Reporting Big News, Missing the Big Picture? Stock Market Performance in the Media

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Abstract

Between 2017 and 2024, the main national stock market indices rose in the US and the five largest European economies. However, the average daily performance of all six indices turns from positive to negative when weighted by daily media coverage. A case in point is the average daily performance of Germany's DAX index on days it was reported on the country's most-watched nightly news. While the DAX *increased* by more than 4 index points per day over the period, the index *dropped* by more than 10 points on days it was reported—news was bad news. On days the DAX wasn't covered on the nightly news, the index rose by around 10 points—no news was good news. About half of the worse daily performance when the DAX was covered is accounted for by a greater focus on negative news. The other half stems from a novel *big news bias*: a greater focus on large index changes, whether positive or negative, combined with a negative skew in the daily performance of the index. We show that the *big news bias* extends to other national stock market indices.

Keywords: Media Bias, Financial Markets
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1 Introduction

The media regularly reports on the daily performance of the main national stock market indices. Figure 1A highlights a key pattern regarding media coverage and the performance of national stock markets in the U.S. and the five largest European economies between 2017 and 2024. In each country, the 10 most-read online media outlets publish more reports on the national stock market index when the daily change is large, particularly when the change is large *and* negative. Figure 1B presents a second important pattern. While the average daily performance of the main national stock market index has been positive in all six countries, a different picture emerges when daily media coverage is taken into account. When weighted by the relative number of media reports, the average daily performance turns negative in every country.

A case in point is the average daily performance of Germany's DAX index when covered on the country's most-watched and highly trusted nightly news. Between 2017 and 2024, the DAX *increased* by around 4 index points per day on average (an annualized return of 7 percent). However, on days its performance was reported on the nightly news, the index *dropped* by around 10 points on average—a reported drop more than twice the actual average increase over the period. On days without news coverage, the DAX increased by around 10 points. News was bad news, no news was good news.

A first explanation for why no news on stock market performance is good news could be the media's tendency to focus on negative events (e.g. Harcup and O'Neill, 2001, 2017; Soroka, 2006). This *negative reporting bias* may extend to the coverage of stock markets.

We propose a second explanation for why no news is good news when it comes to stock market performance. The media is known to focus on major events, whether negative or positive. Moreover, in line with the financial literature, we find a negative skew in the daily performance of national stock market indices (e.g. Acharya et al., 2011; Albuquerque, 2012; Campbell and Hentschel, 1992). These two facts combined give rise to a *big news bias* in stock market reporting that can explain why no news is good news. The *big news bias* we document for reporting on national stock markets aligns with a broader hypothesis about media reporting in the best-seller *Factfulness* (Rosling et al., 2018). According to Rosling et al., the media's focus on major events can lead to reporting that misses positive trends as these often result from frequent small improvements interrupted by occasional larger setbacks.

We examine the importance of the *big news bias* and the *negative reporting bias* for the gap in the average daily DAX performance between days with and without coverage on Germany's most-watched nightly news. Each bias accounts for around half the gap. We also show that the *big news bias* extends to other national stock market indices.

Our work contributes to the literature on media bias (Groeling, 2013). One strand of the literature asks whether the media focuses on negative news (e.g. Hester and Gibson, 2003;

Lowry, 2008; Sacerdote et al., 2020). The most closely related studies are Harrington (1989), Heinz and Swinnen (2015), Garz (2014), and Soroka (2006). Harrington reviews television reporting on economic growth, unemployment, and inflation in the US and shows that in non-election years, larger and especially negative changes receive more screen time. Heinz and Swinnen review all articles reporting on up- and downsizing in a German newspaper and find more than ten times as many articles report on downsizing compared to upsizing. Garz examines media reports on changes in the unemployment rate in Germany. He finds that negative and positive changes in the unemployment rate cause equal numbers of negative and positive reports. Soroka analyzes how the volume of news on unemployment and inflation varies with new information on these economic indicators in the UK. He shows that for unemployment, positive new information generates fewer media reports than negative information. We build on this literature by taking into account that the media may focus on negative news from stock markets. As far as we know, there is no previous research examining whether reporting on stock market performance may reflect a media focus on negative new information.

Our main contribution is analyzing how the media's focus on major news—negative or positive—affects reporting on stock market performance. To the best of our knowledge, there is no previous research on this issue. Most closely related is the hypothesis in Rosling et al. (2018) that the media's focus on major events can lead to reporting that misses positive trends if these are the result of frequent small improvements interrupted by occasional larger setbacks.

2 Data and Background

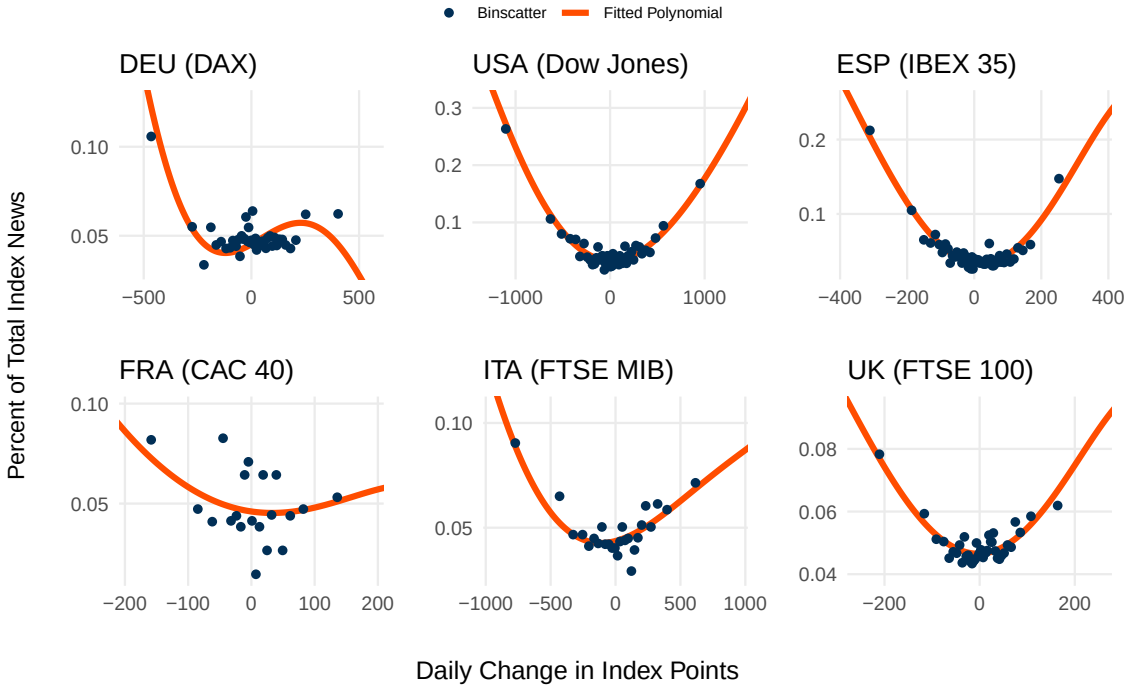
ZDF Stock Market Reporting ZDF (*Zweites Deutsches Fernsehen*) is a German public television network. As Germany's most-watched TV channel, it offers a wide range of programs (Der Spiegel, 2022). ZDF's news programs are among Germany's most popular news with around 45 percent of Germans watching them at least once a week. Our analysis is based on the channel's flagship news program, *ZDF heute-journal*, airing at around 9:45pm with a duration of around 28 minutes. The ZDF nightly news attracts an average of around 3.7 million viewers, making it Germany's most-watched nightly news (ZDF Unternehmensarchiv, 2025). It is widely recognized for its comprehensive coverage of both national and international news, as well as its in-depth analysis and expert commentary. In a survey on 15 major news outlets, 66 percent of Germans report that they trust the channel's coverage, putting ZDF in second place, just behind Germany's other public television channel (Newman et al., 2022).

On days stock markets are open, the ZDF nightly news almost always includes a live feed of around two minutes from the (already closed) German Stock Exchange in Frankfurt.[1] Jour-

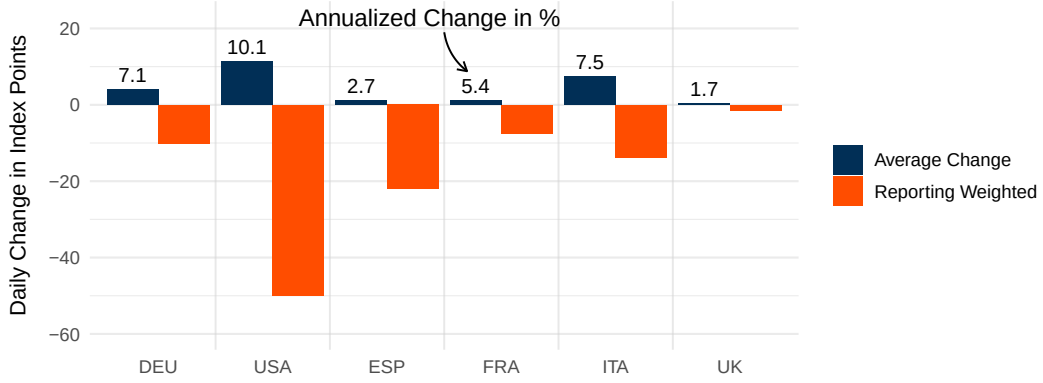
[1] During the 2017-2024 period we examine, 91 percent of ZDF nightly news on days with an open stock market include a live feed from Frankfurt.

Figure 1: Media Reporting on Six Main National Stock Indices

(A): Binscatter and 5th-Degree Polynomial of Daily Index Change and Media Reporting



(B): Actual and Media Reporting Weighted Change



Note: *Panel A* shows binscatter plots of the daily change in index points of the main national stock market indices of six countries (horizontal axes) against daily media reporting on the indices by the country's 10 most-read online media (vertical axes). The data is for the 2017-2024 period. Daily media reporting is the number of daily reports relative to total reports over the period. The number of bins is determined by the IMSE-optimal direct plug-in rule (Cattaneo et al., 2024). The curves are fitted 5th-degree polynomials. *Panel B* shows the average daily change of the indices in points. The blue bars are the actual change (the numbers on top are annualized returns in percent). The orange bars are the average daily change of the indices when weighted by media reporting. See Section 2 for the data sources and Appendix Figure A.1 for results using a different data set on online media reporting.

nalists report the main economic news of the day and often, but not always, the change of the DAX compared to the previous trading day. Our analysis focuses on the (non)reporting of DAX changes during these live feeds.[2] To gather the information on DAX reporting in the live feed from Frankfurt, three research assistants watched a total of 1,846 broadcasts from the beginning of 2017 to the end of 2024. Overall, 29 percent of live feeds report on the daily performance of the DAX (see Appendix Figure A.2 for a typical report). On 9 percent of Fridays, the ZDF reports the weekly change of the DAX. Longer-run outlooks are very rare. Between 2017 and 2024, the ZDF nightly news only covered the development of the DAX over a period of six months or longer on 12 occasions.

DAX The second piece of data pertains to the development of the DAX (*Deutscher Aktienindex*), Germany's benchmark index. The DAX is a performance index comprising "*the 40 largest and highest-turnover German stocks by market capitalization [representing] around 80 percent of the market capitalization of listed stock corporations in Germany and around 90 percent of stock market turnover in German shares*" (Börse Frankfurt, 2023). Data on the index are obtained from Commerzbank (onvista.de). During the time period we study, the index increased from 11,481 to 20,417 points (77.8 percent). This corresponds to an increase of 4 index points per day on average. The distribution of daily changes in the index is characterized by excess kurtosis and negative skewness, a more general phenomenon of aggregate stock market returns (e.g. Albuquerque, 2012). Appendix Table A.1 presents summary statistics.

Data for Figure 1 The data on the performance of the national stock market indices of France, Italy, Spain, the UK, and the US in Figure 1 are also from Commerzbank (for summary statistics see Appendix Table A.2). For data on media coverage, we first obtain the list of the most-read online media outlets in each country from the *Reuters Institute Digital News Report 2022* (Newman et al., 2022). We search for the 10 most-read outlets on *Factiva*, a large database of news. In case one of these outlets is unavailable, we add the next most-read outlet on the list of most-read online media outlets. Once we have the 10 most-read outlets available on *Factiva* for each country, we search for news in these outlets related to the country's national stock market index in Figure 1. The search terms are "*[index name]*" *AND point** in the respective language. Finally, we obtain the number of articles published each day, the total number of articles over the 2017-2024 time period we examine, and the share of this total published on a given day. For validation, we repeat the same procedure for *Mediacloud*, another provider

[2] We focus on DAX reporting during the live feeds as almost all broadcasts without live feeds are shorter than the regular 30 minutes due to special programs whose schedules are determined well in advance, like matches of national sports teams or the Olympic Games (e.g. Hanfeld, 2016). During the 2017-2024 period we examine, there is only a single instance where the DAX index was mentioned on the ZDF nightly news on days without a live feed from Frankfurt. For robustness, we also analyze the (non)reporting of DAX changes (anywhere) in the ZDF nightly news. This yields very similar findings. See Table 1 and Appendix Table A.4.

of online news (Roberts et al., 2021). Appendix Figure A.1 confirms our findings in Figure 1 using this alternative provider. Appendix B provides further details on *Factiva* and *Mediacloud*.

3 Main Results

3.1 A Simple News Reporting Model

Between 2017 and 2024, the DAX rose by nearly 78 percent. This corresponds to an average daily increase of just above 4 index points. When we compare the daily DAX performance on days the index was mentioned on the nightly news and on days it was not, we find a very large gap. On days the DAX was mentioned, the index *dropped* by 10.5 points on average. On days the DAX was not mentioned, the index *increased* by 10 points on average.[3] Hence, there was a gap of around −20 index points between the average DAX performance on days with and without coverage on the nightly news.

We now develop a simple news reporting model to understand the importance of the *big news bias* and the *negative reporting bias*. The model assumes that the nightly news reports the DAX performance on any given day if the daily DAX change, ΔDAX, satisfies

$$(\alpha + \beta \cdot |\Delta DAX|) \cdot I^{+} + (\delta + \gamma \cdot |\Delta DAX|) \cdot [1 - I^{+}] + \epsilon \geq 0 \tag{1}$$

where $|\Delta DAX|$ is the absolute value of the DAX change and I^{+} is an indicator variable taking the value of 1 if and only if the DAX change is positive and ϵ is a standard logistically distributed random variable. If the condition in (1) is not satisfied, the DAX performance is not reported in the news. The random variable ϵ captures that the same DAX change may be reported on some days but not others, depending on the supply of other news. The parameters β and γ capture that the reporting probability may vary with the magnitude of the DAX change, $|\Delta DAX|$, and that this effect may be different for positive and negative DAX changes. If $\beta > 0$, positive DAX changes are more likely to be reported if they are of a larger magnitude. If $\gamma > 0$, negative DAX changes are also more likely to be reported if they are of a larger magnitude. If $\gamma > \beta$, the effect of the magnitude of DAX changes on the probability of a report is larger for negative than positive changes. The parameters α and δ capture the baseline probability of reporting on DAX changes and that this probability may be different for positive and negative changes.

The reporting model in (1) gives rise to a logit regression. We report the parameter estimates in Appendix Table A.3 and illustrate the fit in Appendix Figure A.3. The main finding is that there is a statistically significant higher probability of reporting when DAX changes are larger in magnitude ($\beta > 0$, $\gamma > 0$) and that this effect is stronger for negative DAX changes ($\gamma > \beta$). On average, a 10-points increase in the DAX change increases the probability of news

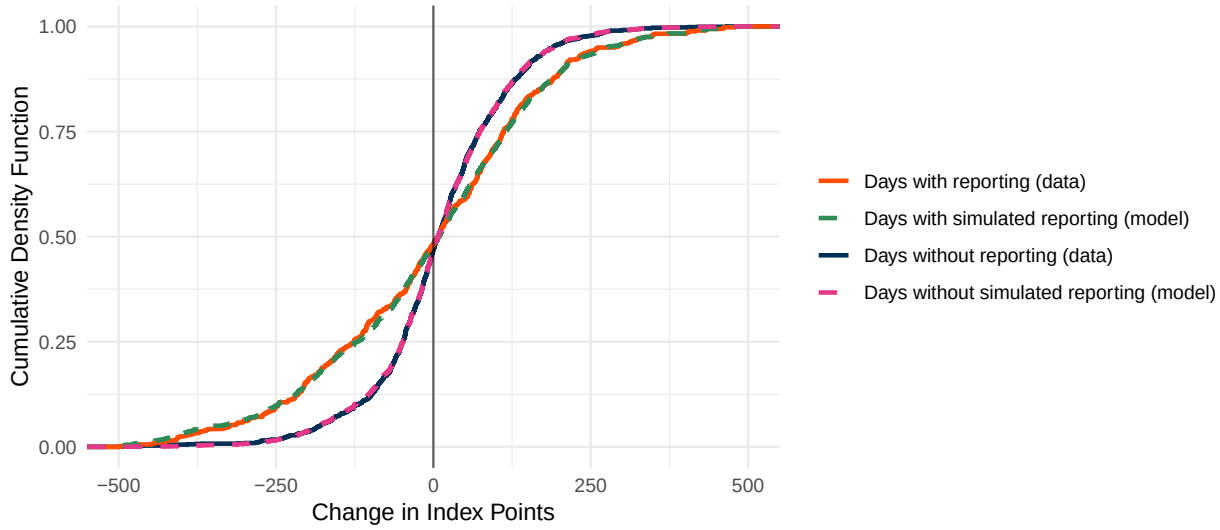
[3] The average change on days with and without a report differs significantly (p-value 0.039).

coverage by 1.1 percentage points for positive changes. For negative DAX changes, an increase of the same magnitude increases the probability of news coverage by 1.5 percentage points.

3.2 Comparing the News Reporting Model with the Data

In Figure 2 we examine whether our news reporting model can account for the observed CDFs of the DAX performance on days with reports on the nightly news and on days without reports. We do so by comparing the actual CDFs with simulated CDFs using our estimated news reporting model. The first step of our simulation consists of 100 million draws from the distribution of the daily DAX performance over the 2017-2024 period. We then use our estimates of the parameters in (1) and draws from a standard logit distribution to determine whether each DAX change is or is not reported based on whether the inequality in (1) is or is not satisfied. Figure 2 shows our results. The CDF implied by the news reporting model matches the data closely, both for days with DAX reports on the nightly news and for days without reports.

Figure 2: Comparing the CDFs of the News Reporting Model with the Data



Note: The CDFs labeled "model" are based on our news reporting model and 100 mln draws from the distribution of daily DAX changes over the 2017-2024 period. For each draw, news (non)reporting is simulated based on our news reporting model in (1) and the logit parameter estimates in the second column of Appendix Table A.3. The CDFs labeled "data" display the empirical CDFs of daily DAX changes over the 2017-2024 period.

3.3 Assessing the *Big News Bias*

We now use our news reporting model to ask a simple counterfactual question. Suppose the nightly news were to report DAX changes with the exact same probability whether they are positive or negative. How much would be left of the actual difference between the average

DAX performance on days with and without coverage in the news? To answer this question, we re-estimate (1) assuming the same parameter values for positive and negative DAX changes ($\beta = \gamma, \alpha = \delta$).[4] We then use this *symmetric* news reporting model to simulate the average daily DAX performance on days with and without news reports based on 100 million draws from the distribution of the daily DAX performance over the 2017-2024 time period.

Table 1 presents our results. The first column displays the data. The second column contains the simulation results for the model in (1) that allows for different parameter values for positive and negative DAX changes (the model in Figure 2). The simulation is based on 100 million draws from the distribution of the daily DAX performance over the 2017-2024 time period. The key result is that the simulated model captures the data well, which is unsurprising given the findings in Figure 2. The third column contains the results when we simulate reporting on the DAX performance using the estimated *symmetric* news reporting model instead. This eliminates any negative reporting bias and allows us to assess the quantitative importance of the *big news bias*. The interpretation of the −10.28 points in the bottom row is that even if the nightly news had reported positive and negative DAX changes of the same magnitude with the exact same probability, the average DAX performance on days with reports would still have been 10.28 points below the average DAX performance on days without reports. This is half of the overall gap. The remainder is accounted for by the negative reporting bias.[5]

Table 1: Average Daily Change of the DAX on Days with and without News Reports

	Data	Reporting Model	Symmetric Reporting Model
(1) Average DAX Change on Days with Report	−10.51	−10.50	−3.28
(2) Average DAX Change on Days without Report	+9.96	+9.94	+6.99
(3) Difference between (1) and (2)	−20.47	−20.45	−10.28

Note: Average change in index points of the DAX on days with (simulated) news reports and days without (simulated) news reports. The first column contains the data. The second column contains the simulated values based on our news reporting model in (1) and the logit parameter estimates in the second column of Appendix Table A.3. The third column contains simulated values based on the symmetric version of the news reporting model in (1) and the logit parameter estimates in the first column of Appendix Table A.3. Simulations are based on 100 million draws from the distribution of the daily DAX performance over the 2017-2024 time period.

3.4 Additional Results

Simulating the *Big News Bias* for other Indices The daily performance of the national stock market indices of France, Italy, Spain, the UK, and the US in Figure 1 is, like Germany's DAX, characterized by negative skewness (see Appendix Table A.2 for summary statistics). To assess

[4] The parameter estimates are in the first column of Appendix Table A.3.

[5] Results are very similar when we replicate the analysis including days without live feeds from the Frankfurt stock exchange on the ZDF nightly news. The main difference is that the *big news bias* is around 55 percent of the overall gap instead of around 50 percent. See Appendix Table A.4.

the magnitude of the *big news bias* for these indices, we calculate the average daily performance of each index on days with simulated reports using as a baseline the *symmetric* news reporting model we estimate for the ZDF nightly news in Section 3.3. The two parameters of the symmetric reporting model are: (i) a slope parameter determining the probability of reporting on large compared to small index changes and (ii) an intercept parameter that governs the overall probability of reporting index changes. We simulate the *big news bias* for the ZDF nightly news baseline slope parameter and also for a range of slope parameters around this baseline. For each value of the slope, we choose the intercept to obtain a probability of reporting on index changes of 29 percent, which is the share of days with DAX reports on the ZDF nightly news.

Figure 3 displays our results for the six indices between 2017 and 2024. To simplify comparisons between indices, we have rebased all indices to the same starting value as the DAX. Each panel plots the average daily performance on days with simulated reports on the vertical axis as a function of the slope parameter of the symmetric reporting model on the horizontal axis. The values on the horizontal axis indicate the implied average marginal effect of a 10-point change in the index on the probability of reporting. The range of average marginal effects on the horizontal axis includes the value we estimate for the ZDF nightly news (1.3 percentage points; marked by the vertical green line). To interpret the results, it is useful to keep in mind that a zero slope parameter implies that reporting on index changes is independent of the magnitude of index changes. As a result, the reported average daily performance is equal to the actual average daily performance over the period of interest. The main finding in the figure is that when the reporting probability depends on the magnitude of the index change (strictly positive slope parameters), the reported average daily performance is below the actual average daily performance for all indices. Moreover, the reported daily index performance drops quite quickly as we increase the slope parameter starting from zero and reported performance turns negative for values of the slope parameter well below that of the ZDF symmetric news reporting model.

Skewed Index Performance and the *Big News Bias* To understand how the size of the *big news bias* varies with the negative skewness of daily index changes, we proceed in three steps. We first calibrate a Normal-Inverse Gaussian (NIG) distribution—widely used to model stock returns (e.g. Jensen and Lunde, 2001; Wilhelmsson, 2009)—to match key moments of the daily distribution of DAX changes between 2017 and 2024. As the NIG distribution has four parameters, this requires a minimum of four moments. We use the average DAX change, the variance of changes, the skewness, and the kurtosis. Second, we use the calibrated NIG distribution for daily DAX changes to simulate the *big news bias* based on the estimated symmetric reporting model in Section 3.3. Third, we simulate the *big news bias* for a range of values for the skewness of the NIG distribution, keeping the average, variance, and kurtosis constant.

Our findings are summarized in Appendix Figure A.4. A first interesting result is that the calibrated NIG distribution of daily DAX changes combined with the estimated symmetric reporting model in Section 3.3 generates a difference of −8 points between the average change of the index on days with and without reports (the skewness of the DAX and the calibrated DAX is −0.46). This is a large part of the difference of −10.28 points we obtained in the last column of Table 1 using the actual daily DAX changes over the 2017-2024 period. A second interesting finding is that the size of the *big news bias* increases almost linearly with the magnitude of the negative skewness and that doubling the negative skewness from −0.46 to −0.92, holding the average, variance, and kurtosis constant, more than doubles the *big news bias*.[6]

The *Big News Bias* for Daily Changes in Percent So far our analysis has been based on index changes measured in index points. Compared to changes in percent, changes measured in index points have the advantage of being additive. We replicate our analysis based on changes in percent in Appendix C. The results are very similar. The main difference is that the relative importance of the *big news bias* for the gap between the average DAX change on days with and without reports on the ZDF nightly news drops somewhat (from 50 to 42 percent).

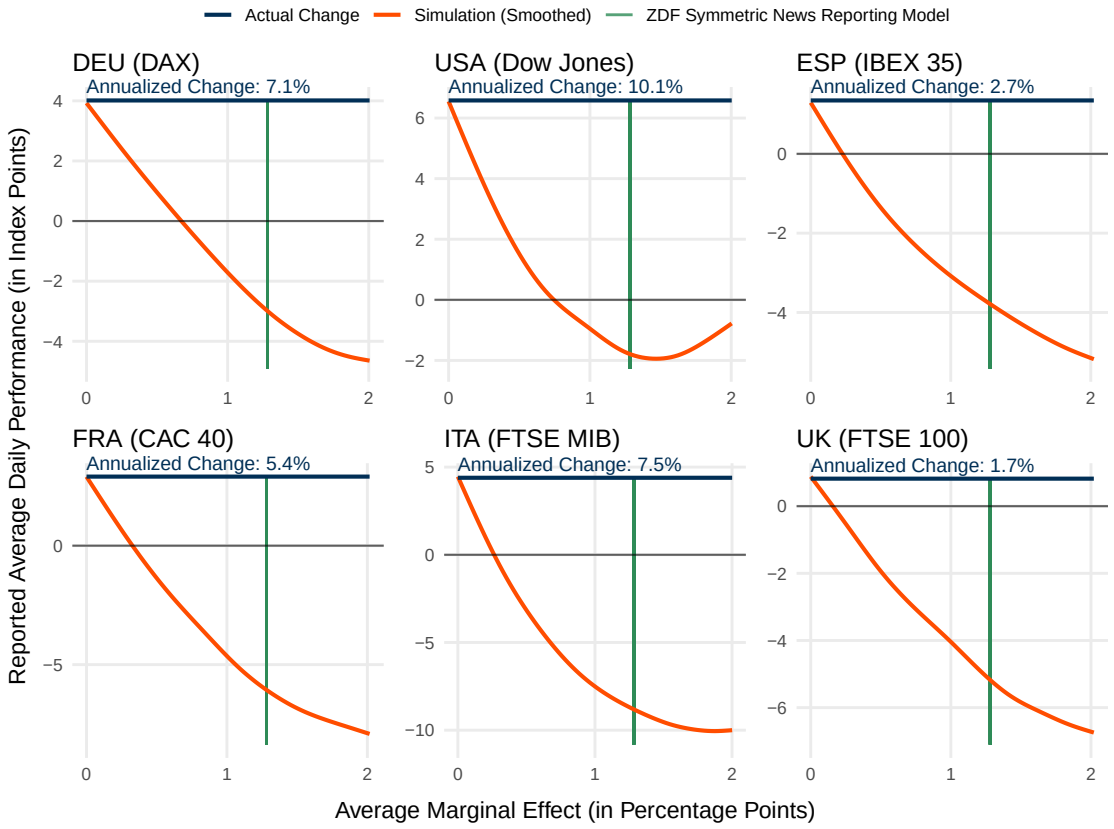
Weekly DAX Performance The ZDF nightly news reported on the weekly DAX change on 9 percent of all Fridays between 2017 and 2024. A first finding regarding weekly DAX reporting is that the index decreases by 0.43 percent in weeks the performance is reported but increases by 0.19 percent when it is not reported. Hence, the weekly DAX change is somewhat more likely to be reported when news from the stock market are worse. To understand the relationship between the weekly DAX performance and the probability of reporting in more detail, we implement (1) for weekly index changes. Our results are in Appendix Table D.1. The only statistically significant result is that weekly reporting is more likely for larger negative weekly changes in the DAX. The effect of larger positive weekly changes on the probability of reporting is also positive but statistically insignificant. In Appendix Table D.2, we implement the decomposition in Table 1 for weekly DAX changes. This yields a *big news bias* for weekly changes as well.

4 Conclusion

When it comes to reporting on national stock market indices, the media appears to be more likely to cover large changes, especially when changes are large and negative. We have shown that, as a result, news tends to be bad news when it comes to the performance of these indices for two reasons. First, clearly, when the media is more likely to report negative than positive

[6]When the skewness in Appendix Figure A.4 is zero, the difference between the average change of the index on days with and without reports is positive. This is because the average change in the daily DAX was positive over the period and the symmetric news reporting model is centered at zero.

Figure 3: Simulated Index Reporting for the US and Five Largest European Economies



Note: Simulation of the *big news bias* for the six stock market indices in Figure 1. To facilitate comparisons across indices, we have rebased all indices to the starting value of the DAX. The simulations are based on the symmetric version of the news reporting model in (1). Each panel plots the average daily performance on days with simulated reports on the vertical axis as a function of the slope parameter of the symmetric reporting model on the horizontal axis. The values on the horizontal axis are the implied average marginal effects on the probability of reporting of a DAX change that is 10 index points larger in magnitude. The baseline average marginal effect (1.3 percentage points; marked by the vertical green line) is the estimate for the ZDF nightly news in the first column of Appendix Table A.3. For each value of the slope, we chose the intercept to obtain an overall probability of reporting on index changes of 29 percent, which is the share of days with DAX reports on the ZDF nightly news live feed. We obtain the average daily performance on days with simulated reports for each slope value by simulating (non)reporting of the daily index changes over the 2017-2024 period 1,000 times and computing the average daily performance on days with simulated news reports. Simulation results are reported as a smoothed GAM function.

news, media coverage will tend to be biased towards bad news. The second reason is novel and of quantitative importance. When stock market performance is negatively skewed, the media's focus on larger index changes implies that news tends to be bad news even if positive and negative changes are equally likely to be reported.

Unlike other forms of media bias, the *big news bias* does not stem from cognitive heuristics or a conscious decision to slant the news toward a particular perspective. Instead, it arises from the distribution of events in the underlying population, combined with the media's focus on more significant events. While we have examined a setting where the distribution of events in the underlying population – and its skewness, if any – is easily measured, there is reason to believe that this distribution is left-skewed in other economic and non-economic contexts. For example, Ordoñez (2013) documents that economic variables move quickly during crises but slowly during recoveries. Rosling et al. (2018) argue that progress in many areas consists of continuous, small improvements with occasional, larger setbacks. Examining the extent to which the *big news bias* generalizes to such contexts is an important avenue for research. Moreover, in future work, it would be interesting to investigate Rosling et al.'s hypothesis that the nature of progress in many areas, combined with the media's focus on more significant events, ends up generating a public perception that progress is slower than it actually is.

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Appendix for

Reporting Big News, Missing the Big Picture?
Stock Market Performance in the Media

by

Antonio Ciccone and Felix Rusche

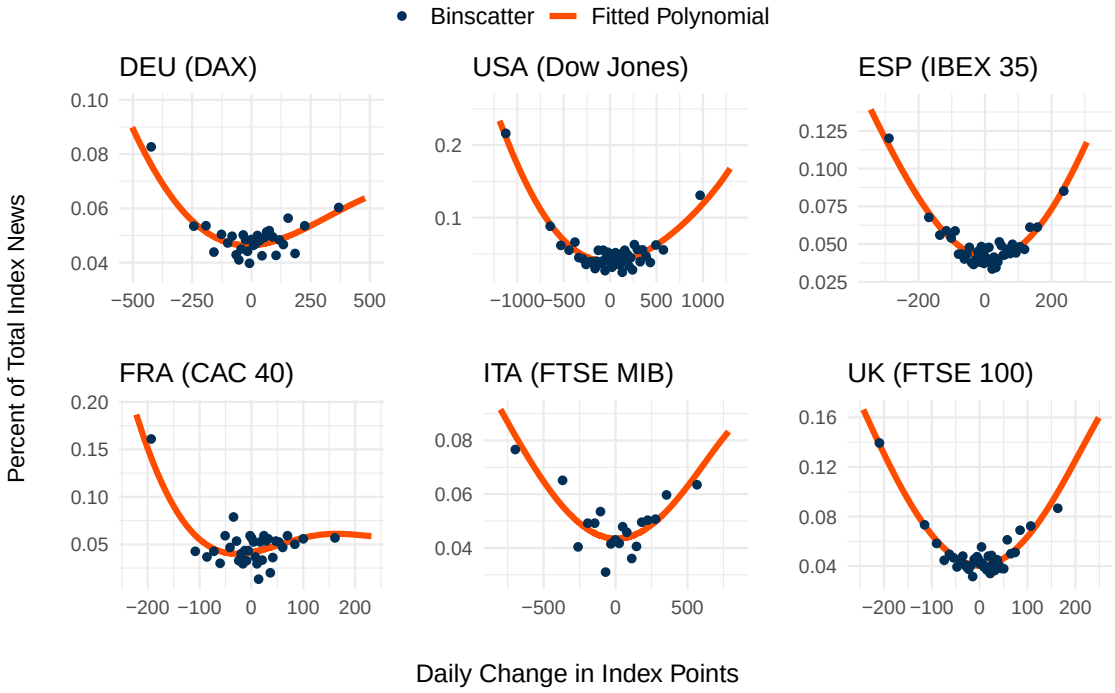
A Additional Tables and Figures

Table A.1: Summary Statistics on the DAX and ZDF Reporting

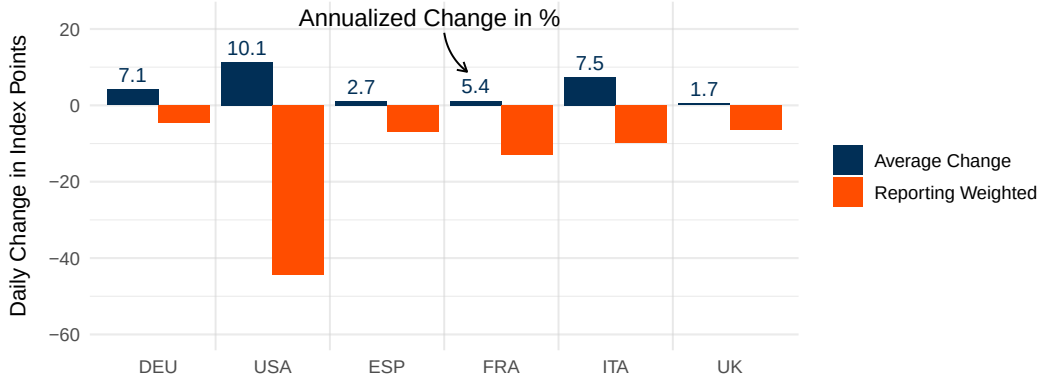
Statistic	N	Mean	St. Dev.	Min	Max
Dax Mentioned, Percent of Days	1,846	29.04	45.41	0	100
Viewers in Million	1,842	3.70	0.79	1.12	10.14
Market Share in Percent	1,842	14.61	2.59	4.90	31.40
Length of ZDF Nightly News in Minutes	1,846	28.38	3.09	8.72	54.38
DAX Level	1,846	14,020.18	2,225.57	8,441.71	20,426.27
Absolute Daily Change Points	1,846	105.55	108.53	0.06	1,277.55
Abs. Daily Change Points, Days with Report	536	159.37	148.64	0.06	1,277.55
Abs. Daily Change Points, Days without Report	1,310	83.54	76.82	0.13	497.39
Daily Change Points	1,846	4.01	151.36	−1,277.55	1,016.42
Daily Change Points, Days with Report	536	−10.51	217.78	−1,277.55	1,016.42
Daily Change Points, Days without Report	1,310	9.96	113.08	−497.39	466.08
Excess Kurtosis Points	1,846	6.72	0.00	6.72	6.72
Skewness Points	1,846	−0.46	0.00	−0.46	−0.46
Daily Change Percent	1,846	0.03	1.17	−12.24	10.98
Daily Change Percent, Days with Report	536	−0.06	1.74	−12.24	10.98
Daily Change Percent, Days without Report	1,310	0.07	0.84	−5.56	3.88

Figure A.1: Media Reporting on Six Main National Stock Indices Using Mediacloud

(A): Binscatter and 5th-Degree Polynomial of Daily Index Change and Media Reporting



(B): Actual and Media Reporting Weighted Change



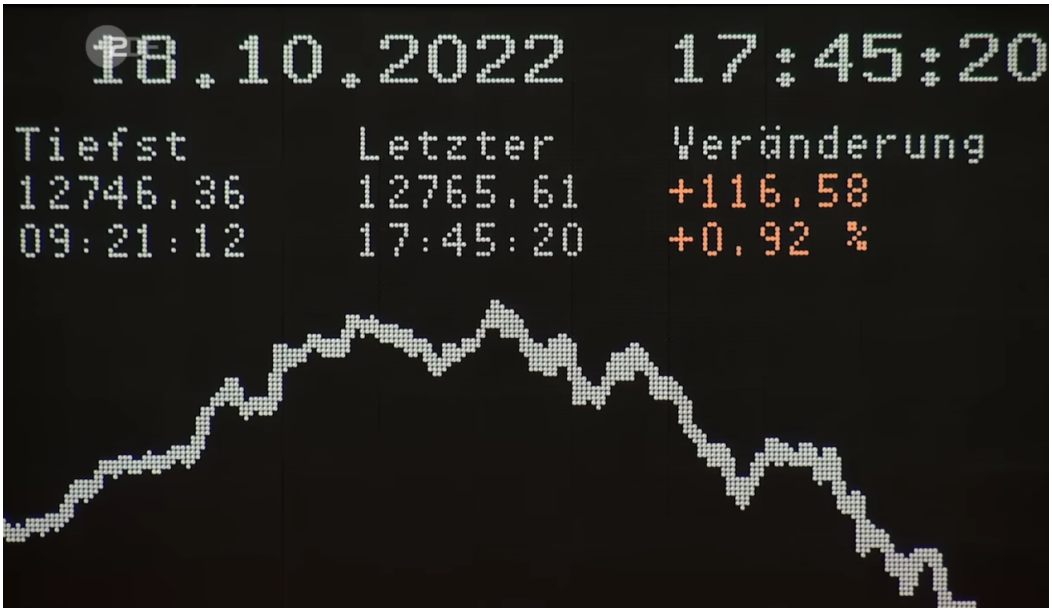
Note: The figure replicates Figure 1 using data on news reporting from Mediacloud instead of Factiva. *Panel A* shows binscatter plots of the daily change in index points of the main national stock market indices of six countries (horizontal axes) against daily media reports on the indices produced by the country's 10 most-read online media (vertical axes). Daily media reporting is the number of daily reports relative to total reports over the period. The data is for the 2017-2024 period. The number of bins is determined by the IMSE-optimal direct plug-in rule (Cattaneo et al., 2024). The curves are fitted 5th-degree polynomials. *Panel B* shows the average daily change of the indices in points. The blue bars are the actual change (the numbers on top are annualized returns in percent). The orange bars are the average daily change of the indices when weighted by media reporting. See Section 2 for the data sources.

Table A.2: Summary Statistics for Daily Changes of Indices in Figure 1

Stock Index	Statistic	Measured in Points	Measured in Percent
DAX	Daily Change	4.15	0.03
	Absolute Daily Change	105.60	0.78
	Skewness	-0.47	-0.41
	Excess Kurtosis	6.39	14.06
Dow Jones	Daily Change	11.33	0.04
	Absolute Daily Change	211.08	0.72
	Skewness	-0.74	-0.59
	Excess Kurtosis	10.23	22.01
IBEX 35	Daily Change	1.10	0.02
	Absolute Daily Change	70.31	0.79
	Skewness	-0.90	-0.95
	Excess Kurtosis	9.53	16.82
CAC 40	Daily Change	1.23	0.03
	Absolute Daily Change	45.15	0.76
	Skewness	-0.63	-0.71
	Excess Kurtosis	7.22	13.53
FTSE MIB	Daily Change	7.36	0.04
	Absolute Daily Change	204.53	0.87
	Skewness	-1.20	-1.56
	Excess Kurtosis	10.19	21.31
FTSE 100	Daily Change	0.51	0.01
	Absolute Daily Change	45.30	0.64
	Skewness	-0.91	-0.88
	Excess Kurtosis	9.14	16.04

Note: Summary statistics for the daily changes of the national stock market indices in Figure 1 measured in index points and in percent.

Figure A.2: ZDF Nightly News Reporting on Daily DAX Change 18.10.2022



Note: Screenshot of nightly news report on the daily change of the DAX on October 18, 2022. The orange highlight of the change in index points and in percent is part of the original broadcast.

Table A.3: Logit Results for the News Reporting Model

(A) Logit Coefficients

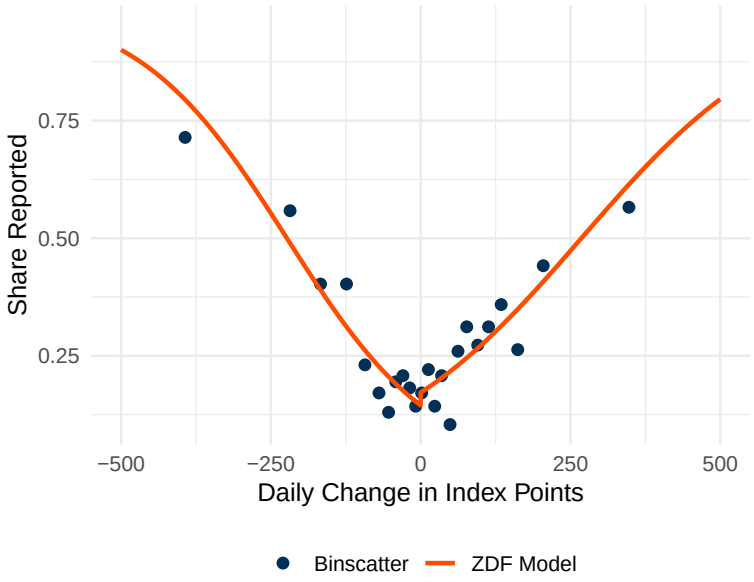
	Model 1	Model 2	Model 3
Constant	−1.6805***	−1.5722***	−1.5722***
	(0.0850)	(0.1162)	(0.1162)
Abs. Change Index Points	0.0070***		0.0059***
	(0.0006)		(0.0008)
Abs. Change Index Points x Pos. Change		0.0059***	
		(0.0008)	
Abs. Change Index Points x Neg. Change		0.0080***	0.0021*
		(0.0009)	(0.0012)
Neg. Change		−0.2055	−0.2055
		(0.1710)	(0.1710)
N	1846	1846	1846
R2 Adj.	0.082	0.082	0.082

(B) Implied Average Marginal Effects

	Model 1	Model 2	Model 3
Abs. Change Index Points	0.0013***		0.0011***
	(0.0001)		(0.0001)
Abs. Change Index Points x Pos. Change		0.0011***	
		(0.0001)	
Abs. Change Index Points x Neg. Change		0.0015***	0.0004*
		(0.0001)	(0.0002)
Neg. Change		−0.0378	−0.0378
		(0.0315)	(0.0315)
N	1846	1846	1846

Note: *Panel A* contains the results of estimating different versions of the logit news reporting model in (1). The model estimated in the first column is the symmetric version of the news reporting model in (1). The model estimated in the second column is the news reporting model in (1). The model estimated in the third column is equivalent to the model in the second column but reformulated so as to test the statistical significance of the difference between the slope parameters in (1) for positive index changes and negative index changes. *Panel B* reports the average marginal effects of a one-index-point change. Heteroscedasticity-robust standard errors in brackets. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Figure A.3: Daily DAX Performance in Index Points and ZDF Reporting



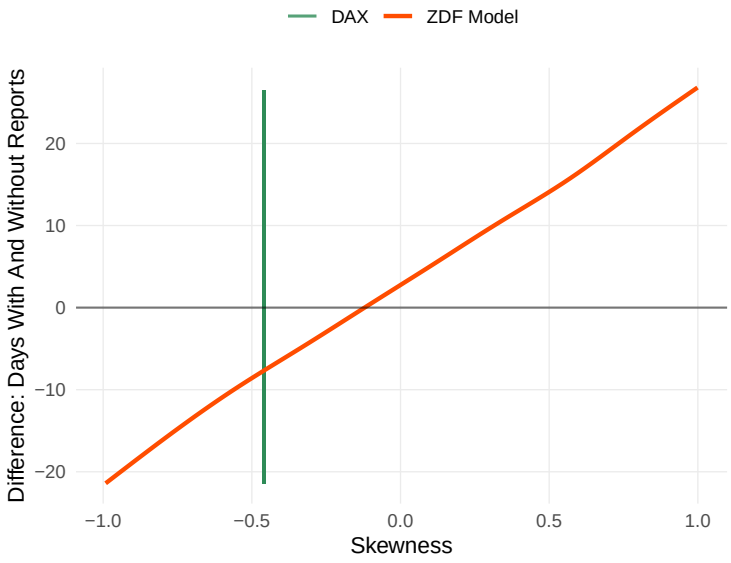
Note: The red curve is the estimated reporting probability using the logit reporting model in (1) and the logit parameter estimates in the second column of Appendix Table A.3. The binscatter uses the number of bins determined by the IMSE-optimal direct plug-in rule (Cattaneo et al., 2024).

Table A.4: Decomposition Including Nightly News without Live Feeds from Frankfurt

	Data	Reporting Model	Symmetric Reporting Model
(1) Average DAX Change on Days with Report	−10.51	−10.54	−4.00
(2) Average DAX Change on Days without Report	+9.42	+9.42	+7.08
(3) Difference between (1) and (2)	−19.93	−19.96	−11.08

Note: Replication of Table 1 including days with open stock markets where the ZDF nightly news does not have live feeds from Frankfurt. This adds 183 broadcasts to the 1,846 broadcasts in Table 1. Except for one broadcast, all the nightly news added do not report on the DAX.

Figure A.4: Simulations that Vary Skewness



Note: The baseline simulation corresponds to a skewness of −0.46 (marked by the vertical green line) and combines (i) a Normal Inverse Gaussian (NIG) distribution calibrated to the daily changes of the DAX over the 2017-2024 period and (ii) the symmetric version of the news reporting model in (1) and the logit parameter estimates in the first column of Appendix Table A.3. The moments used for the calibration are the average of daily changes in index points, the variance of daily changes, the skewness, and the kurtosis. Simulations other than the baseline are generated with the same symmetric ZDF reporting model but varying the skewness of the NIG distribution from −1 to +1, holding the average, variance, and kurtosis of the distribution constant.

B Factiva and Mediacloud

We start with the list of most-read online media outlets for each country according to the *Reuters Institute Digital News Report* (Newman et al., 2022). Next, we identify the ten most-read media outlets available on Factiva and the ten most-read media outlets on Mediacloud, two large databases for online news. If the database does not include a specific outlet on the list of most-read online media outlets according to the *Reuters Institute Digital News Report* or does not refer to a specific media outlet (e.g. sometimes the Reuters report lists "local newspaper" as an outlet), we replace it by the next highest-ranked outlet. The resulting list of outlets is shown in Table B.1. While we focus on online outlets, Factiva either only lists the print version or is unclear as to whether the print or online version of a given newspaper is included in its data in five instances. In these cases, we rely on the print/ambiguous version.[7] Mediacloud, on the other hand, only includes online outlets. After identifying the relevant outlets, we search for articles on Factiva using the following search terms: DEU: "dax" AND punkt*; USA: "dow jones" AND point*, UK: "ftse 100" AND point*; FRA: "cac 40" AND point*;

[7]The five outlets are: The Guardian (UK), Mail (UK), Le Parisien (FRA), Ouest France (FRA), El País (ESP).

"ftse mib" AND punt*; "IBEX" AND punto*. On Mediacloud, we include references to "percent" if this substantially increases the number of search results. The search terms for Mediacloud are: DEU: "dax" AND (punkt* OR prozent*); USA: "dow jones" AND percent*; UK: "ftse 100" AND percent*, FRA: "cac 40" AND (point* OR "pour cent"); ITA: "FTSE MIB" AND punt*; ESP: "IBEX 35" AND punto*. Table B.2 shows summary statistics of the Factiva and Mediacloud data respectively.

Table B.1: Factiva and Mediacloud: Inclusion of News Outlets in Data Collection

Country	Outlet	Readers (%)	Factiva	Mediacloud	Country	Outlet	Readers (%)	Factiva	Mediacloud
DEU	t-online	16			**FRA**	20minutes	17	✓	✓
	ARD news	15				regional or local newspaper	13		
	Spiegel	13	✓	✓		bfm tv	13		✓
	Regional/local	13				tf1 news	12		
	Bild.de	13	✓	✓		france info	11		✓
	n-tv	12	✓	✓		le parisien	10	✓	✓
	web.de	12		✓		brut	10		
	focus	12	✓	✓		cnews	9	✓	✓
	gmx	10				yahoo	9		
	welt	9	✓	✓		m6	9		
	zdf (heute)	8		✓		mediapart	8	✓	✓
	zeit	7	✓	✓		le huffpost	7		
	sueddeutsche	7	✓	✓		le point	7	✓	✓
	Public/regional news TV	7				l'internaute	6	✓	✓
	stern	6	✓	✓		rtl online	6	✓	✓
	faz	5	✓			ouest france	6	✓	✓
USA	yahoo	16			**ITA**	fanpage	21	✓	
	cnn	14	✓	✓		tgcom24online	21	✓	✓
	fox news	14	✓	✓		ansa	18	✓	✓
	local television	14				skytg24	18	✓	
	NYT	12	✓	✓		la repubblica	15	✓	✓
	NBC/MSNBC	11	✓	✓		il corriere della sera	14	✓	✓
	washington post	10	✓	✓		rai news	11		✓
	buzzfeed	9	✓	✓		notizie libero	10		
	local radio news online	9				commercial radio news online	10		
	cbs	8	✓	✓		il fatto	9	✓	✓
	abc	8	✓	✓		huffpost	9	✓	
	msn	8				regional or local newspaper	9		
	npr news online	8	✓	✓		il sole 24 ore	8	✓	✓
	other regional or local newspapers	8				tgla7 online	8		
	usa today	8	✓	✓		quotidiano.net (la nazione)	7	✓	
	huff post	8				il post	7		
ESP	el pais	18	✓	✓	**UK**	bbc	43	✓	✓
	okdiario	13	✓	✓		guardian	18	✓	✓
	antena 3	13	✓	✓		sky	13	✓	✓
	el mundo	13	✓	✓		mailonline	12	✓	✓
	20 minutos	13	✓	✓		regional or local newspaper	9		
	el confidencial	12	✓	✓		telegraph	6	✓	✓
	el diario	12	✓	✓		independent/i100	5	✓	✓
	regional/local public tv / radio news online	12				mirror	5	✓	
	regional or local newspaper online	12				sun	5	✓	✓
	marca	11	✓	✓		huffpost	5		✓
	la vanguardia	9	✓	✓		itv news	5		✓
	abc	9	✓	✓		metro online	5		
	el espanol	8				msn	4		
	telecinco	8				the times	4	✓	✓
	rtve	8				yahoo	4		
	regional/local private tv / radio news online	8				buzzfeed	4		

Note: Most-read online media outlets by country according to the *Reuters Institute Digital News Report* by Newman et al. (2022) and outlets available on Factiva and Mediacloud. The outlets colored in blue do not refer to specific outlets.

Table B.2: Summary Statistics of Media Data

(A) Factiva

Country	Index	Mean	Median	SD	Min	Max	Days
DEU	DAX	8.36	6	8.65	0	206	2,029
USA	Dow Jones	1.10	0	1.90	0	21	2,011
ESP	IBEX 35	1.72	1	2.26	0	21	2,046
FRA	CAC 40	0.16	0	0.44	0	4	2,048
ITA	FTSE MIB	0.69	0	0.96	0	8	2,032
UK	FTSE 100	7.23	7	2.56	1	23	2,020

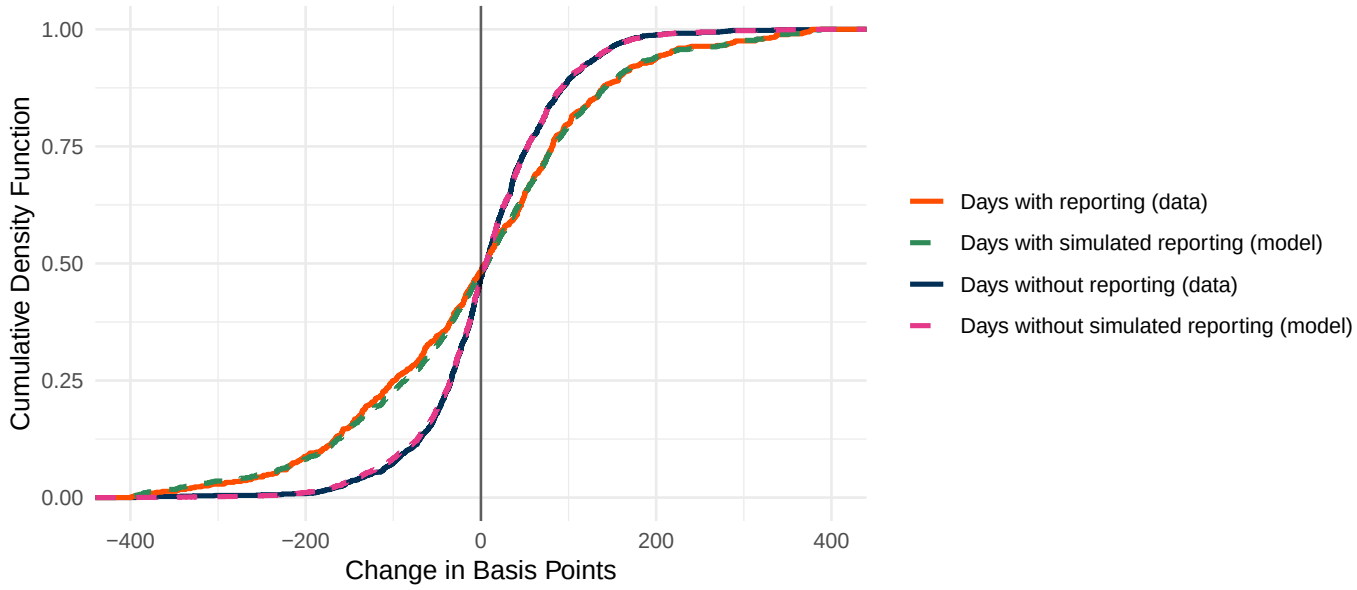
(B) Mediacloud

Country	Index	Mean	Median	SD	Min	Max	Days
DEU	DAX	5.39	5	3.67	0	32	2,029
USA	Dow Jones	2.53	1	3.46	0	39	2,011
ESP	IBEX 35	2.36	2	2.04	0	15	2,046
FRA	CAC 40	0.25	0	0.64	0	7	2,048
ITA	FTSE MIB	2.45	2	2.42	0	16	2,032
UK	FTSE 100	1.96	1	2.07	0	15	2,020

Note: Number of daily articles in the ten most-read online media outlets according to Factiva and Mediacloud. All days with open stock markets from 2017 to 2024.

C Replication of Analysis in Basis Points

Figure C.1: Comparing the CDFs of the News Reporting Model in Basis Points with the Data



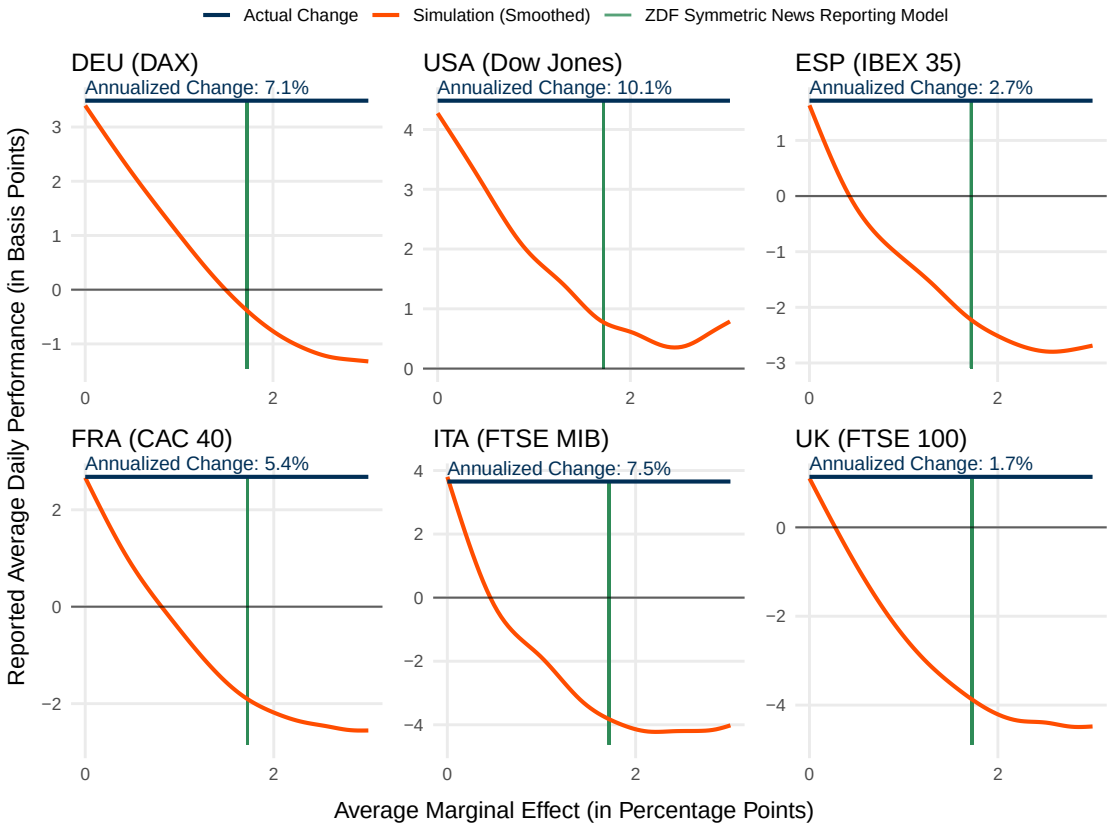
Note: The CDFs labeled "model" are based on our news reporting model in (1) with DAX changes measured in basis points and 100 mln draws from the distribution of daily DAX changes over the 2017-2024 period. For each draw, news (non)reporting is simulated based on the estimated news reporting model in (1) in basis points. The CDFs labeled "data" display the empirical CDFs of daily DAX changes over the 2017-2024 period.

Table C.1: Simulation of ZDF Reporting Bias in Basis Points

	Data	Reporting Model	Symmetric Reporting Model
(1) Average DAX Change on Days with Report	−5.94	−5.93	−0.47
(2) Average DAX Change on Days without Report	+7.34	+7.33	+5.10
(3) Difference between (1) and (2)	−13.28	−13.26	−5.57

Note: Average change in basis points of the DAX on days with (simulated) news reports and days without (simulated) news reports. The first column contains the data. The second column contains the simulated values based on the estimated news reporting model in (1) with DAX changes measured in basis points. The third column contains simulated values based on the estimated news reporting model in (1) with DAX changes measured in basis points and assuming symmetry for positive and negative changes.

Figure C.2: Simulation of Average News Report in Basis Points



Note: Replication of Figure 3 with index changes measured in basis points. All simulations are based on the symmetric version of the news reporting model in (1) with index changes measured in basis points instead of index points. The baseline symmetric news reporting model (marked by the vertical green line) is estimated based on the ZDF nightly news. Each panel plots the average daily performance on days with simulated reports on the vertical axis as a function of the slope parameter of the symmetric reporting model on the horizontal axis. The values on the horizontal axis are the implied average marginal effects on the probability of reporting of a DAX change that is 10 basis points larger in magnitude. For each value of the slope, we chose the intercept to obtain an overall probability of reporting on index changes of 29 percent, which is the share of days with DAX reports on the ZDF nightly news live feed. We obtain the average daily performance on days with simulated reports for each slope value by simulating (non)reporting of the daily index changes over the 2017-2024 period 1,000 times and computing the average daily performance on days with simulated news reports.

D Analysis of Weekly Changes

Table D.1: Reporting Weekly DAX Performance on the ZDF Nightly News in Percent

(A) Logit Regression Coefficients

	Model 1	Model 2	Model 3
Constant	−2.8031***	−2.5355***	−2.5355***
	(0.2463)	(0.3240)	(0.3240)
Abs. Change Pct.	0.2298***		0.1639
	(0.0706)		(0.1155)
Abs. Change Pct. x Pos. Change		0.1639	
		(0.1155)	
Abs. Change Pct. x Neg. Change		0.2828**	0.1189
		(0.1201)	(0.1667)
Neg. Change		−0.5986	−0.5986
		(0.5322)	(0.5322)
Num.Obs.	360	360	360

(B) Logit Average Marginal Effects

	Model 1	Model 2	Model 3
Abs. Change Pct.	0.0183***		0.0130
	(0.0060)		(0.0094)
Neg. Change		−0.0473	−0.0473
		(0.0423)	(0.0423)
Abs. Change Pct. x Neg. Change		0.0224**	0.0094
		(0.0098)	(0.0132)
Abs. Change Pct. x Pos. Change		0.0130	
		(0.0094)	
N	360	360	360

Note: Logit results for reporting weekly DAX changes based on (1) using weekly DAX changes measured in percentage points. The ZDF nightly news reports weekly DAX changes in 33 of the 360 weeks between 2017 and 2024. These reports are always in percent, which is why we implement (1) for weekly DAX changes measured in basis points. Panel (A) shows logit regression coefficients and Panel (B) shows the average marginal effects. Heteroscedasticity-robust standard errors in brackets. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Table D.2: Decomposition of Reporting of Weekly Changes in Basis Points

	Real	Reporting Model	Symmetric Reporting Model
(1) Average DAX Change in Weeks with Report	-43.02	-44.74	-46.94
(2) Average DAX Change in Weeks without Report	19.86	19.85	20.12
(3) Difference Between (1) and (2)	-62.88	-64.59	-67.05

Note: The table replicates the decomposition in Table 1 for weekly DAX changes measured in basis points. The ZDF nightly news reports weekly DAX changes in 33 of the 360 weeks between 2017 and 2024. These reports are always in percent, which is why we implement (1) for weekly DAX changes measured in basis points. The first column contains the data. The second column contains simulated values based on the news reporting model in (1) with weekly changes in percentage points and the logit parameter estimates in the second column of D.1. The third column contains simulated values based on the symmetric version of the news reporting model in (1) with weekly changes in percentage points and the logit parameter estimates in the first column of D.1. The results in the table show that the *big news bias* can account for the data. The *negative reporting bias* does not play a role as there is an offset between the higher probability of reporting larger compared to smaller negative weekly changes in the DAX and a lower overall probability of reporting negative weekly changes, see the results in the second column of D.1. Put differently, there is an offset because relatively small weekly changes are less likely to be reported if they are negative while relatively large weekly changes are more likely to be reported if they are negative.