmetric responsiveness has potentially considerable consequences for economic policy. If the public tends to be overly pessimistic about future unemployment, for instance, responsive governments will tend to target unemployment too much (Dua and Smyth 1993). Short-

run reductions in the unemployment rate will thus lead to higher inflation in the long term. Indeed, asymmetries in economic expectations are most significant given not just this series' prominence in political research, but accumulated evidence that expectations are a significant predictor of the economy itself (e.g., Batchelor and Dua 1992; Curtin 1982; Linden 1982; Roper 1982).

There is also a more significant normative question regarding the potential benefits of asymmetric responsiveness. Well-functioning representative democracies likely require a certain degree of problem identification. And individuals may quite reasonably feel that punishing for errors is more critical to good governance than is rewarding for not-errors. A negativity bias may thus be an important feature of political systems. Certainly, we should give further consideration to the potentially negative and positive functions of asymmetric responsiveness in representative democracies.

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