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DISCUSSION PAPER

Watchdog or Loyal Servant?
Political Media Bias in US Newscasts

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We investigate if four leading, electronic news gathering organizations in the US – *ABC News*, *CBS News, FOX News*, and *NBC News* – fulfill their role as the fourth estate in the US democracy. Our analysis, using the Political Coverage Index (*PCI*) introduced by Dewenter et al (2020), is based on the tonality of their political coverage using 815,000 human-coded news items from 2001 through 2012. For our econometric analysis, we use panel regressions with media and time fixed effects. To account for endogeneity, we cut time spans around national elections out of our data. In the remaining data, elections can be seen as a purely exogenous event. Focusing on the entire media set, we find robust empirical results for an anti-government bias in media reporting: Under Republican presidents, political coverage tends to be more liberal, whereas it tends to be more conservative if the president is a Democrat. However, when focusing on each single news organization, interesting differences emerge: For *CBS News* and *NBC News*, we find robust empirical evidence of anti-government-bias. In contrast, *FOX News* is always much more critical of Democrats than of Republicans. Hence, *FOX News* can be seen as a more loyal servant to one party rather than acting as the fourth estate. In addition, we find no evidence that *ABC News* significantly changes its position depending on the presidency. Although descriptive statistics show a certain tendency toward government-critical reporting by *ABC News*, the variation is not statistically significant.

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1. Introduction

With the success of Donald Trump in the 2016 US presidential elections, the media and its role in democracies are, once again, under scrutiny. For instance, on the one side, *ABC News*, *CBS News,* and *NBC News* are often seen to be at least slightly politically left biased and are regularly accused of spreading "fake news" from the US president's perspective. On the other side, *FOX News* is often seen as politically right biased, spreading "fake news" from the perspective of the other side of the political spectrum. The strong and rising criticism of traditional media in the late 2010s, not just in the US, leads us to the question the role media play in the US democracy. In this context, a rather optimistic perspective can be traced back to parliamentary debate in 1787 in the United Kingdom on providing media access to the parliament. In this debate, Edmund Burke claimed that media form the "fourth estate" of government – going beyond the traditional three estates: The Lords Spiritual, the Lords Temporal, and the House of Commons.

A less optimistic perspective is provided by Public Choice literature: For instance, Anderson and McLaren (2012) argue that media are owned by people with political and profit motives, who use their influence to change policy. Other authors argue that governments capture the media through policy decisions in their favor or by access to the news stories in order to maintain "a 'cozy' relationship with the media" (Besley and Prat, 2006, 720). In particular, the latter explanation of media capture implies that media outlets tend to be less critical of the government. The former explanation would lead us to expect that such pro-government bias exists among media outlets that are owned or edited by people aligned with the political party in power. In both cases, media would fail in fulfilling their role as the fourth estate.

In this contribution, we analyze the role of four leading news gathering organizations in the US – *ABC News, CBS News, FOX News,* and *NBC News* – on its democracy on the basis of a huge amount of hand-coded media data that allows for focusing on the tonality of political reporting by the aforementioned news organizations. The selected news organizations are relevant, as *ABC News, CBS News,* and *NBC News* are the news divisions of the three big traditional commercial broadcast television networks in the US. Subsequently, in 1996, *FOX News* was established as cable news channel, competing, in large part, with the three aforementioned news gathering organizations.[4]

By applying the tonality-based Political Coverage Index (*PCI*), introduced by Dewenter et al. (2020), to more than 815,000 human-coded news items on Democrats and Republicans from 2001 through 2012, we are able to identify the relative political positioning of the four newscasts during the time span analyzed.

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[4] See section 3.1 for a discussion about this selection.

However, as the political positioning of a newscast can change over time, in a next step we analyze whether media coverage of politicians and parties differs depending on the party affiliation of the president in office. If newscasts tend to be less critical of the political affiliation of the president in office, this could be seen as a hint of media capture in the line of Besley and Prat (2006). In contrast, if newscasts tend to be more critical of the political affiliation of the president in office, this could be seen as an indication that the media serve as forth estate in line with Edmund Burke.

Beyond the general inquiry of the entire media data set, we will analyze the political coverage of each individual news program in the set to investigate the existence of a government or anti-government bias. Put differently, we analyze if *ABC News, CBS News, FOX News,* and *NBC News* deliver as fourth estates or if they are loyal servants to only one party; if the latter is true, this can be seen as ideologically driven.

Methodologically, our analysis is based on a panel regression set up with media and time fixed effects as well as a multitude of economic and geopolitical controls to capture at least a part of the factual performance of the government, which is also likely to be a major driver of the political media coverage. However, by this measure, we cannot rule out certain serious endogeneity issues: If, for instance, the political positioning of the media is not just affected by the party affiliation of the president in office and the election results are also affected by the political positioning of the media, this would lead to biased coefficients due to reverse causality. Furthermore, if both the political positioning of the media as well as the election outcome were affected by the uncaptured part of the performance of the government, this would lead to biased coefficients due to omitted variables. Hence, we cut the time span around the elections out of our data. Consequently, our analysis is mainly based on the remaining part of the data, where elections can be seen as purely exogenous events. In doing so, we use elections as an identification tool.

The remainder of our contribution is structured as follows: Section 2 provides an overview of the related literature and describes the research gap. In Section 3, the data are introduced and the political positioning of the newscasts is demonstrated by the Political Coverage Index (*PCI*). Section 4 econometrically investigates the role of the newscasts as the fourth estate for both the entire media set as well as for each single newscast in the timeframe analyzed and discusses the results. Finally, section 5 concludes.

2. Related Literature

Media play an important role in the perceptions and decisions of individuals in the economic and political contexts, because, in addition to direct communication and personal experience, information is typically gathered indirectly through media channels. This is relevant because media can never depict the complete reality, only painting a partial picture. In addition, media reality is prone to various types of distortions, so-called media bias (Entman 2007). Of the various types of media bias, the most prominent are advertising bias, when media change their news coverage in tone or volume to favor their advertising clients (see Dewenter and Heimeshoff, 2014, 2015; Gambaro and Puglisi, 2015; or Reuter and Zitzewitz, 2006); the distance bias, when media report more on events that take place close to their main market (Berlemann and Thomas, 2019); the negativity bias, when media focus more on catastrophes, crime, and threatening political and economic developments in comparison to more positive news (see Friebel and Heinz, 2014; Garz, 2013, 2014; Heinz and Swinnen, 2015 or Soroka, 2006); and the newsworthiness bias, when news on certain issues crowd out coverage on other issues because they are seen as more newsworthy (see Durante and Zhuravskaya, 2018 or Eisensee and Strömberg, 2007).[5]

In the political context, one question of interest is if media outlets favor one or another side of the political spectrum. In addition to political science and communication sciences, this question is analyzed in the public choice literature. For instance, Groseclose and Milyo (2005), focusing on the US two party system, provide an index of media outlets by comparing the number of think tanks and interest groups cited by Democratic and Republican members of US Congress with the same groups quoted by the media. The results show a strong liberal bias among all US newscasts examined, except FOX News' Special Report. In contrast, Gentzkow and Shapiro (2010) compare characteristic phrases frequently used in different media outlets. In addition, political media biases are measured by Larcinese, Puglisi, and Snyder (2011) and Puglisi (2011) using references to core topics, Qin et al. (2018) count references to political leaders, and Chiang and Knight (2011) as well as Puglisi and Snyder (2015b) use newspapers' explicit endorsements and editorial positions. Subsequently, Dewenter et al (2020), introduce a tonality-based Political Coverage Index (*PCI*), apply it to 35 opinion-leading media in Germany and find empirical evidence that media is fulfilling its role as fourth estate in the German democracy (see below).[6]

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[5] In addition, there is a large literature in communication and media science on the existence of media biases and its foundations (see, among others, Ball-Rokeach, 1985, Ball-Rokeach and DeFleur, 1976, and Dunham, 2013).

[6] There is also existing research on the political bias of German media outlets, provided by Garz et al. (2020). The authors construct an index of media slant by comparing the language of Facebook posts by 84 German news outlets on politicians who were investigated for criminal offenses with that of the main political parties. The results are comparable to those of Dewenter et al. (2020).

Consequently, individual perceptions and decisions based on biased political media reporting might deviate from perceptions and decisions based on more unbiased information.[7] These deviations can affect both voters and politicians. For instance, in 1987, Page et al. show that network television news accounts for a high proportion of changes in the policy preferences of U.S. citizens. Benesch et al (2019) provide econometric evidence that media can affect the worries of the population about policy relevant topics, like migration, by using media spill-overs from one country to another as an instrument. A closer look at the impact of media coverage on political action is provided by Snyder and Strömberg (2010).[8] The authors find that voters living in regions with insufficient political media coverage are less able to recall or evaluate their representatives. This affects the work of politicians: Less covered congressmen are less willing to serve as witnesses at congressional hearings or serve on committees. In addition, regions with less press coverage of representatives receive less federal spending. The opposite causation, i.e. the impact of government parties on media, is analyzed by Gentzkow et al (2015). In the international political context, Eisensee and Strömberg (2007) show that media coverage of natural disasters causally affects US disaster relief. The authors find evidence that, in times of high news pressure caused by Olympic Games, natural disasters are less likely to be covered, which leads to lower disaster relief.[9]

Another outstanding reason for the relevance of political media coverage is that is can affect voting intentions and election outcomes: Dewenter et al. (2019) show that a less critical tonality of the media coverage of a political party can increase the intention to vote for that party, at least in the short term. Prat (2018) demonstrates that media organizations are able to induce voters to make electoral decisions that they would not make if reporting were unbiased. Enikolopov et al. (2011) focus on the impact of media coverage on election outcomes. The authors, analyzing electoral outcomes of parliamentary elections in 1999 in Russian regions with different access to an independent national TV channel, find that access to independent TV led to decreased votes for the governing party and to an increased vote for major opposition parties. The results are

[7] Beside inquiries regarding the impact of media reporting on perception and behavior in the political context, there is also a huge and growing literature in the economic context. For instance, Nadeau et al. (2000), Soroka (2006), and van Raaij (1989) show that the assessment of the state of the economy and economic expectations depends, at least in part, on media reports. In this context, Ulbricht et al. (2017) use media data to improve economic forecasts. Alsem et al. (2008), Goidel and Langley (1995), as well as Doms and Morin (2004) analyze the impact of media reporting on the consumer climate. Garz (2012, 2013) investigates the impact of distorted media coverage of unemployment on the perception of job insecurity, while Lamla and Maag (2012) analyze the impact of media reporting on inflation forecasts of both households and professional forecasters. Chadi (2015) shows that media coverage of economic crises can even affect life satisfaction. In addition, media coverage can also affect decisions and behavior. For instance, Dewenter et al. (2016) find evidence that car sales depend, at least in part, on media coverage of the automotive industry.

[8] Further contributions in this context are Bernhardt et al (2008), D'Alessio and Allen (2000), Druckman and Parkin (2005), Gentzkow et al. (2011) as well as Morris (2007).

[9] More evidence on the effect of media coverage in the international political context is provided by Beckmann et al. (2017) and Jetter (2017) with focus on terror activities and Durante and Zhuravskaya (2018) in the context of the Israeli-Palestinian conflict.

comparable to those of DellaVinga and Kaplan (2007). Based on the successive rolling out of *FOX News* across US states, the authors find that Republicans gained additional votes in presidential elections between 1996 and 2000 in cities with access to *FOX News*.

The demonstrated impact of media on perceptions and decisions in the political context draws our attention to the fundamental role of the media in democracy. As mentioned in the introduction, the perspective of Public Choice literature on the role of media in democracies is rather sobering: Anderson and McLaren (2012) argue that media are owned by people with political and profit motives who use their influence to change policy. However, Gentzkow and Shapiro (2010) find that the media's response to consumer preferences has a much higher explanatory power for media slant than ownership structures. Other authors argue that governments capture the media through policy decisions in their favor or by access to news stories in order to maintain "a 'cozy' relationship with the media" (Besley and Prat, 2006, 720). Specifically, the latter explanation of media capture implies that media outlets tend to be less critical of the government. The former explanation would lead us to expect pro-government bias, especially for those media outlets that are owned or edited by people aligned with the political party in power. In both cases, media's role as fourth estate would be, at least, rather restricted.

To better investigate the role of media in democracy, Dewenter et al (2020) introduce the Political Coverage Index (*PCI*), which is based on the tonality of news reports, and apply it to Germany. The result shows the relative positioning of different media outlets across the political spectrum. By analyzing the variations of the political positioning in time, the authors tackle the question of whether the media fulfill their role as the fourth estate or if there is empirical evidence of media capture. They find empirical evidence that media fulfill their role as the fourth estate, at least in Germany. In the present contribution, we apply *PCI* to four leading US news gathering organizations – *ABC News, CBS News, FOX News,* and *NBC News*. In doing so, our work is connected to Groseclose and Milyo (2005), Gentzkow and Shapiro (2010), and Greenstein and Zhu (2012). However, in contrast to these contributions, we do not utilize quotes or characteristic phrases, rather we use the tonality of news reports on political parties and politicians based on human-coded media data. Thereby, our contribution addresses the gap that analyzing media bias by "measuring the tone of articles and editorials, is relatively underutilized in economics" (Puglisi and Snyder, 2015a, 664). In addition, we apply *PCI* to study government bias in news reporting. In other words, we analyze whether the media fulfill its role as the fourth estate or whether the media are captured. Therefore, our contribution is also connected to the work of Anderson and McLaren (2012) and Besley and Prat (2006). In contrast to Dewenter et al (2020), we not only analyze the role of the media as a whole but also focus on each single newscast in our media set. In addition, to tackle endogeneity issues, which could not fully be ruled out by Dewenter et al (2020), we utilize elections as an identification tool in our empirical strategy.

3. The Political Positioning of the "Big Four"

3.1 The Data: Political Media Coverage of ABC, CBS, FOX, and NBC News

The Media Dataset

Our dataset, collected by Media Tenor International,[10] comprises news programs by four major US news gathering organizations – *ABC News, CBS News, FOX News,* and *NBC News* – namely *ABC World News Tonight*, the *CBS Evening News*, *NBC Nightly News,* and FOX's *Special Report* from the beginning of 2001 through the end of 2012. We are aware that by focusing on *ABC News, CBS News, FOX News*, and *NBC New*s, we are mixing aired channels (*ABC News, CBS News, and NBC News*) with a cable channel (*FOX News*). However, the distinction of aired and cable channels is not relevant for the analysis provided. In addition, other news organizations, like *CNN*, could also be of interest. Although the selection of the media in our analysis is mainly driven by data availability, *FOX News* has higher ratings than *CNN[11]*. Hence, the selection can be argued from this perspective as well.

Besides anecdotical evidence and scientific work by, among others, Groseclose and Milyo (2005), the "Media Bias/Fact check" website,[12] which sees itself as "the most comprehensive media bias resource," provides information on the political positioning of the *ABC News, CBS News, FOX News,* and *NBC News*:

- *ABC News*, founded in 1945, is the news division of the American Broadcasting Company (*ABC*), which owned by the Disney Media Networks division of The Walt Disney Company. Its flagship program is the daily evening newscast *ABC World News tonight,* which is a focus of our investigation. "Media Bias/Fact check" sees ABC News as having a slight to moderate liberal of left-center bias with a high share of factual reporting.[13]

- *CBS News,* founded in 1927, is the news division of American television and radio service Columbia Broadcasting System (*CBS)*. The president of *CBS News* is Susan Zirinsky. *CBS News* has multiple programs, including the *CBS Evening News,* which is a focus of our investigation. "Media Bias/Fact check" sees *CBS News* to have a slight to moderate liberal or left-center bias with a high share of factual reporting.[14]

- *Fox News* was founded in 1996 by Rupert Murdoch. It is an American cable and satellite news television channel that is owned by the Fox Entertainment Group, a subsidiary of

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[10] For more information see: www.mediatenor.com
[11] See for instance: https://variety.com/2019/tv/news/network-ratings-top-channels-fox-news-espn-cnn-cbs-nbc-abc-1203440870/ (last checked: August, 13th, 2020)
[12] See: https://mediabiasfactcheck.com/ (last checked: August, 13th, 2020).
[13] See https://mediabiasfactcheck.com/abc-news/ (last checked: August, 13th, 2020).
[14] See https://mediabiasfactcheck.com/cbs-news/ (last checked: August, 13th, 2020).

21st Century Fox. One of its news shows is FOX's *Special Report*, which is a focus of our investigation. "Media Bias/Fact check" sees Fox News as having a moderate to strong conservative or right bias with a mixed share of factual reporting.[15]

- *NBC News* was founded in 1940 and is the news division of the American broadcast television network, *NBC*, formerly known as the National Broadcasting Company. The division operates under NBC Universal News Group, a subsidiary *of NBC Universal*, which is, in turn, a subsidiary of Comcast. One of its flagship news programs is the *NBC Nightly News*, which is a focus of our investigation. "Media Bias/Fact check" sees *NBC News* to have a slight to moderate liberal or left-center bias with a high share of factual reporting.*[16]*

Human Coding

Each news program was coded by human analysts, based upon over 700 characteristics that are defined in a binding coding manual ("the codebook"), including the reported topic (such as domestic policy, health reform, military actions, etc.), participating persons (such as politicians, entrepreneurs, managers, celebrities, etc.), participating institutions (such as political parties, companies, football clubs, etc.), region of reference (such as Germany, USA, the UK, world), time reference (future, present, past), and the source of information (such as journalist, politician, expert, etc.). Each report was analyzed news item by news item, i.e. each time that a new topic, person, institution, region, time reference, or source was mentioned, an additional news item was coded. In addition, the analysts captured if the relevant protagonists and/or institutions receive positive, neutral, or negative tone of coverage. Skipping all items that are not on political topics results in a total of 815,252 observations that are used in our analysis.

The use of hand-coded data is an advantage, as "compared to human-based coding, automated coding is less accurate in detecting the tone of each specific text analyzed" (Puglisi and Snyder 2015a, 656). With respect to political text analysis, Grimmer and Steward (2013) find that computer linguistic approaches achieve accuracy no more than 0.65. Consequently, Grimmer and Steward (2013) conclude that, for political text analysis, there is (at least so far) no adequate substitute for human coding. In a similar line, more recently, in their comparative study of hand-coding and computer-assisted text analysis methods, Nelson et al. (forthcoming, 25) conclude that "none of the methods replace the human researcher."[17] Consequently, by now, "measuring the tone of articles and editorials, is relatively underutilized in economics" (Puglisi and Snyder, 2015a, 664). In contrast, for the human coded data utilized in the present contribution, Media Tenor

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[15] See https://mediabiasfactcheck.com/fox-news/ (last checked: August, 13th, 2020).
[16] See https://mediabiasfactcheck.com/nbc-news/ (last checked: August, 13th, 2020).
[17] Earlier comparisons of human coding and computer assisted methods go back to Nacos et al. (1991).

guarantees a minimum accuracy of 0.85 in comparison to a coding that is fully in line with the codebook.[18]

Tone and Tonality

On average, the tone of the news items observed is negative, with a mean of -0.06, confirming the well-known negativity bias of media reporting.[19] In addition, the average tone in the reporting of *FOX News* is, at -0.08, much more negative than the average tone of *ABC News, CBS News*, and *NBC News*, which range from -0.03 to -0.05 (see Table 1).

Table 1: Summary statistics for all newscasts

Medium	Obs	Mean	Std.Dev.	Min	Max
ABC News	135.128	-0.0387558	0.4676518	-1	1
CBS News	121.286	-0.0471695	0.5127805	-1	1
FOX News	394.736	-0.0830707	0.4943626	-1	1
NBC News	164.102	-0.0340642	0.4589244	-1	1
Total	815.252	-0.0605199	.4864011	-1	1

Our dataset covers all political coverage of the newscast analyzed on both Democrats and Republicans during the Republican presidency of George W. Bush as well as the Democratic presidency of Barack Obama. By comparing the tone in media reporting between the time of George W. Bush's administration (see Figure 1) and Barack Obama's administration (see Figure 2), we can observe differences in the political coverage of the newscasts analyzed. Media reporting, for most newscasts, seems to be more critical toward Republicans during their presidency and vice versa for Democrats.

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[18] The accuracy and reliability of the coding was regularly checked by Media Tenor, both with standard tests and random spot checks, based on the codebook. Each month, for each coder, three analyzed reports were selected randomly and checked. Coders scoring lower than 0.80, that is 80 percent accuracy in comparison to the codebook, were removed from the coding process. In no month did the mean deviation among all coders exceeded 0.15. As a result, Media Tenor's data achieves an accuracy of minimum 0.85.

[19] The negativity bias in media reporting indicates that media focus more on catastrophes, crime, as well as threatening political and economic developments than on more positive news (see among others Friebel and Heinz, 2014; Garz, 2013, 2014; Heinz and Swinnen, 2015 or Soroka, 2006).

Figure 1: Share of positive, negative and neutral News during Bush administration
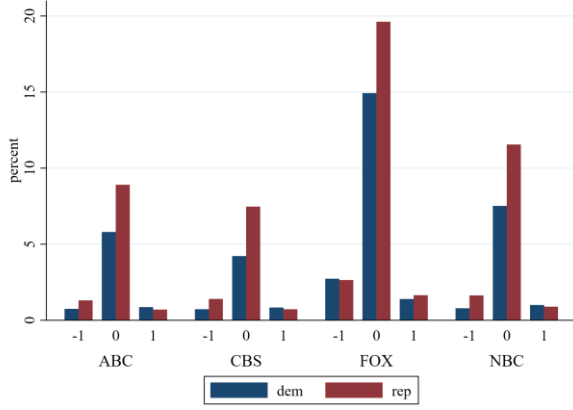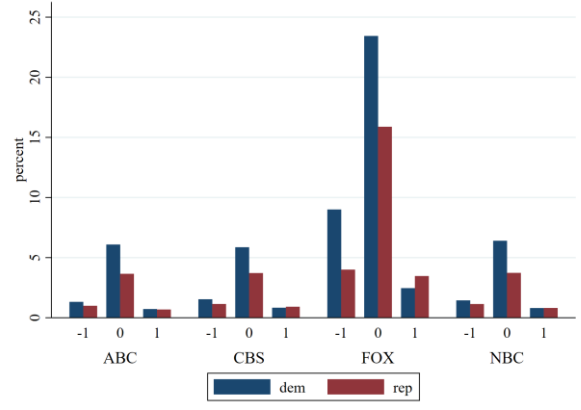

Figure 2: Share of positive, negative and neutral News during Obama administration

Based on the number of positive, negative, and neutral news items, as defined by Dewenter et al. (2020), the tonality s, on a specific person or institution j, extracted from a newscast i, during time t, can be defined as:

$$s_{i,t}^{j} = \frac{n_{i,j,t}^{pos} - n_{i,j,t}^{neg}}{N_{i,j,t}} \tag{1}$$

where $N_{i,j,t}$ is the total of all news items, $n_{i,j,t}^{pos}$ is the number of positively rated reports, and $n_{i,j,t}^{neg}$ the equivalent for negative reports.

3.2 The Political Coverage Index (PCI): A Tonality-Based Measure of Media Bias

The Political Coverage Index (PCI), as introduced by Dewenter et al. (2020), is based on tonalities of news reports about political parties and politicians. PCI serves as a measure of the relative political positioning of the media. Thereby, our contribution addresses the research gap that analyzing media bias by "measuring the tone of articles and editorials, is relatively underutilized in economics" (Puglisi and Snyder, 2015, 664).

By constructing the index, we are able to identify possible media biases and to analyze how critically media cover specific parties, governments, or presidents. The unweighted PCI is constructed by subtracting the average tonality of all news items about the Democrats from the average tonality of the news about the Republicans.[20] The PCI is measured as the difference

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[20] In addition to biased media reporting in terms of tonality, media coverage might be biased by the share of coverage dedicated to one party. In extreme cases, media could neglect to report on a certain party. In order to account for the actual share of coverage of news items, we also define a weighted PCI^w where w_{Rep} stands for the share of coverage of reports on the Republicans and w_{Dem} for the share of coverage on the Democrats [$w_{Rep} + w_{Dem} = 1$]: $PCI_{i,t}^w =$

between the two values, with s_t^{Rep} consisting of the tonality about the Republicans and s_t^{Dem} about the Democrats.

$$PCI_{i,t} = \sum_{j=1}^{n} s_t^{Rep} - \sum_{k=1}^{m} s_t^{Dem} \qquad (2)$$

As per definition of the *PCI*, positive values indicate a more conservative positioning of the media outlet, whereas negative values indicate more liberal reporting. In other words, positive values of the *PCI* indicate less critical coverage of the Republican Party and negative values less critical coverage of the Democratic Party.

3.3 Application of the Media Data to the PCI

By applying the media data described in section 3.1 to the *PCI*, as defined in section 3.2, the picture in Figure 3 emerges. The aggregated *PCI* of all four newscasts varies between -0.40 and +0.79 with an average standard deviation of 0.15. The index starts with relatively high values but also with sharp fluctuations around the events of the terrorist attacks in the period after 9/11 and the Iraq War in 2003. After a dip in 2004, the *PCI* varies around zero until 2007, when it becomes less steady.

Figure 3: Monthly PCI, aggregated for all media with administration
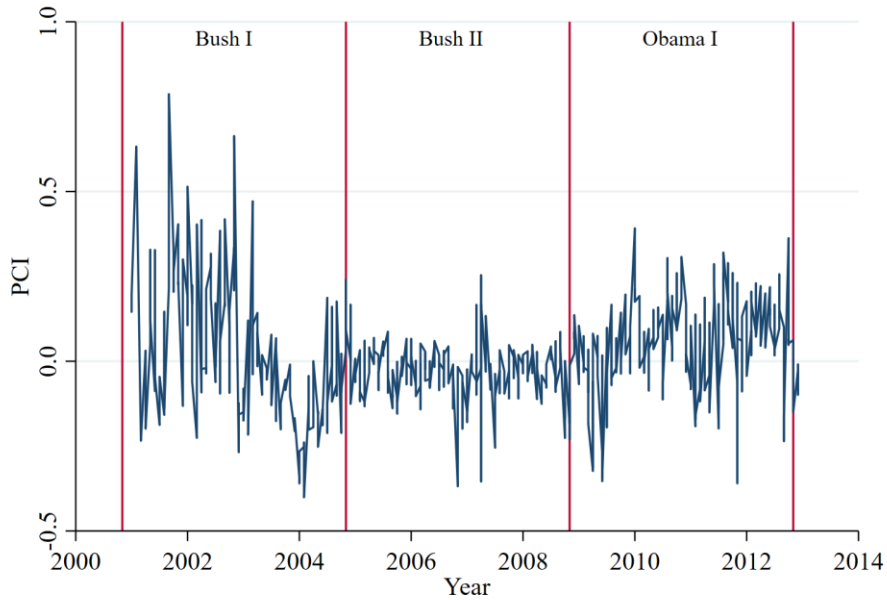

$w_{Rep} \sum_{j=1}^{n} s_t^{Rep} - w_{Dem} \sum_{k=1}^{m} s_t^{Dem}$. We also conduct our analyses with the weighted *PCI*, but the results do not show substantial differences between weighted and unweighted *PCI* (see Table A1 in the Appendix). Therefore, we continue to focus on the unweighted *PCI* in the following sections.

Table 2: Summary statistics for all newscasts: PCI

Medium	Obs	Mean	Std.Dev.	Min	Max
ABC News	143	-0.0126969	0.151564	-0.3595873	0.6633663
CBS News	140	-0.0093912	0.1596853	-0.4005961	0.4712919
FOX News	98	0.1016607	0.0982841	-0.0436856	0.3917593
NBC News	142	-0.0015361	0.1552664	-0.3683450	0.7868421
Total	523	0.0126467	0.1522971	-0.4005961	0.7868421

By splitting the data between the newscasts, we can see differences in the PCI of certain newscasts over time (see Figure 4). The vertical lines indicate a new administration.[21]

*Figure 4: PCI per medium and presidencies*

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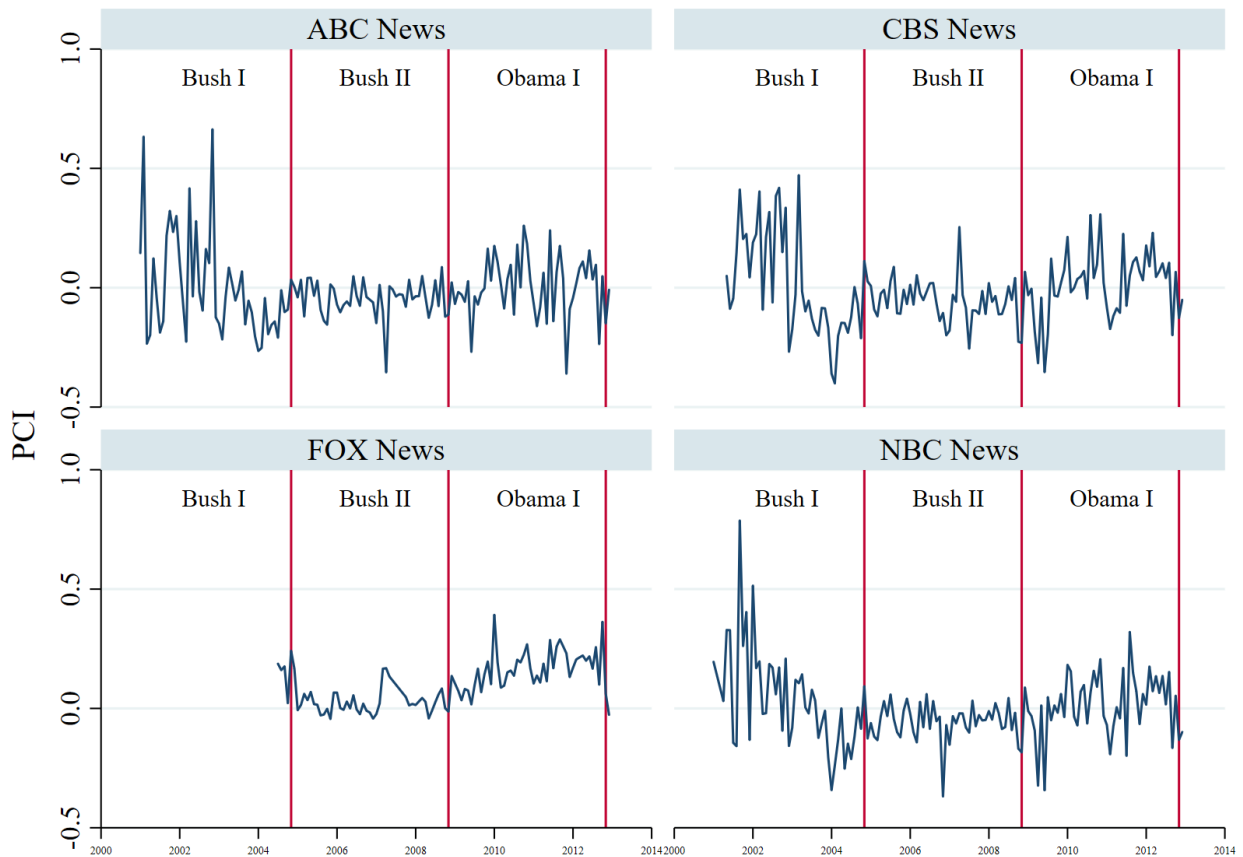
[21] Note that for *FOX* News, the obtained observations only begin in January 2004.

Focusing on the average *PCI* of each medium during the Bush administration (Figure 5) and during the Obama administration (Figure 6), one can see interesting differences in the political coverage of ABC News, CBS News, FOX News, and NBC News.[22]

During the Obama administration (Figure 6), the *PCI* shows positive values for all newscasts, thus indicating that media reporting was more critical to the Democrats in power than to Republicans. This can be seen as a first hint of reporting that is critical of the government during the Obama administration. However, the *PCI* value of *FOX News* is, at +0.17, far higher than the *PCI* values of *ABC News, CBS News,* and *NBC News*, which range from 0.006 to 0.01. This shows how conservative the media reporting of *FOX News* was during the Obama administration.

Figure 5: PCI per medium during Bush administration   Figure 6: PCI per medium during Obama administration
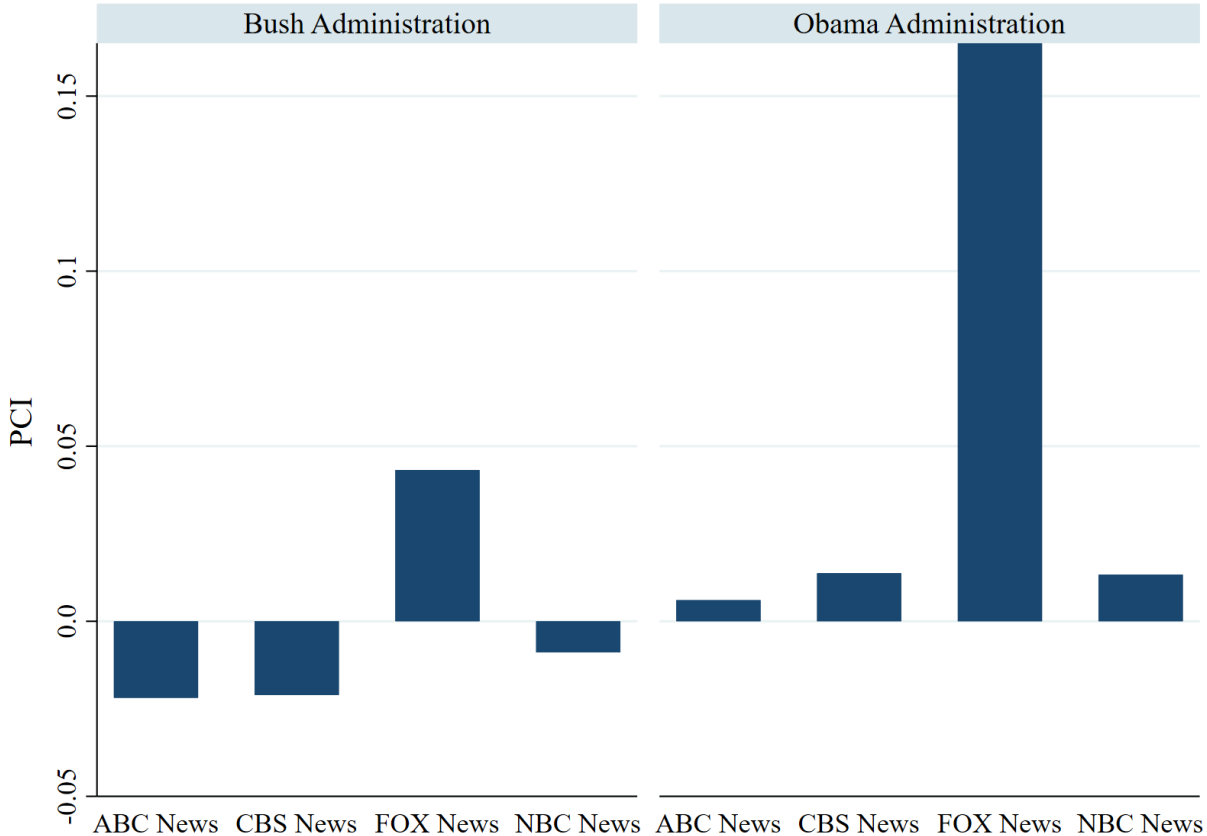
In contrast, during the Bush administration (Figure 5), the *PCI* values of *ABC News, CBS News,* and *NBC News* show negative values, indicating that the media reporting was more critical to the Republicans than on the Democrats. Again, this can be seen as a hint of a government critical reporting, now during the Bush administration. However, the *PCI* values of *ABC News, CBS News,*

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[22] For the aggregated *PCI* for each medium over the whole timespan see Figure A1 in the Appendix.

and *NBC News* during the Bush administration are, from -0.02 to -0.01, much more negative than their positive values during the Obama administration, from +0.006 to +0.1. This can be seen as a hint of the generally republican-critical political positionings of *ABC News, CBS News,* and *NBC News*. The political reporting of *FOX News* during the Bush administration clearly presents a different picture. In contrast to *ABC News, CBS News*, and *NBC News*, during the Bush administration the *PCI* values of *FOX News* are still positive, thus indicating that *FOX News* was still reporting more critically on Democrats even when Republicans were in power. The *FOX News PCI* value is, at +0.04, somewhat smaller than it was during the Obama administration, at +0.17. However, it is still more positive than the *PCI* values for *ABC News, CBS News*, and *NBC News* are negative.

Of course, this simple chart inspection can only provide first hints on systematic differences in the media reporting of the newscasts analyzed and is not a substitute for a robust empirical analysis, which we provide in section 4.

4.   Do the Big Four serve as 4th Estate?

In this section, we investigate the role of the media as the fourth estate by estimating the effect of the presidencies on the political positioning of the media as measured by the Political Coverage Index for each of the four different newscasts in our sample. Expressed in a simple way, we analyze econometrically the obtained *PCI* values of *ABC, CBS, FOX,* and *NBC* during the Republican presidency of George W. Bush and during the Democratic presidency of Barak Obama. If we find robust empirical evidence that media coverage is more critical toward the ruling party, we can confirm the hypothesis that the media serves as an additional level of control for government, thus it is the fourth estate. In section 4.2.1, the results for the entire media set are presented, in section 4.2.2, a more in-depth analysis of each respective newscast in our media dataset.

4.1 Empirical Strategy

4.1.1 Econometric Set Up

To analyze the role of *ABC News, CBS News, FOX News,* and *NBC News* in the US democracy econometrically, we first conduct a basic Ordinary Least Squares (OLS) regression to estimate a model explaining *PCI* as the dependent variable. We include a dummy variable *Democrat,* which represents the presidential incumbent: taking the value of 1 during the Democratic presidency of Obama and 0 during the Republican presidency of Bush.

In addition, to capture at least a part of the factual performance of the government, which is likely to be a major driver of the political media coverage and the *PCI* as well, we add several economic

and geopolitical controls. Specifically, we add monthly variables for the seasonally adjusted unemployment rate (*Unemployment*), the consumer price index (*CPI*), which accounts for all items in the United States with base year 2015, and business tendency surveys for manufacturing as a confidence indicator (*Business*). In addition, we add the geopolitical risk index (*GPR*) to our regressions, which reflects the occurrence of military tensions, terrorist attacks, or similar threats worldwide to account for the role and the self-understanding of the United States as a global superpower.

The regression is then specified as follows: For every media newscast i, the *PCI* is described at time t, as

$$PCI_{i,t} = \beta_0 + \beta_1 Democrat_t + \gamma_1 CPI_t + \gamma_2 Unemployment + \gamma_3 Business_t + \gamma_4 GPR_t + \varepsilon_{i,t} \tag{4}$$

where $Democrat_t$ is a dummy variable indicating that a Democrat is the sitting president of the United States of America at time t, the coefficients β and γ are to be estimated, and ε represents the error term. In order to account for the panel structure of our data, in a next step, we add both media fixed effects as well as month fixed effects to our regression to control for unobserved structural differences between the media as well as for seasonal variations in media coverage. Thus, the regression equation is expanded to the following:

$$PCI_{i,t} = \alpha_i + T_t + \beta_0 + \beta_1 Democrat_t + \gamma_1 CPI_t + \gamma_2 Unemployment + \gamma_3 Business_t + \gamma_4 GPR_t + \varepsilon_{i,t} \tag{5}$$

where α_i and T_t denote media and month fixed effects, respectively.

4.1.2 Identification Strategy

We are aware that conducing this kind of panel regression with media and time fixed effects can still raise legitimate endogeneity concerns for several reasons: First, it cannot be excluded that the presidency not only affects the political positioning of the media measured by the *PCI*, but that their political coverage affects the outcome of elections and, thus president in office. For instance, DellaVinga and Kaplan (2007), Dewenter et al. (2019), and Enikolopov et al. (2011) provide empirical evidence regarding the impact of media reporting on election outcomes and voting intentions. If this is the case, the coefficients in our regression would be biased due to reverse causality. Secondly, although the macroeconomic factors of unemployment rates, the consumer price index, business confidence, and geopolitical risks are controlled for, we cannot fully account for the performance of the government. Therefore, we are unable to determine if the *PCI* values are really driven by the party affiliation of the incumbent or by the performance of the government apart from the "performance indicators" controlled for. If the latter would drive the dependent

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PCI as well as the explanatory dummy variable *Democrat,* which indicates who is in office*,* this would cause biased coefficients due to omitted variables.

To account for the possible endogeneity issues mentioned, we split our sample into different subsamples, consisting of periods with and without elections. In order to do so, we create timespans ranging from four months before the election date up to one month after the election. The intuition behind this approach is, first, that in the four months before the election and, thus, during the campaign, media reporting affects election outcomes, as shown by DellaVinga and Kaplan (2007), Dewenter et al. (2019), and Enikolopov et al. (2011). Specifically, during this time, the coefficients could be biased due to both reverse causality and omitted variable bias, as discussed above. In addition, in the weeks directly after an election another effect could lead to biased results. In the initial weeks following the November presidential election, there is somehow an intermediate period before the elector's election, which takes place on the first Monday after December 12th. During this period, political coverage is often dominated by reporting on electoral success and the new president, who is not even elected by the electors; this coverage of the presidential-elect tends to be positive, with minimal criticism levelled, something standing in stark contrast to subsequent coverage during the subsequent presidential term.[23]

Hence, in our analysis, we focus on time spans other than periods from four months before the election to one month after it. Thus, in our sample, elections and election outcomes are purely exogenous event (or at least less prone to endogeneity). Hence, the endogeneity issue of reverse causality of the *PCI* on the incumbent dummy *Democrat* can be ruled out. In addition, the endogeneity issue that both the dependent *PCI* and the explanatory *Democrat* are driven by the performance of the government apart from the "performance indicators" controlled for can also be ruled out, as in this period *Democrat* is given and purely exogenous. This assumption would not hold if the presidency could end early, with snap elections, a feature that is, in contrast to many other democracies, constitutionally not possible in the US. Table 3 shows all relevant election dates for our dataset.

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[23] We also test variations of the timespans. For example, we test four months before and four months after an election, respectively, and obtain similar results. As the inauguration takes place in January, we expect media reporting to be less influenced by electoral success by then and to have returned to critical coverage. Furthermore, we test for three months before and one month after an election. However, the results show weaker coefficients, hinting at biased results due to reverse causality and omitted variable problems in the fourth month before the election (see Table 4 in comparison to Table A1 in the Appendix).

President	Election	Inauguration	Midterm Elections	End of Term
I G.W. Bush	7 November 2000	20 January 2001	5 November 2002	20 January 2005
II G.W. Bush	2 November 2004	20 January 2005	7 November 2006	20 January 2009
I Obama	4 November 2008	20 January 2009	2 November 2010	20 January 2013
II Obama	6 November 2012	20 January 2013	4 November 2014	20 January 2017

Presidential elections take place every four years in November; this election includes all 435 members of the US House of Representatives and one-third of all seats in the US Senate. Midterm elections are held after two years of a president's term in office, determining all 435 seats in the US House of Representatives as well as one-third of all seats in the US Senate. In our sample, which runs from the beginning of 2001 through the end of 2012, we have data covering three presidential elections and three midterm elections, as shown in Figure 7. For President George W. Bush, the outcome of the 2002 midterm elections, during his first term, generally favored his own party, the Republicans. However, four years later the Democratic Party won a majority of the seats in Congress, resulting in a loss for the governing party. The same pattern in midterm elections occurred during the presidency of Barack Obama in 2010 and 2014, respectively.

Figure 7: Presidential elections and midterm elections
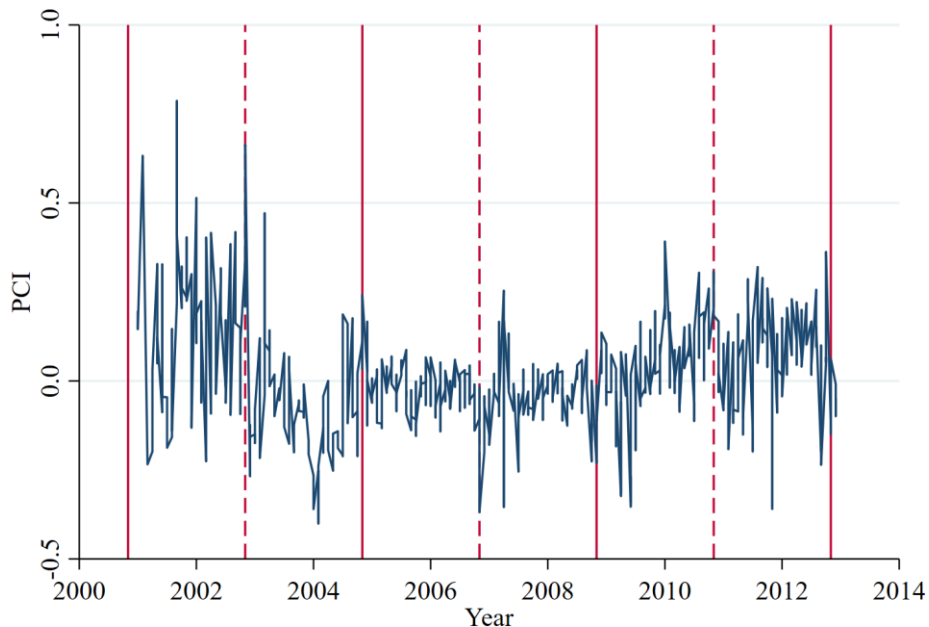
Presidential elections are indicated by solid vertical lines; midterm elections by dashed lines.

4.2 Empirical Results

4.2.1 Average Results on the Big Four

Six different specifications of our empirical investigation on the entire media set are presented in Table 4. Specifications OLS I to OLS III are OLS models, FE I to FE III are the two-way fixed effect regressions. All models estimate the political positioning of the Big Four measured by the *PCI* as the dependent variable and the incumbent dummy (*Democrat*) as main explanatory variable. When the latter is reversed to a Republican presidency, we observe the expected reverted results in our time span analyzed.

Table 4: Impact of the party affiliation of the president on the political positioning of the Big Four
(all media, elections periods: 4/1 months before/after an election)

Dependent variable:	OLS I	OLS II	OLS III	FE I	FE II	FE III
PCI						
Sample	Full sample	Presidential elections periods excluded	Presidential & midterm elections periods excluded	Full sample	Presidential elections Periods excluded	Presidential & midterm elections periods excluded
Democrat	0.157***	0.214***	0.237***	0.175***	0.240***	0.265***
	(0.0459)	(0.0575)	(0.0587)	(0.0446)	(0.0544)	(0.0551)
Consumer Price Index (CPI)	-0.00364**	-0.00396*	-0.00317	-0.00546***	-0.00586***	-0.00511**
	(0.00184)	(0.00204)	(0.00209)	(0.00183)	(0.00205)	(0.00209)
Unemployment	-0.00914	-0.0202*	-0.0321***	-0.0111	-0.0241**	-0.0365***
	(0.00927)	(0.0114)	(0.0120)	(0.00894)	(0.0108)	(0.0113)
Business	-0.0144**	-0.0154**	-0.0178**	-0.0149**	-0.0149**	-0.0174**
	(0.00668)	(0.00752)	(0.00748)	(0.00633)	(0.00707)	(0.00717)
GPR	0.000455***	0.000483***	0.000450***	0.000505***	0.000523***	0.000509***
	(0.000157)	(0.000159)	(0.000170)	(0.000154)	(0.000154)	(0.000169)
Constant	1.728**	1.905**	2.143**	1.918**	2.021**	2.291***
	(0.781)	(0.847)	(0.849)	(0.745)	(0.801)	(0.817)
Observations	523	451	386	523	451	386
R-squared	0.108	0.123	0.119	0.228	0.239	0.233
Month FE	No	No	No	Yes	Yes	Yes
Media FE	No	No	No	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The first specifications, OLS I and FE I, respectively, include the whole sample without any restrictions. For the second specifications, OLS II and FE II, we drop the four months before and one month after a presidential election from our sample. Furthermore, in the third specification, OLS III and FE III, we not only drop the time span of four months before and one month after a presidential election but also around midterm elections; that is, August to December, every two years from 2002 onwards.

The coefficient for a Democratic presidency (*Democrat*) is positive and highly significant for every specification. This indicates that media reporting during Democratic presidencies is generally associated with higher *PCI* values, which can be interpreted as more conservative news coverage. When removing the time span around presidential elections from our sample, this effect intensifies, leading to even more conservative reporting. When excluding all election periods, the effect of the president's party affiliation on the political positioning of the Big Four, as measured by the *PCI,* is even stronger. This can be seen as an indication that, around elections, the coefficients are biased due to the aforementioned endogeneity problems. In addition, the results suggest that critical media coverage accompanies the incumbent president, which hints at the media fulfilling their role as the fourth estate. Both the *CPI* and the business tendency indicator (*Business*) have, in nearly all specifications (despite the *CPI* in OLS III), a significant and slightly negative influence on the *PCI*, suggesting that higher consumer prices or higher business confidence are connected with more conservative reporting. The coefficient for the unemployment rate is insignificant in specifications OLS I and FE I, which is, at least partly, explained by the high correlation between the macroeconomic variables. This could potentially hint at multicollinearity, but the test with variance inflation factors indicates that the degree of collinearity is still tolerable. The coefficient for the geopolitical risk index is highly significant and positively associated with the *PCI*, indicating that, in times with high geopolitical risk, media reporting tends to be less critical of Republicans than of Democrats in comparison to times with lower geopolitical risk. This is in line with the intuition.[24]

In addition, we add both month and media dummies in the fixed effects regressions FE I to FE III. The month dummies are insignificant without exception, whereas the media dummies are significant and differ between the newscasts: ABC News, CBS News, and NBC News are associated with a lower *PCI* and, thus, more liberal reporting, where FOX News positively affects the *PCI*, suggesting more conservative political coverage. We also test the inclusion of dummies for the party holding the majority in the House of Representatives, which can change after every Federal election. As the effect on the *PCI* is unclear and could go in either direction, we drop this variable from further consideration.

Moreover, we verified our identification strategy by estimating the models with different time spans, testing the effect on the *PCI*. By switching the included months from actual election periods to non-election times, we can observe a statistically lower significance and a smaller impact of the presidential dummy on our dependent variable. Thus, we conclude that, in our setting, elections

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[24] See Table A2 in the appendix for regression results using the weighted *PCI*, which are quantitatively identical to the results of regression using the unweighted index.

can be seen as an exogenous event with which we can identify the impact of the party affiliation of the president on the political positioning of the Big Four.

To check if our results are robust to variations in campaign timings, we also varied the number of months before and after an election when campaigns are supposed to happen. Overall, the results are quite stable independent of this variation.[25]

Although our sample is limited and, thus, the number of observations strongly reduced, we also investigate the effects during the election campaign periods in separate regressions (see Table 5). Analyzing the full sample of TV newscasts, the incumbent dummy (*Democrat*) turns insignificant in three of four regressions. Only OLS I shows significant results; however, the coefficient is now negative. This can be seen as an empirical hint of less critical media reporting on the upcoming president during the election campaign. During the campaign, it can become increasingly clear that one candidate has a good chance to become/remain president, which can result in more positive (less critical) reporting on the candidate who is perceived to be likely to win the election. We interpret these results as some evidence for our assumption that the incumbent dummy and the *PCI* are differently linked to each other during election campaigns for several endogeneity problems, which supports our identification strategy to drop election campaigns from our sample.

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[25] See Table A1 in the appendix for regression results using election campaign periods of three months before an election and a honeymoon period of one month. Using the full sample (FE I), the results are similar to those from Table 4. However, on average, the effect of the party affiliation of the running president on the *PCI* seems to be weaker when assuming that election campaigns are three months long.

Table 5: Impact of the party affiliation of the president on the political positioning of the Big Four (all media, elections periods: 4/1 months before/after an election)

Dependent variable:	OLS I	OLS II	FE I	FE II
PCI				
Sample	Presidential election periods only	Presidential & midterm election periods only	Presidential election periods only	Presidential & midterm election periods only
Democrat	-0.708**	-0.00621	-0.666	0.0494
	(0.303)	(0.0947)	(0.479)	(0.0927)
Consumer Price Index (CPI)	0.00582	-0.00562	0.00437	-0.00958*
	(0.00635)	(0.00562)	(0.00951)	(0.00573)
Unemployment	0.316***	0.0543***	0.302	0.0509***
	(0.117)	(0.0151)	(0.192)	(0.0143)
Business	0.135**	0.0102	0.127	-0.00211
	(0.0527)	(0.0164)	(0.0857)	(0.0168)
GPR	-0.000982	0.000592*	-0.00112	0.000565
	(0.00106)	(0.000316)	(0.000904)	(0.000352)
Constant	-15.70**	-0.909	-14.76	0.650
	(6.188)	(2.069)	(10.35)	(2.146)
Observations	60	114	60	114
R-squared	0.112	0.256	0.435	0.410
Month FE	No	No	Yes	Yes
Media FE	No	No	Yes	Yes

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

In summary, so far our econometric analysis shows that when generally analyzing the Big Four newscasts, we can confirm our hypothesis that the newscasts serve as an additional control for governmental activities, thus fulfilling their role as the fourth estate. Based on our identification strategy of dropping election campaign periods from our sample, we find robust empirical evidence that during Democratic presidencies, the coverage of the Big Four is generally more conservative than during a Republican presidency and vice versa. Next, we use a respective identification strategy to analyze the role of each single TV news program separately.

4.2.2 Detailed Results on ABC, CBS, FOX, and NBC News

This section provides a more in-depth analysis of each single newscast in our media set to determine if *ABC News, CBS News, FOX News,* and *NBC News* serve as a fourth estate or not.

For *CBS News*, coefficients indicating the impact of presidential party affiliation on political positioning are positive and statistically significant in all specifications (see Table 6, FE I - III). This shows that *CBS News* reports are more conservative if a Democrat is in office and vice versa. This government-critical reporting by *CBS News* is stronger than the average government-critical reporting of the Big Four (see Table 4). Dropping election campaign windows with respect to presidential and midterm elections from our sample (see Table 6, FE III), the incumbent dummy shows, with a coefficient of 0.313, the strongest effect of presidential party affiliation on the political positioning of *CBS News*. This can be seen as an indicator that, during election campaigns, the results are biased due to the several aforementioned endogeneity problems. In specification FE III, two additional coefficients are significant. A higher unemployment rate is connected with more liberal reporting by *CBS News*, whereas high geopolitical risk is connected to more conservative reporting. This follows intuition. As the results show robust empirical evidence on government-critical reporting by *CBS News*, we conclude that *CBS News* did serve as fourth estate, at least during our sample period.

Results for *NBC News* draw a similar picture. The coefficients indicating the impact of presidential party affiliation on political positioning are positive and statistically significant in all specifications (see Table 6, FE IV - VI). This suggests that *NBC News* reports are more conservative when a Democrat is in office and vice versa. Dropping election campaign times with respect to presidential and midterm elections from our sample due to endogeneity problems, the incumbent dummy shows, with a coefficient of 0.327, the strongest effect of presidential party affiliation on the political positioning of *NBC News* (see Table 6, FE VI). Thus, *NBC News* appears to be even more government-critical than *CBS News*. In specification FE VI, three more coefficients are significant. A higher consumer price index connects with more liberal reporting by *NBC News*. However, this coefficient is only significant at the 10 percent level. Additionally, a higher unemployment rate is connected with a more liberal reporting by *NBC News*, while periods of high geopolitical risk are connected with more conservative reporting. Again, this follows the intuition. As the results show robust empirical evidence of government-critical reporting by *NBC News*, we conclude that *NBC News* did serve as fourth estate, at least during our sample period.

Table 6: Impact of the party affiliation of the president on the political positioning of CBS News & NBC News (election periods: 4/1 months before/after an election)

Dependent variable: **PCI**	FE I CBS News	FE II CBS News	FE III CBS News	FE IV NBC News	FE V NBC News	FE VI NBC News
Sample	Full sample	Presidential elections periods excluded	Presidential & midterm elections periods excluded	Full sample	Presidential elections Periods excluded	Presidential & midterm elections periods excluded
Democrat	0.195**	0.283***	0.313***	0.220**	0.295***	0.327***
	(0.0879)	(0.103)	(0.106)	(0.0935)	(0.111)	(0.113)
Consumer Price Index (CPI)	-0.00401	-0.00477	-0.00399	-0.00722**	-0.00781**	-0.00713*
	(0.00319)	(0.00353)	(0.00376)	(0.00334)	(0.00366)	(0.00376)
Unemployment	-0.0193	-0.0370*	-0.0524**	-0.0216	-0.0372*	-0.0516**
	(0.0182)	(0.0212)	(0.0221)	(0.0188)	(0.0223)	(0.0235)
Business	-0.0105	-0.00944	-0.0138	-0.0254*	-0.0227	-0.0257
	(0.0132)	(0.0158)	(0.0162)	(0.0136)	(0.0154)	(0.0156)
GPR	0.000745***	0.000772***	0.000683**	0.000509**	0.000538**	0.000616**
	(0.000260)	(0.000266)	(0.000285)	(0.000212)	(0.000213)	(0.000254)
Constant	1.365	1.418	1.889	3.192**	3.046*	3.367**
	(1.426)	(1.638)	(1.699)	(1.550)	(1.678)	(1.688)
Observations	140	122	104	142	124	106
R-squared	0.237	0.281	0.232	0.205	0.229	0.253
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Turning to the results for *FOX News*, a different picture is drawn. None of the coefficients indicating the impact of presidential party affiliation on the political positioning of *FOX News* are statistically significant (see Table 7, FE I - III). This shows that *FOX News* does not changing its political positioning significantly, regardless of who is in the Oval Office. These results are in line with the descriptive statistics, which show that *FOX News* reports are always more critical of Democrats than of Republicans (see Figure 5 and Figure 6). In specification FE III, which drops both presidential and midterm election campaign times from our sample due to endogeneity problems, only one coefficient is significant. A higher consumer price index connects with even more conservative reporting by *FOX News*. As the results show no empirical evidence of government-critical reporting by *FOX News,* we cannot find any evidence that *FOX News* serves as fourth estate, at least during the period under study.

Finally, focusing on *ABC News* exclusively, none of the coefficients indicating the impact of presidential party affiliation on the political positioning of *ABC News* are statistically significant (see Table 7, FE IV - VI). Hence, based on the econometric analysis provided, we do not find evidence that *ABC News* can be seen as the fourth estate, at least during our sample period.

While both *FOX News* and *ABC News* do not seem to serve as a fourth estate, their respective political coverage clearly differs. While the average *PCI* of *ABC News*, at -0.01269, indicates rather liberal reporting, the average *PCI* of *FOX News*, at 0.10166, indicates strongly conservative reporting on average. In addition, descriptive statistics show that, on average, *ABC News* reports are more liberal during Republican presidencies and more conservative during Democratic presidencies, whereas *FOX News* reports are always more critical of Democrats than of the Republicans, regardless of who is the Oval Office (see Figure 5 and Figure 6). However, the varying political positioning of *ABC News* dependent on presidential party affiliation is not statistically significant.

Table 7: Impact of the party affiliation of the president on the political positioning of FOX News & ABC News (election periods: 4/1 months before/after an election)

Dependent variable: **PCI**	FE I FOX News	FE II FOX News	FE III FOX News	FE IV ABC News	FE V ABC News	FE VI ABC News
Sample	Full sample	Presidential elections periods excluded	Presidential & midterm elections periods excluded	Full sample	Presidential elections Periods excluded	Presidential & midterm elections periods excluded
Democrat	0.0376 (0.0559)	0.0720 (0.0759)	0.101 (0.0826)	0.117 (0.0912)	0.144 (0.113)	0.146 (0.112)
Consumer Price Index (CPI)	0.00343 (0.00236)	0.00851*** (0.00281)	0.00829*** (0.00296)	-0.00560 (0.00352)	-0.00568 (0.00392)	-0.00516 (0.00403)
Unemploy-ment	0.0153 (0.0137)	0.000698 (0.0155)	-0.00768 (0.0172)	-0.00187 (0.0186)	-0.00747 (0.0226)	-0.0121 (0.0233)
Business	0.0181*** (0.00682)	0.0158** (0.00686)	0.0122 (0.00730)	-0.0206* (0.0113)	-0.0227* (0.0122)	-0.0239* (0.0124)
GPR	0.000302 (0.000492)	-0.000103 (0.000458)	0.000203 (0.000702)	0.000225 (0.000265)	0.000212 (0.000260)	0.000146 (0.000270)
Constant	-2.143*** (0.709)	-2.256*** (0.688)	-1.853** (0.739)	2.446* (1.353)	2.695* (1.422)	2.806* (1.470)
Observations	98	80	68	143	125	108
R-squared	0.458	0.635	0.584	0.128	0.161	0.122
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

5. Conclusion

In this contribution, we investigate if the four big US news gathering organizations – *ABC News, CBS News, FOX News,* and *NBC News* – (still) fulfill their role as the fourth estate in the US democracy. Specifically, we analyze the political positioning of *ABC World News Tonight*, the *CBS Evening News*, *NBC Nightly News,* and FOX's *Special Report,* based on the tonality of their political coverage as well as the variation of their positioning depending on the president. Beside the general review of the TV news programs mentioned, we analyze the political coverage of each single newscast in the media set to investigate the existence of a government or anti-government bias. Put differently, we analyze if *ABC News, CBS News, FOX News,* and *NBC News* deliver as fourth estates or if they are loyal servants to only one party and, as such, can be seen as ideological from this perspective.

Our analysis is based on more than 815,000 human-coded news items from the aforementioned newscasts regarding Democrats and Republicans from 2001 through 2012. Human coding is an advantage of our inquiry as human coding, in comparison to computer linguistic approaches, achieves greater accuracy, especially when it comes to topical context and tonality. Hence, the data allow us to focus on the tonality of the political reporting of the four big US newscasts mentioned. In doing so, our contribution addresses the gap that analyzing political media coverage by "measuring the tone of articles and editorials, is relatively underutilized in economics" (Puglisi and Snyder 2015, 664).

By using the tonality-based Political Coverage Index (*PCI*) introduced by Dewenter et al. (2020), we find interesting difference in the political coverage of *ABC News, CBS News, FOX News,* and *NBC News*: During the Democratic presidency of Barak Obama, the *PCI* shows positive values for all newscasts, thus indicating that media reporting was more critical of the Democrats in power than of the Republicans. This can be seen as a first hint of government critical reporting during the Democratic presidency. However, the *PCI* value of *FOX News* is, by far, higher than the *PCI* values of *ABC News, CBS News, and NBC News*. This demonstrates how conservative *FOX News* reports were during the Obama presidency. In contrast, during the Republican presidency of George W. Bush, the *PCI* values of *ABC News, CBS News,* and *NBC News* are negative, indicating that media reports were more critical of the Republicans than of the Democrats. Again, this can be seen as a hint of government critical reporting, this time during the Bush administration. However, the *PCI* values of *ABC News, CBS News,* and *NBC News* during the Bush administration are much more negative than their respective positive values during the Obama administration. This can be seen as a hint of a more general republican-critical political positioning of *ABC News, CBS News*, and *NBC News* – the so-called liberal media bias. Political reporting by *FOX News* during the Bush administration clearly presents a different picture: During the Bush administration, the *PCI* values

of *FOX News* are still positive, indicates that *FOX News* reports were still more critical of the Democrats than of the Republicans in power, thus showing a strong conservative bias. However, this simple inspection can only provide first hints of systematic differences in the media reporting of the newscasts analyzed and is not a substitute for a robust empirical analysis.

Hence, we provide panel regression analysis with media and time fixed effects as well as a multitude of economic and geopolitical controls to capture at least a part of the factual performance of the government, which is also likely to be a major driver of the political media coverage. However, with these measures, we still cannot rule out certain serious endogeneity issues: If, for instance, the political positioning of the media would not just be affected by the party affiliation of the president in office, but the election results would be affected by the political positioning of the media as well, this would lead to biased coefficients due to reverse causality. Furthermore, if both the political positioning of the media as well as the election outcome are affected by the uncaptured part of the performance of the government, this would lead to biased coefficients due to omitted variables. Hence, we drop a window of time around the elections from our data. Consequently, our analysis is based on the remaining part, when elections can be seen as a purely exogenous event. Therefore, we are able to use elections as an identification tool.

When using the entire media set, the results of the econometric analysis show robust empirical results for an anti-government bias: When a Republican is in office, political coverage tends to be more liberal, but it tends to be more conservative if the president is a Democrat. This can be seen as empirical evidence that the media analyzed serve as a fourth estate in the US. However, the observed behavior of the media does not say anything about the motives behind it. Besides "honorable motives" for fourth estate-behavior, it could simply be the case that the media try to improve their circulation and viewing figures for economic reasons by covering more newsworthy and attractive stories. If media coverage is, in this sense, biased toward power and negativity, then media coverage would "automatically" show the anti-government bias observed. However, although their underlying motives would be different in this case, their actual behavior media would still fulfill their role as the fourth estate.

Again, interesting differences emerge, when focusing on each single newscast in the media set: For *CBS News* and *NBC News,* we find robust empirical evidence for an anti-government-bias. Starting from a moderate liberal positioning, the political coverage of *CBS News* and *NBC News* becomes more conservative under a Democratic president and becomes more liberal under a Republican president. We see this as evidence that *CBS News* and *NBC News* are fulfilling their role as the fourth estate in the democracy. The econometric analysis of the political reporting of *FOX News* presents a clearly different picture. Here, we cannot find robust empirical evidence that *FOX News* significantly changes its position depending upon the party affiliation of the president in office. On average, *FOX News* reports are always much more critical of Democrats than of

Republicans. Hence, *FOX News* can be seen as a loyal servant to only one party and as ideological from this perspective, rather than acting as a fourth estate in the democracy. Finally, we do not find robust empirical evidence that ABC significantly changes its position depending on the party affiliation of the president in office. Although the descriptive statistics show a slight liberal positioning and a certain tendency toward government-critical reporting by *ABC News*, the variation is not statistically significant. Hence, based on the econometric analysis provided in our contribution, *ABC News* cannot be seen as a fourth estate in the democracy.

Based on these results, future research could focus on different countries as well as on specific policy issues (foreign policy, domestic policy, economic policies, etc). Additionally, it would be interesting to connect the results to the effects of media reporting on perception and behavior, with the aim of investigating if the impact of partisan and fourth estate media differ and change over time.

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Appendix: Figures
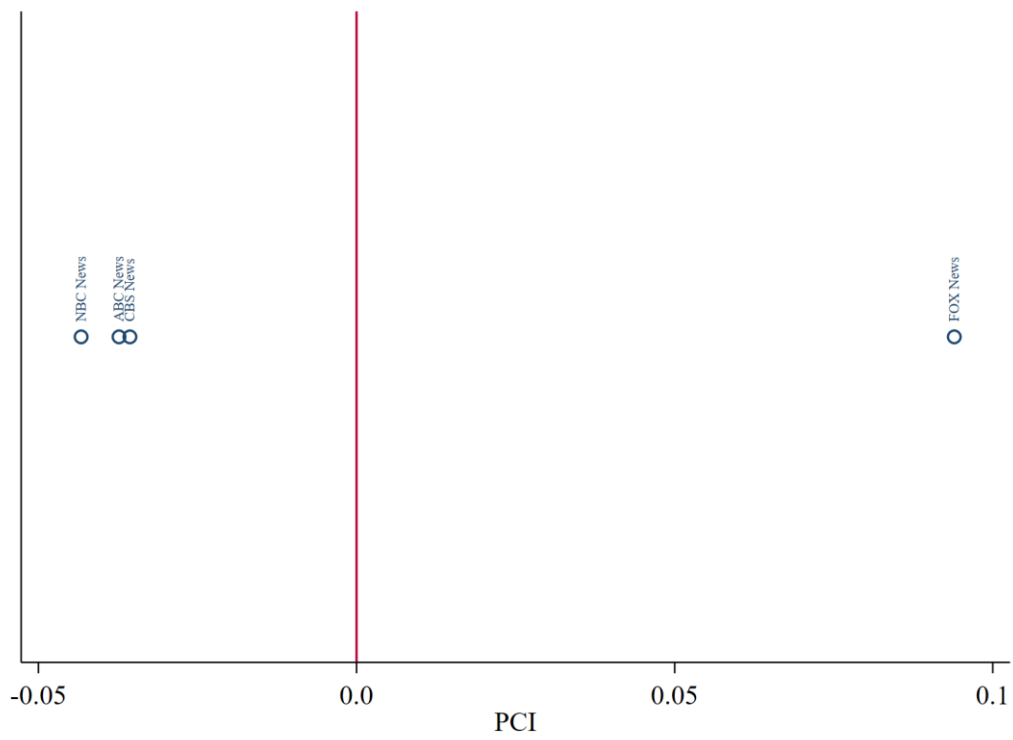
Figure A1: PCI comparison, aggregated for each medium
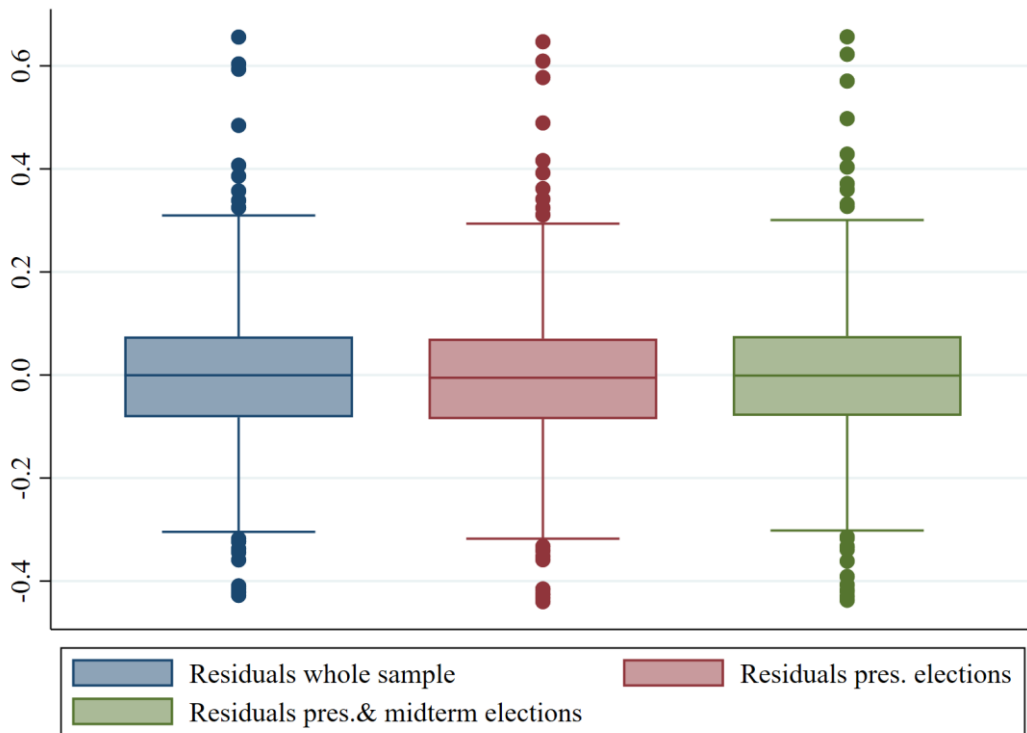

Figure A2: Residuals compared

Figure A3: Residuals over time with (presidential and midterm) election periods
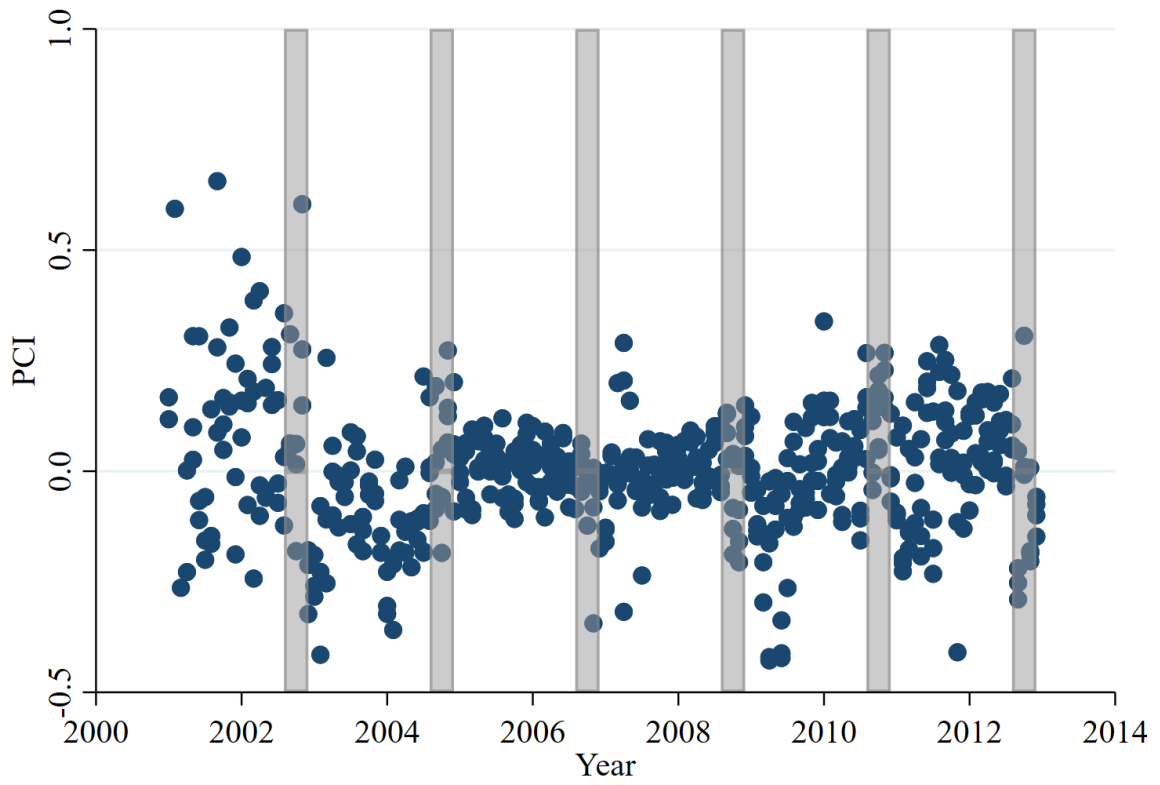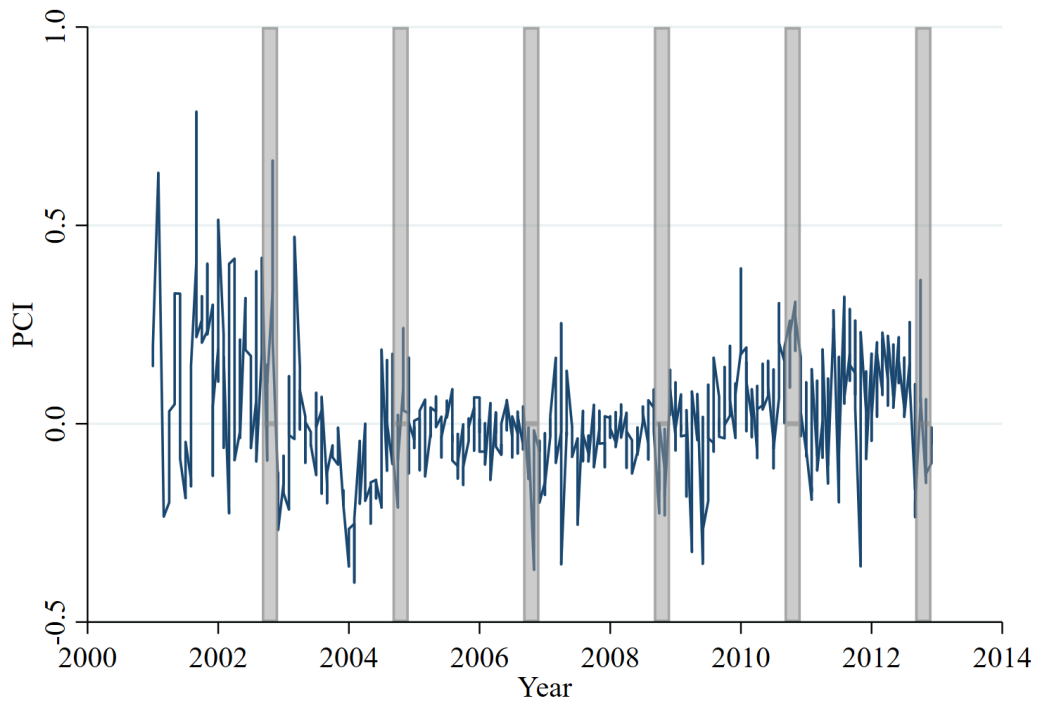

Figure A4: Election campaign period

Appendix: Tables

Table A1: Link/Impact of the party affiliation of the president on the political positioning of the Big Four
(Full Sample, election period: 3/1 months before/after an election)

Dependent variable: **PCI**	OLS I	OLS II	OLS III	FE I	FE II	FE III
Sample	Full sample	Presidential elections periods excluded	Presidential & midterm elections periods excluded	Full sample	Presidential elections Periods excluded	Presidential & midterm elections periods excluded
Democrat	0.157***	0.193***	0.214***	0.175***	0.211***	0.235***
	(0.0459)	(0.0532)	(0.0540)	(0.0446)	(0.0511)	(0.0514)
Consumer Price Index (CPI)	-0.00364**	-0.00326*	-0.00261	-0.00546***	-0.00478**	-0.00423**
	(0.00184)	(0.00195)	(0.00196)	(0.00183)	(0.00198)	(0.00199)
Unemployment	-0.00914	-0.0168	-0.0285**	-0.0111	-0.0199*	-0.0318***
	(0.00927)	(0.0108)	(0.0112)	(0.00894)	(0.0102)	(0.0106)
Business	-0.0144**	-0.0168**	-0.0193***	-0.0149**	-0.0164**	-0.0188***
	(0.00668)	(0.00743)	(0.00738)	(0.00633)	(0.00692)	(0.00697)
GPR	0.000455***	0.000483***	0.000444***	0.000505***	0.000528***	0.000510***
	(0.000157)	(0.000159)	(0.000168)	(0.000154)	(0.000155)	(0.000167)
Constant	1.728**	1.972**	2.233***	1.918**	2.061***	2.327***
	(0.781)	(0.839)	(0.838)	(0.745)	(0.787)	(0.796)
Observations	523	463	409	523	463	409
R-squared	0.108	0.122	0.116	0.228	0.236	0.230
Month FE	No	No	No	Yes	Yes	Yes
Media FE	No	No	No	Yes	Yes	Yes

Robust and clustered standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

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Table A2: Regression Output: Weighted PCI
(Full Sample, election period: 4/1 months before/after an election)

Dependent variable: PCI	(1) OLS I	(2) OLS II	(3) OLS III	(4) FE I	(5) FE II	(6) FE III
	Full sample	Presidential elections periods excluded	Presidential & midterm elections periods excluded	Full sample	Presidential elections Periods excluded	Presidential & midterm elections periods excluded
Democrat	9.39e-07***	1.10e-06***	1.24e-06***	1.06e-06***	1.22e-06***	1.37e-06***
	(2.97e-07)	(3.43e-07)	(3.45e-07)	(2.95e-07)	(3.40e-07)	(3.40e-07)
Consumer Price Index (CPI)	-2.54e-08**	-2.23e-08*	-1.76e-08	-3.35e-08***	-2.81e-08**	-2.43e-08*
	(1.24e-08)	(1.31e-08)	(1.31e-08)	(1.24e-08)	(1.33e-08)	(1.33e-08)
Unemployment	-6.51e-08	-1.01e-07	-1.79e-07**	-8.16e-08	-1.25e-07*	-2.03e-07***
	(5.93e-08)	(6.94e-08)	(7.11e-08)	(5.91e-08)	(6.88e-08)	(7.05e-08)
Business	-1.08e-07**	-1.24e-07**	-1.40e-07***	-1.08e-07**	-1.22e-07**	-1.37e-07***
	(4.50e-08)	(5.04e-08)	(4.98e-08)	(4.32e-08)	(4.78e-08)	(4.79e-08)
GPR	3.37e-09***	3.52e-09***	3.20e-09***	3.62e-09***	3.73e-09***	3.55e-09***
	(1.11e-09)	(1.12e-09)	(1.18e-09)	(1.10e-09)	(1.10e-09)	(1.19e-09)
Constant	1.27e-05**	1.42e-05**	1.59e-05***	1.34e-05***	1.46e-05***	1.63e-05***
	(5.26e-06)	(5.68e-06)	(5.66e-06)	(5.05e-06)	(5.38e-06)	(5.43e-06)
Observations	523	463	409	523	463	409
R-squared	0.103	0.112	0.109	0.169	0.184	0.175
Month FE	No	No	No	Yes	Yes	Yes
Media FE	No	No	No	Yes	Yes	Yes

Robust and clustered standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

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