

Disentangling Economic News Effects: The Impact of Tone, Uncertainty, and Issue on Public Opinion

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This study examines the effects of economic news on people's self-reported interest and their evaluations of the national economy while distinguishing among the tone of the content, the level of uncertainty with which economic information is presented, and the issues covered in the news. Analyses of experimental data ($N = 2,168$) show that negative news about inflation is consumed with the most interest. Also, the negative effect of bad economic news on people's economic evaluations is strongest among news consumers who are most interested in the news. The results challenge conventional wisdom about the moderating role of issue obtrusiveness in media effects research. Furthermore, the focus on interactions reveals that typical economic news features shape public opinion not only in isolation and but even more so when their impacts are combined.

Keywords: economic news, media effects, negativity bias, economic issues, experiment

Over the past decades, research on economic news effects has developed into a thriving field of study. Scholars have shown how economic news shapes public opinion, above and beyond the impact of economic trends in the real world. Whether the focus is on consumer confidence (Boydston, Highton, & Linn, 2018; Doms & Morin, 2004; Hollanders & Vliegthart, 2011), economic expectations (e.g., Soroka, 2014), or political preferences (Sheafer, 2008), the way journalists cover the economy is an important predictor of public opinion. Most of this research relies on longitudinal data, offering the opportunity to explain trends over time and to examine agenda-setting and framing effects. Less scholarly attention has been devoted to the mechanisms driving these effects and their contingency on specific content characteristics. This experimental study contributes to this area of research by disentangling economic news effects and by examining these different effects on news consumers' levels of interest as well as on their evaluations of the national economy.

Relying on experimental data ($N = 2,168$), two questions guide the study presented in this article: (1) How do the tone and the level of (un)certainly with which economic information is presented affect

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levels of reported interest and economic evaluations among news consumers, and to what extent are these media effects contingent on the issue addressed in the news? (2) To what extent are news consumers' economic evaluations moderated by their level of interest in economic news? Disentangling economic news effects allows for the analysis of content features in isolation, and, more importantly, it enables the examination of interaction effects. Because most research focuses solely on the effect of tone, it remains an open question whether this effect is contingent on the type of issue being covered as well as how the impact of uncertainty in economic news coverage differs across issues in the news.

In sum, I aim to validate and extend existing knowledge about economic news effects by zooming in on the typical content features of economic news, analyzing their effects in isolation as well as in interaction, and examining the moderating impact of self-reported interest.

Economic News and Public Opinion

Positive and Negative Sentiment

In general, people form their economic opinions on the basis of their own economic experiences and on the way the media report about the economy (Mutz, 1992). The information provided by these two sources may diverge because of a negativity bias or subjectivity in news reporting, inaccurate or incomplete information available to journalists, or general resource and agenda limitations of the media (Boydston et al., 2018; Soroka, 2006). As a result, the mediated version of economic reality is often different from one's experienced economic reality (e.g., Harrington, 1989), making economic news and its effects on public opinion a relevant research topic.

The impact of economic news is well studied. A vast and growing body of empirical work finds that economic news shapes people's opinions about the economy—most notably through the tone of the content (e.g., Blood & Phillips, 1995, 1997; Boydston et al., 2018; Soroka, 2014). Studies have shown that news about recession leads to more economic pessimism among citizens, which is reflected in lower levels of consumer confidence (e.g., Blood & Phillips, 1995; Doms & Morin, 2004; Hollanders & Vliegenthart, 2011; Wu, Stevenson, Chen, & Guner, 2002). Although the majority of this work is based on aggregate-level data, the expectation is that this relationship also applies to the individual level.

Studies that distinguish between positive and negative economic news often point to asymmetric public responsiveness whereby the negative effect of negative news is much stronger than the positive effect of—equally strong and equally likely—positive news (e.g., Damstra & Boukes, 2018; Hester & Gibson, 2003; Soroka, 2006; but see Boomgaarden, Van Spanje, Vliegenthart, & de Vreese, 2011). Put differently, people become more pessimistic when they are exposed to negative economic information than they become optimistic when exposed to positive economic information. This positive-negative asymmetry effect applies across research fields (for an excellent overview, see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). The dominant explanation for the effect stems from evolutionary theory. The sensitivity to negative information is considered an adaptive response of humans to their physical and social environments (Baumeister et al., 2001). Avoiding bad is more crucial to survival and reproduction than is pursuing good, so people assign more weight to negative than to positive information. This inclination toward the detection

of threats is supported by physiological studies that demonstrate larger-amplitude brain responses (e.g., Ito, Cacioppo, & Lang, 1998) and more attentive reactions when respondents are exposed to negative versus positive stimuli (Lang, Newhagen, & Reeves, 1996; Shoemaker, 1996). Based on this research, the expectation here is that negative economic news is consumed with greater interest than is positive economic news. Furthermore, people who consume news with more interest are likely to invest more cognitive resources and to process the information more thoroughly. As a result, news effects may be stronger (Elenbaas, Boomgaarden, Schuck, & de Vreese, 2013). The above considerations are formalized into the first set of hypotheses:

H1a: Negative economic news leads to higher levels of self-reported interest among news consumers.

H1b: Negative economic news leads to more pessimistic economic evaluations among news consumers.

H1c: The higher the level of self-reported interest with which people consume news, the stronger the negative effect of negative news will be on their economic evaluations.

Uncertainty in the News

Recent work suggests that, in addition to the impact of tone, levels of uncertainty in the news also affect people's economic perceptions (e.g., Van Dalen, de Vreese, & Albaek, 2017). Uncertainty refers to the ambiguity with which economic information is presented, which is not a mere reflection of economic uncertainty in the real world but is often a product of journalistic routines. Ambiguity might be related to journalists' aim of balancing opposing claims in their news reports (Stocking & Holstein, 2009), but it might also be used as a way to capture the audience's attention (Friedman, Dunwoody, & Rogers, 1999). Svensson, Albaek, van Dalen, and de Vreese (2017) find that exposure to ambiguous economic information leads to higher levels of uncertainty among citizens and, as a result, also to more economic pessimism. Van Dalen and colleagues (2017) find a direct effect of uncertainty in economic news on consumer confidence, concluding that uncertainty indeed fosters pessimism, above and beyond the impact of tone or real economic trends.

In explaining this media effect, scholars often refer to Ellsberg's (1961) paradox, which states that people tend to be ambiguity-averse. They prefer a bet with a known probability distribution than one with an unknown probability distribution—even if the distribution of the known alternative is not favorable to them. Uncertainty evokes fear (Patt & Weber, 2014), and, although uncertainty might also evoke hope, the association with fear tends to be stronger (Van Dalen et al., 2017, pp. 113–114). Based on Ellsberg's seminal work in decision theory, I expect economic news that presents information with a high level of uncertainty will lead to more pessimistic economic evaluations, above and beyond the impact of tone.

Similar to people's preoccupation with negative information, people are more responsive to information with high levels of uncertainty because of the potential to activate fear. As a result, I expect uncertain news to be consumed with higher levels of interest. When an economic news item provokes interest among news consumers, more time is taken to digest and process the information. News consumers think about possible scenarios, and, as a response to the uncertainty presented in the news, they tend to

opt for a pessimistic view to be on the safe side (Ellsberg, 1961). Taken together, these theoretical considerations lead to the second set of hypotheses:

H2a: Economic news in which information is presented with a high level of uncertainty leads to higher levels of self-reported interest among news consumers.

H2b: Economic news in which information is presented with a high level of uncertainty leads to more pessimistic economic evaluations among news consumers.

H2c: The higher the level of people's self-reported interest in the news, the stronger the negative effect of uncertainty on their economic evaluations will be.

Economic Issues in the News

Like the economy itself, economic news is varied. Items about regional unemployment, national stock markets, or international trade wars all fall under the heading of economic news. Although some scholarly consensus exists about media effects being contingent on the type of (economic) issue being covered in the news (e.g., Brosius & Kepplinger, 1990; Soroka, 2002), no univocal agreement exists with regard to the underlying mechanisms.

When scholars distinguish among different economic issues in the news, many refer to Zucker's (1978) obtrusiveness hypothesis. The more obtrusive an issue is to people in their daily lives, the smaller media effects tend to become. People are most susceptible to economic news about issues with which they have no or minimal direct experiences, because in such a situation with no alternative sources of information, people are most dependent on the media (Ball-Rokeach, 1985, 1998). The question remains to what extent the economy in general should be seen as typically obtrusive. Some scholars consider it "a classic doorstep issue, capable of shaping public opinion through real-world experiences" (Haller & Norpoth, 1997, p. 573); therefore, "no direct, intervening, or any other effect of the media is necessary" (Boydston et al., 2018, p. 2). However, this notion applies only to the most tangible dimensions of the economy, such as inflation or unemployment, which are generally labeled as obtrusive (e.g., Blood & Phillips, 1997; Ju, 2014; Kalogeropoulos, 2018; Soroka, 2002). Macroeconomic trends, such as gross domestic product (GDP) developments, federal debts, or trade balances, are all rather unobtrusive phenomena. Unfortunately, work that systematically compares the moderating role of different types of economic issues is scarce. Soroka (2002) examines the (political) agenda-setting effects of different issues in the news and finds stronger effects for news about debts/deficits than for news about inflation. In contrast, others find that inflation news provokes stronger effects than news about government spending (e.g., Zhu & Boroson, 1997).

A different view is offered by Yagade and Dozier (1990), who argue that media effects are stronger when the news deals with issues that are concrete rather than abstract. For their thoughts and opinions to be affected, people need to be able to visualize the issues they read about; as a result, news about abstract topics like federal budget deficits is less likely to affect public opinion. While not presented as a direct challenge to the obtrusiveness hypothesis, it has been argued that concreteness and obtrusiveness are in reality often correlated (as are abstractness and unobtrusiveness; see Zhu & Boroson, 1997, p. 73). The

idea of concrete economic issues enhancing news effects is in line with empirical work that examines the impact of the tone of news dealing with unemployment (e.g., Kalogeropoulos, 2018) or inflation (e.g., Lamla & Lein, 2014). These issues are thought to attract more public attention because they are easier for people to imagine (Conover, Feldman, & Knight, 1986) and because they speak to people's personal interests (Sears & Funk, 1990).

In sum, the literature provides ground for different expectations: Obtrusive economic issues both minimize news effects (because more firsthand experiences are available to people) and magnify news effects (because they are more concrete and appealing to people). Similarly, one could argue that news about a typically obtrusive issue (e.g., inflation) is consumed with less interest because people already have some issue-related knowledge at their disposal, making mediated information less engaging to them. On the other hand, one could anticipate that news about an obtrusive issue provokes more interest among news consumers because it is easy to imagine and processing the mediated information requires less cognitive effort. To my knowledge, the moderating impact of economic issues in the news has not yet been put to an experimental test. This study contrasts news about "the quintessential obtrusive issue" (Soroka, 2002, p. 267) of inflation with news about GDP trends and a foreign airline company. Because the literature provides different theoretical cues, I rely on research questions to explore whether and to what extent economic news effects are contingent on the issues that are covered. More specifically, I explore whether the impact of tone (H1a and H1b) and the impact of uncertainty H2a and H2b) differ when the news deals with different issues, which leads to the following research questions:

RQ1: Is the effect of the tone of economic news on people's levels of self-reported interest (H1a) and on their economic evaluations (H1b) contingent on the economic issues addressed in the news?

RQ2: Is the effect of uncertainty in economic news on people's levels of self-reported interest (H2a) and on their economic evaluations (H2b) contingent on the economic issues addressed in the news?

Data and Method

To test the hypotheses and to answer the research questions, an online survey-embedded experiment was conducted from April 30 to June 26, 2018. During this period, the Dutch economy witnessed modest economic growth (Mares, 2019). A sample of 2,191 Dutch adults was recruited by I&O Research, an ISO-certified research company. The questionnaire was completed by 2,168 people. Participants' ages range from 20 to 89 years ($M = 64.59$, $SD = 10.49$), and 31.41% of them are women and 68.59% are men. With regard to the highest completed educational level, 14.99% of participants are in a category of primary education or lower, 63.10% completed a vocational education (ranging from intermediate to higher vocational training), and 21.91% have a bachelor's degree or higher. For political preferences, 41.89% of participants report a right-wing political preference, 14.03% have neither a right- nor a left-wing political preference, and 44.08% indicate a left-wing political preference.²

² Because the sample is skewed to older and male participants, all analyses are weighted for age and gender, but also for education level and political preferences.

Because research indicates that especially people's sociotropic economic opinions are affected by economic news (e.g., Boomgaarden et al., 2011), economic evaluations are measured with two items tapping into people's evaluations of the national economy ($\alpha = .85$). The questions ask participants how they perceive the state of the national economy over the last 12 months (retrospective) as well as for the next 12 months (prospective). Both items are measured on an 11-point scale, as is the new constructed variable ($M = 7.04$, $SD = 1.35$). The level of interest is measured with six items ($\alpha = .86$). The items measured the degree to which (1) participants considered the article interesting; (2) participants felt motivated when reading the article; (3) the information could capture the participants' attention; (4) participants read the article with great interest; (5) participants were thinking of other things when reading the article; and (6) whether participants were easily distracted when reading the article.³ The six items were measured on an 11-point scale that captures the participants' general level of interest in the economic news item ($M = 6.58$, $SD = 1.82$).

Experimental Design

After providing informed consent, the 2,168 participants were randomly assigned to one of 12 conditions. Randomization checks confirmed that participants were equally distributed across conditions in terms of age, gender, and level of education.⁴ I use a 2 (negative vs. positive tone of content) $\times$ 2 (high vs. low level of uncertainty) $\times$ 3 (obtrusive/concrete vs. unobtrusive/abstract vs. control economic issue) between-subjects factorial design. Participants read an economic newspaper article that was manipulated on three aspects: (1) the tone of the article; (2) the level of (un)certainty with which the information was presented; and (3) the economic issue addressed in the article. The number of participants per condition ranged from 143 (condition 1) to 205 (condition 6; $M = 182.58$, $SD = 15.81$).

Stimuli

Twelve different versions of an economic newspaper article were created, based on a real economic news article published on the most-read Dutch news website, NU.nl, to meet the requirement of external validity. The items were manipulated in the following ways. Starting with the different economic issues, four articles were crafted that address inflation and purchasing power as a measure of a typical obtrusive economic issue (Soroka, 2002). Four articles about GDP trends were created to measure a typically unobtrusive issue (Ju, 2014). Finally, four items were constructed as a control condition discussing the quarterly figures of Kenya Airlines, a distant company with no direct connections to the domestic economic situation in the Netherlands at the time. Each article, regardless of issue, followed the same format. It started with a presentation of the figures (relating to inflation, GDP, or foreign company revenues) from the first quarter of the year, followed by a comparison with figures from the first quarter of the previous year. In six news articles (two per type of issue), the first-quarter figures of the current year were less favorable than the first-quarter figures of the previous year, creating the negative tone condition. In the other six news articles, the first-quarter figures of the current year were better than the figures from the year before, creating the positive tone condition. Thus, the tone of news refers to actual positive or negative economic

³ See Appendix A for an overview of all items and their exact wording.

⁴ The results of the randomization checks are available on request.

developments instead of valenced framing by journalists. The discussion of the figures and the prognosis for the remainder of the year were both manipulated to present information with high or low levels of uncertainty. In the certain condition (six articles), the quarterly figures were in line with previous expectations, and the prognosis for the rest of the year was said to be certain. In the uncertain condition (six articles), the quarterly figures were unexpected, and the prognosis for the rest of the year remained unclear (references to uncertainty were based on the search terms developed by Van Dalen et al., 2017, p. 119).⁵ All 12 conditions are summarized in Table 1.

Table 1. Level of Reported Interest and Economic Evaluations per Condition.

Condition	Tone	(Un)certainty	Issue	Level of reported interest M (SD)	Economic evaluations M (SD)
1 ($n = 143$)	Negative	Certain	GDP	6.80 (1.77)	6.89 (1.34)
2 ($n = 196$)	Negative	Uncertain	GDP	6.63 (1.81)	6.90 (1.18)
3 ($n = 175$)	Positive	Certain	GDP	6.96 (1.53)	7.26 (1.12)
4 ($n = 173$)	Positive	Uncertain	GDP	6.56 (1.77)	7.21 (1.23)
5 ($n = 182$)	Negative	Certain	Inflation	7.35 (1.77)	6.69 (1.52)
6 ($n = 205$)	Negative	Uncertain	Inflation	7.19 (1.70)	6.57 (1.55)
7 ($n = 178$)	Positive	Certain	Inflation	6.79 (1.67)	6.92 (1.50)
8 ($n = 184$)	Positive	Uncertain	Inflation	6.67 (1.61)	6.91 (1.18)
9 ($n = 169$)	Negative	Certain	Kenya	6.19 (1.97)	7.28 (1.37)
10 ($n = 186$)	Negative	Uncertain	Kenya	5.99 (1.77)	7.25 (1.42)
11 ($n = 201$)	Positive	Certain	Kenya	6.09 (1.84)	7.39 (1.20)
12 ($n = 176$)	Positive	Uncertain	Kenya	5.74 (1.87)	7.31 (1.22)

A pilot study ($N = 133$) was conducted to check whether the manipulations worked as intended. Participants were asked, "Thinking back to the news article you just read, on a scale from 0 (*very negative*) to 10 (*very positive*), to what extent do you consider the information in the article as being negative or positive?" Participants who were exposed to the negative condition perceived the news item also as more negative ($M = 3.45$, $SD = 1.52$) than those who were exposed to the positive condition ($M = 6.86$, $SD = 1.74$; $p < .000$). Next, participants were asked, "On a scale from 0 (*high level of uncertainty*) to 10 (*high level of certainty*), to what extent was the economic information in the news article presented with a level of (un)certainty?" Participants in the uncertainty condition considered the information as being presented with uncertainty ($M = 6.72$, $SD = 1.72$) more often than those in the certainty condition ($M = 4.18$, $SD = 1.98$; $p < .000$). For issue obtrusiveness, participants were asked, "To what extent could you relate the economic issue in the news article to your personal economic situation?" Those who were exposed to inflation news indicated that they could relate the issue to their own situation more ($M = 3.93$, $SD = 2.23$) than

⁵ Appendix B provides an example of the original Dutch stimulus material as well as a version translated to English.

those who were exposed to GDP news ($M = 3.49$, $SD = 2.42$; $p < .000$). Together these findings confirm that the article manipulations were effective.⁶

Table 1 presents an overview of all experimental conditions, together with the number of participants and the means of the two dependent variables. There is a significant difference in self-reported interest between participants who were exposed to negative news ($M = 6.70$, $SD = 1.86$) and those who were exposed to positive news ($M = 6.46$, $SD = 1.77$); $t = -3.14$, $p = .002$. Also, there is a significant difference in levels of self-reported interest between participants who were exposed to news with high certainty ($M = 6.68$, $SD = 0.06$) and those exposed to news with low certainty ($M = 6.49$, $SD = 0.05$); $t = 2.50$, $p = .012$. Finally, the difference in interest between participants who read about inflation ($M = 7.02$, $SD = 0.06$) and those who read about GDP developments ($M = 6.80$, $SD = 1.68$) is significant; $t = -3.14$, $p = .002$. People find the inflation news item most interesting. Least interesting to people is the item about Kenya Airlines ($M = 6.00$, $SD = 0.07$). The low mean differs significantly from the mean interest in the other conditions; $t = 10.99$, $p < .000$.

With people's evaluations of the national economy, there is a significant difference between the mean in the negative condition ($M = 6.92$, $SD = 0.04$) and the mean in the positive condition ($M = 7.17$, $SD = 0.04$); $t = 4.34$, $p < .000$. Evaluations do not significantly differ across the uncertainty conditions. Finally, participants who were exposed to inflation news report more pessimistic economic evaluations ($M = 6.77$, $SD = 0.05$) than those reading about GDP ($M = 7.08$, $SD = 0.05$), and this difference is significant; $t = 4.35$, $p < .000$. Most optimistic are participants who read about Kenya Airlines ($M = 7.31$, $SD = 0.05$). This mean is significantly higher than the rest, $t = -6.44$, $p < .000$. Figure 1 and Figure 2 illustrate the means of the dependent variables across all conditions.

⁶ The same manipulation checks were applied to the final sample, generating the same results with the exception of perceived obtrusiveness. The difference between those who were exposed to inflation news and those who were exposed to GDP news was in the intended direction; however, with a p value of .15, the difference was not significant (two-tailed test). The control condition of foreign company news (Kenya Airlines) was only included in the final version of the experiment (not in the pretest). Manipulation checks on the final sample revealed that participants who were exposed to the control condition could relate the issue in the news less to their own situation ($M = 3.74$, $SD = 2.34$) than those who were exposed to the other conditions ($M = 5.65$, $SD = 2.33$; $p < .000$). Also, those exposed to inflation news could relate the issue more to their own situation ($M = 5.73$, $SD = 2.35$) than those exposed to GDP or Kenya Airlines news ($M = 4.62$, $SD = 2.49$; $p < .000$).

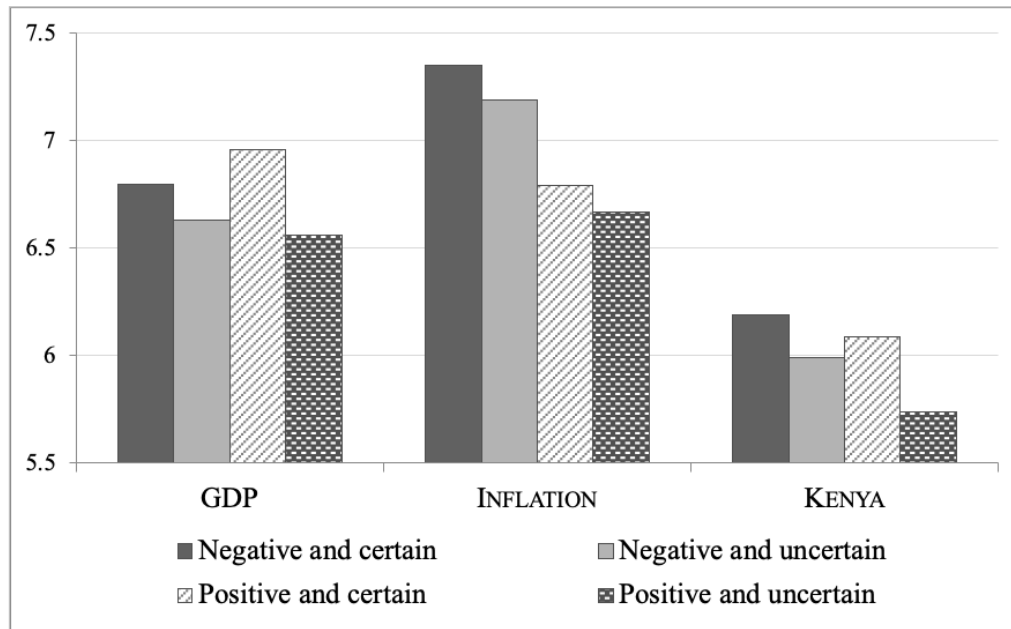


Figure 1. Mean scores of self-reported interest across experimental conditions.

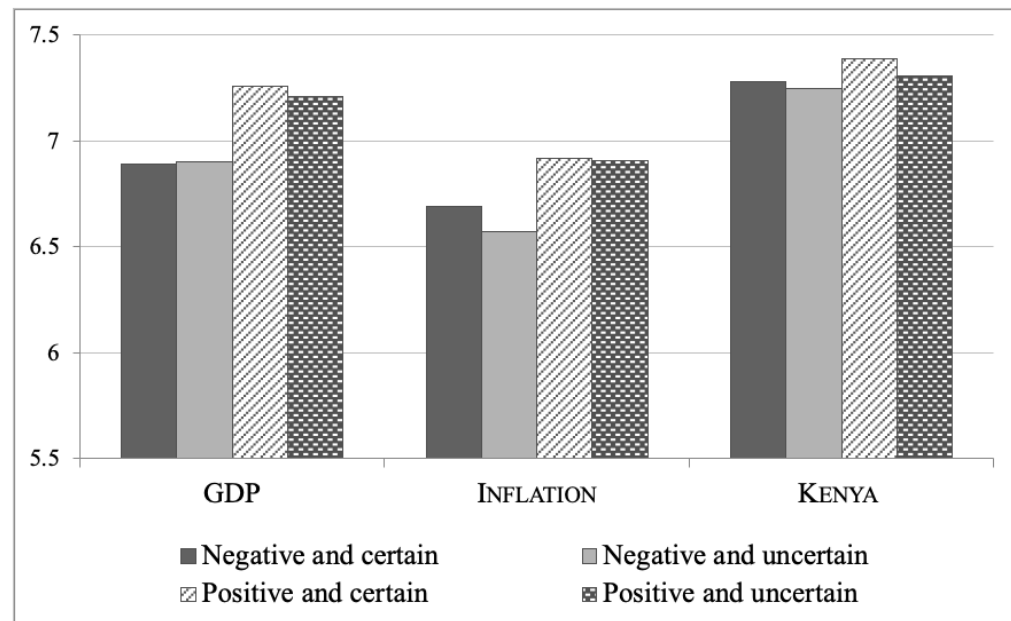


Figure 2. Mean scores for economic evaluations across experimental conditions.

Results

Economic News and Levels of Self-reported Interest

The influence of specific economic news features is examined by estimating ordinary least squares regression models with dummy variables for the various manipulated content features.⁷ Table 2 presents the results, starting with the impact of negative tone and uncertainty on levels of interest. Model 1A shows that negative news leads to higher interest among news consumers, therefore supporting Hypothesis 1a. The negative effect of uncertainty in the news runs counter to the theoretical expectation, leading to rejection of Hypothesis 2a. People report lower levels of interest when they are exposed to news presented with higher levels of uncertainty.

Table 2. Ordinary Least Squares Regression Analyses Predicting Self-reported Interest and Economic Evaluations.

	Dummy variable: level of self-reported interest		Dummy variable: economic evaluations		
	Model 1A	Model 1B	Model 2A	Model 2B	Model 2C
Negative tone	.25 (.08)**	.07 (.09)	-.25 (.06)***	-.21 (.07)**	.27 (.21)
Level of uncertainty	-.22 (.08)**	-.28 (.09)**	-.06 (.06)	-.04 (.07)	.29 (.21)
Inflation issue		.69 (.14)***		-.48 (.11)***	-.59 (.11)***
GDP issue		.74 (.09)***		-.24 (.07)**	-.34 (.07)***
Negative tone × inflation		.47 (.16)**		-.08 (.12)	-.09 (.12)
Uncertainty × inflation		.14 (.16)		-.03 (.12)	-.02 (.12)
Interest					.19 (.03)***
Negative tone × interest					-.08 (.03)*
Uncertainty × interest					-.04 (.03)
Constant	6.57 (.07)***	6.11 (.09)***	7.20 (.05)***	7.43 (.07)***	6.26 (.19)***
R ²	.01	.07	.01	.04	.07
Akaike information criterion	4,028	3,970	3,432	3,408	3,379
N	2,168	2,168	2,168	2,168	2,168

Note. Values are unstandardized beta coefficients with standard errors in parentheses.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed test).

Exploring the moderating role of economic issues in the news, Model 1B includes interaction terms demonstrating that people consider negative news more interesting when it deals with inflation (or read

⁷ I also conducted analysis of variance models, which yield the same results. To facilitate straightforward interpretation, all analyses (estimating self-reported interest and estimating economic evaluations) are presented here on the basis of ordinary least squares regression models. However, the results are the same when analyses of variance are applied.

inflation news with more interest when the tone is negative) and that the type of issue does not alter the negative impact of uncertainty. Regardless of the issue in the news, higher levels of uncertainty in the presentation of economic information leads to lower levels of interest. An interaction term of the GDP issue and negative tone (not displayed here) also yields a significant and positive result; however, when both interaction terms are included simultaneously, only the interaction between inflation news and negative tone remains significant.

Economic News and Economic Evaluations

To examine the impact of economic news features on people's evaluations of the national economy, a second set of analyses is run. Model 2A tests the main effects of negative tone and uncertainty. First, and in line with the theoretical expectations, negative news leads to more pessimistic economic evaluations, confirming Hypothesis 1b. The level of uncertainty in a news item does not affect people's economic evaluations, which runs counter to the theoretical expectation. Therefore, Hypothesis 2b is rejected.

Model 2B adds economic issues to the analysis and demonstrates that the effects of tone and uncertainty are not contingent on the issues in the news. Interestingly, the main effects of issues are significant: Both have a negative effect on news consumers' economic evaluations, compared with the baseline category (Kenya Airlines news item). In the final analysis, presented in Model 2C, negative tone and uncertainty are interacted with level of interest. The significant and negative interaction term negative tone $\times$ interest indicates that the negative effect of negative economic news is stronger among those who consume the news with greater interest. In line with the literature, I conclude that negative news captures the attention of news consumers more than positive news does. And among those who consume the news with higher levels of interest, the impact of the tone becomes even stronger, leading to more economic pessimism. This finding supports Hypothesis 1c. The (insignificant) interaction term of uncertainty $\times$ interest shows that the (insignificant) impact of uncertainty in the news on people's economic evaluations is not dependent on the level of interest, therefore rejecting Hypothesis 2c. Although all models exhibit rather low levels of explained variance (R^2 not higher than .07), indicating only modest news effects, the increasing R^2 as well as the decreasing Akaike information criterion scores imply that adding issues and interest to the analysis improves the models' explanatory power as well as data fit.

Visualizing the Contingency of News Effects

As demonstrated by Model 1B (Table 2), the impact of the tone of economic news on the level of interest among news consumers is contingent on the issue being covered. Put simply, people are most attentive to the negative tone of economic news content when the news deals with inflation (compared with the two other issues).⁸ Figure 3 illustrates this interaction effect: For news dealing with macroeconomic trends or a foreign airline company, the tone of the content does significantly affect news consumers' level of interest, illustrated by the overlapping confidence intervals in the left figure (note that the y axis ranges

⁸ Additional analyses (not displayed here) indicate that results are the same when excluding items about Kenya Airlines (using only GDP news as the baseline category) and when excluding items about GDP (using only Kenya Airlines news as the baseline category).

from 6.0 to 7.5). However, when the news deals with inflation, people are substantially more interested in negative news than in positive news, which is illustrated by the steeper trend line in the right figure and the confidence intervals that do not overlap.

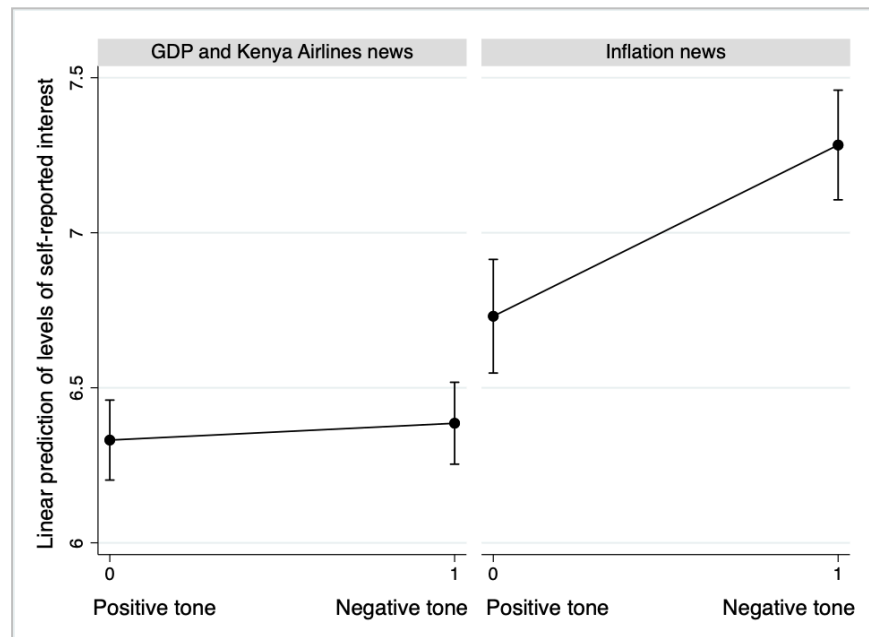


Figure 3. Linear prediction of level of self-reported interest by type of issue and tone.

As shown by Model 2C (Table 2), the effect of the tone of economic news on people's economic evaluations is contingent on the level of interest with which the news is consumed. The more interested people are, the stronger the impact of tone. Figure 4 displays the linear prediction of people's economic evaluations (note that the y axis runs from 6.0 to 8.0). When people consume the news with very low levels of interest, the impact of tone is virtually absent; being exposed to positive versus negative news does not affect people's economic evaluations. When people report high levels of interest (the right-hand end of the x axis), the impact of tone is most profound; those exposed to positive news report significantly more optimistic economic evaluations than those exposed to negative news (the difference is about 0.8 on an 11-point scale).

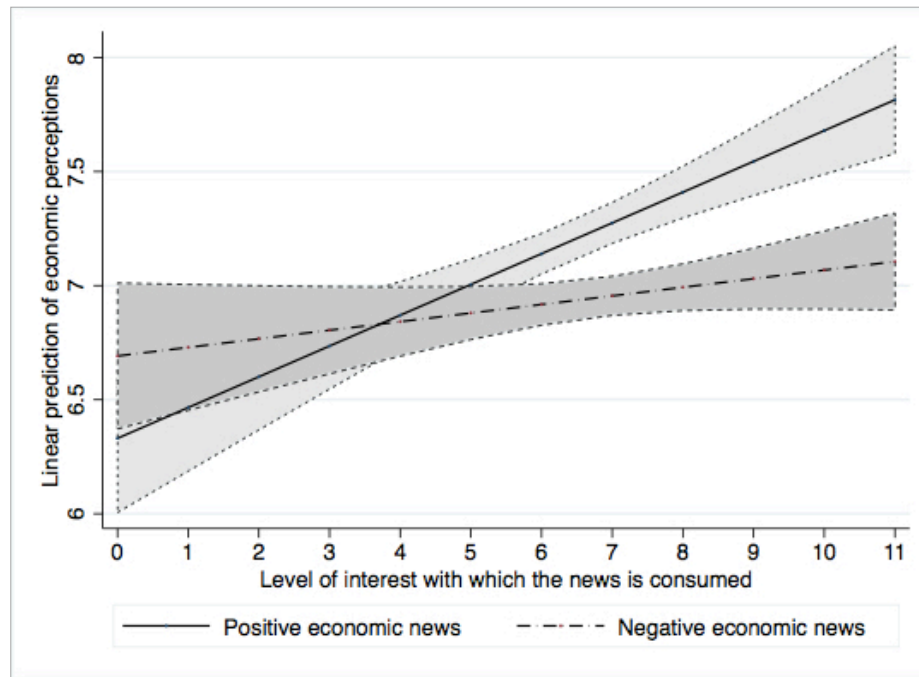


Figure 4. *Linear prediction of economic evaluations by self-reported interest and tone.*

Discussion

This study aims to disentangle the effects of different content features of economic news on news consumers' levels of interest and economic evaluations. The tone of economic news and the level of uncertainty with which economic information is presented both have an impact on consumers' reported levels of interest. People find negative news more interesting than positive news, and certain news more interesting than uncertain news. The latter finding runs counter to what was hypothesized, and a possible explanation could be that fear provoked by uncertainty has a distracting effect, making people less attentive to the news content. Importantly, the impact of tone is contingent on the issue being covered. People are most attentive to the tone of the content when the news deals with inflation (in contrast to news about macroeconomic trends or foreign company figures). The fact that news effects are strongest for the most obtrusive issue suggests that the theoretical framework proposed by Yagade and Dozier (1990) is more useful than the obtrusiveness thesis (Zucker, 1978) in explaining diverging news effects. The latter predicts the weakest media effects for the most obtrusive issues (i.e., inflation and purchasing power) because of the availability of alternative sources of information (e.g., real-life experiences). However, this availability does not prevent the inflation issue from enhancing the impact of tone. Alternative explanations relate to the concreteness of the issue (Yagade & Dozier, 1990) and the possible consequences the issue may have for people's pocketbooks.

The tone of economic news has a bearing on people's economic evaluations—a finding that is neither new nor surprising but nevertheless relevant because it is not often examined in an experimental

setting, offering a useful individual-level triangulation of similar findings on the aggregate (e.g., Soroka, 2006). Uncertainty in the news does not affect people's economic evaluations—a finding that challenges recent claims about the impact of uncertainty in economic news coverage (e.g., Van Dalen et al., 2017). It would be interesting to take these mixed results as a point of departure for subsequent research. Also, the impact of tone is not contingent on the economic issues that are covered. In fact, the analyses suggest direct issue impacts, with inflation news provoking the strongest—negative—effect on economic evaluations, followed by news about GDP. Again, these results run counter to what the obtrusiveness thesis would predict and provide more support for the idea of concrete issues prevailing over abstract issues. However, the underlying mechanisms remain unclear: Why would the mere presence of an issue in the news—apart from the tone of the content—lead to economic pessimism among news consumers? This question is worth exploring in further detail in future projects.

The second aim of this study was to analyze the moderating role of interest. The analyses indicate that the tone of news has a greater impact on people's economic evaluations when the news is consumed with more interest. Although levels of interest, *a posteriori* reported, cannot be equated with measures of motivation, the results of this study may benefit from insights offered by work in the field of political learning. Internal learning motivations moderate knowledge acquisition as people learn most about the things they also care about (Luskin, 1990, p. 348). Motivated people are more willing to devote cognitive resources to the information they are exposed to, and, as a result, they process the information more thoroughly (e.g., Elenbaas et al., 2013; Petty & Cacioppo, 1986). Applied to this study's context, people who are more interested in the economic news item are more likely to have processed the information carefully. As a result, information gains (or news effects) are larger for these news consumers than for those who consumed the news with modest or low levels of interest. With this finding, this study identifies an important factor moderating the well-studied impact of tone in economic news on people's economic evaluations.

This study is not without limitations. The results are only a first step in the process of understanding the mechanisms behind the moderating impact of issues. The results challenge conventional wisdom about the role of issue obtrusiveness; however, they do not conclusively refute it as the manipulation checks of issue obtrusiveness were not all successful. The finding that inflation news enhances the impact of tone may be related to the issue's concreteness (Yagade & Dozier, 1990), but it may also be driven by the issue's perceived relevance in terms of pocketbook consequences. Previous work has demonstrated that the negativity bias in economic news coverage is even higher when items deal with obtrusive issues (such as consumer prices; see Ju, 2014), which makes a thorough understanding of the combined impacts of tone and issue even more relevant. It would be interesting to systematically compare how other typical issues in economic news coverage (e.g., unemployment, government deficit, topics related to personal finance) moderate the impact of tone on public opinion.

Although an experimental approach comes with clear advantages, such as high levels of internal validity, some possible shortcomings should also be mentioned. First, participants who are knowledgeable about current affairs may have noticed that the content of the news item they were exposed to deviates from economic reality. As a result, they may have reported higher levels of interest because of this deviation and not because of the content features under study. Second, the empirical design allows for the measurement of only short-term media effects, and additional analyses on the basis of longitudinal data are

necessary to reinforce the conclusions. Finally, the modest news effects indicate that people's interest and economic evaluations are driven by more factors than the ones included in the current design.

Despite these limitations, this study provides some new insights into the conditionality of economic news effects. Economic news is at the heart of the formation of economic opinions, which, in turn, have profound impacts on other attitudes such as support for the government (e.g., Soroka, 2014). Working toward a comprehensive understanding of economic news effects is therefore a highly relevant endeavor from an academic as well as a societal point of view. Journalists may benefit from this type of research, because it makes clear how both valence and issue selection matter for the impact their news products have on public opinion. By focusing on conditionality and mechanisms, this study makes a useful contribution to this important research field and provides a fruitful point of departure for future research.

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Appendix A

Survey Questionnaire

On a scale from 0 (*much worse*) to 10 (*much better*), how do you think the Dutch economy has been doing over the last 12 months? Has it gotten much worse, has it remained the same, or has it become much better?

On a scale from 0 (*much worse*) to 10 (*much better*), how do you think the Dutch economy will be doing over the next 12 months? Will it get much worse, will it remain the same, or will it become much better?

On a scale from 0 (*fully disagree*) to 10 (*fully agree*), could you indicate to what extent you agree with the following statements?

- A. I considered this article interesting.
- B. I felt motivated when reading the article.
- C. The article could capture and hold my attention.
- D. I have read this article with great interest.
- E. I was thinking of other things when reading the article.
- F. I was easily distracted when reading the article.

Appendix B

Example of the Stimulus Material (Condition 3: Negative, Unobtrusive, Certain)

The original Dutch version is shown at left; the English translation is shown at right.



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GDP growth rate slows down; 2018 forecast certain

The Hague – 2018's first-quarter GDP growth rate was lower than that of the same period in 2017, the Central Bureau of Statistics (CBS) has announced. Growth in export goods was 1.3%, while the production of consumer and capital goods remained rather stagnant during the first months of 2018. Forecasts indicate that the grim trends will most likely continue through the end of the year.

The CBS announced 2018's first-quarter figures Thursday. The GDP growth rate has fluctuated around the same rate for more than six months. This trend is driven by developments in export and domestic consumption.

Pieter Hein van Mulligen, CBS's chief economist, said the disappointing figures came as no surprise: "We saw them coming, those trends in export and production. It is very likely that the negative impact of both trends on GDP will stabilize over the remainder of the year."

Figures from the Dutch Central Planning Bureau (CPB) are in line with the our expectations published by the CBS.

A composite image featuring a calculator, a pen, and a document with numbers, symbolizing finance or accounting. The calculator is in the foreground, showing buttons for '1', '2', '0', and '='. A pen is resting on a document with various numbers, including '139.24', '14.52', '15.06', '148', '1434', '1634', '1600', '2766.20', '13015.07', '13015.04', '12871.04', '12437', and '120'. The background is a light blue gradient.