Opportunistic Political Central Bank Coverage: Does media coverage of ECB's Monetary Policy Impacts German Political Parties' Popularity?

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Abstract

We define the concept of Opportunistic Political Central Bank Coverage (OPCBC) which corresponds to an opportunistic modification of parties' popularity induced by media coverage of monetary policy. More precisely, we suppose that the treatment of monetary policy in the press has a significant impact on the popularity of national political parties prior to an election. To investigate on the existence of this concept, we collect monthly popularity ratings for 6 German political forces on the period between January 2005 and December 2021. Then, we measure media coverage through a textual analysis on more than 26.000 press articles from 6 different German newspapers. Finally, we estimate popularity functions for these German political parties in which we introduce our textual measures interacted with a dummy taking the value 1 in the month prior to an election. Our analysis underlines the existence of OPCBCs in Germany in the month preceding federal elections and elections to the European Parliament. This result is robust to the use of a SUR model, alternative pre-electoral periods, the implementation of two different tone analysis, the use of Google Trends data and the interest of the public for members of the ECB. Finally, it seems that the existence of OPCBCs depend on the partisanship of the media studied.

Keywords: European Central Bank; Press; Textual Analysis; Tone Analysis; Elections; Political Cycles; Germany

JEL Codes: E58; D72; P35

"Clear and effective communication is very important to us."

European Central Bank Media Page[a]

[a] https://www.ecb.europa.eu/press/html/index.en.html

1 Introduction

In the European Central Bank (ECB) Knowledge & Attitudes survey conducted in May 2021 to Euro Area citizens[1] (Gardt et al., 2022), 87% of the respondents answered that they have heard of the ECB. At the same time, 55% of them indicate they are not interested in the ECB and 39% consider financing governments as one of the ECB objectives.

While official communication, controlled and carefully written,[2] to financial markets and investors greatly increased, central bankers also focus on improving their communication to the main public. But in the Euro Area, information related to monetary policy is coming to households not directly from the central bank who communicates mainly in English. It comes from national media including television, printed and online press as well as the radio. A media might, consciously or not, misinterpret central bank communication due to its high level of complexity (Ferrara and Angino, 2022; Hayo et al., 2022) and a certain lack of readability (Munday and Brookes, 2021) and clarity (Huang and Simon, 2021). This leads to public reluctance to economics in general (Haldane et al., 2020) and may have significant impact on vote behaviour as it favours populist parties that often focus on central banks in their anti-elite communication (Guriev and Papaioannou, 2022). More generally, as developed by Fernández-Albertos (2015), central banks are unequivocally political institutions and their politicisation have increased in recent times due to: (i) the impact of the 2008 global financial crisis on central banks political independence (de Haan and Eijffinger, 2016; Balls et al., 2018; Hofmann et al., 2021); (ii) the recent rise of populism (Goodhart and Lastra, 2018; Rodrik, 2018; Masciandaro and Passarelli, 2020) and (iii) the increasing political pressures faced by central bankers (Binder, 2021). Then, despite their highly technocratic roots, central banks impact national politics as monetary policy has distributional effects (Doepke et al., 2015; Bonifacio et al., 2021) but also because central bank communication is a significant determinant of investors behaviour (Bennani, 2020), financial market inflation expectations (Picault et al., 2022) and firms' and consumers' expectations (Pinter and Kočenda, 2023). In this context, it is of high importance to study these links

[1] Detailed results are provided here: https://www.ecb.europa.eu/ecb/access_to_documents/document/pa_document/shared/data/ecb.dr.par2022_0007_knowledge_attitudes_survey2021.en.pdf

[2] See the Article 4.1 of the Code of Conduct for high-level ECB Officials published at the Official Journal of the European Union on 8th March 2019 (Available here: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019XB0308(01)): "*[M]embers and alternates shall not disclose any information covered by the obligation of professional secrecy obtained in the exercise of their duties and responsibilities that has not been made public and is not accessible to the public (hereinafter 'confidential information') except deliberately as part of the agreed communication strategy of the ECB.*"

between monetary policy and national politics as European integration represents a more and more key political issue in European media coverage (Helbing and Tresch, 2011), parties' manifestos (Popa and Dumitrescu, 2015) and party competition in general (Whitefield and Rohrschneider, 2015).

To do so, we define the concept of Opportunistic Political Central Bank Coverage (OPCBC) as follows: an opportunistic impact on political parties popularity induced by the occurrences of monetary policy related topics on newspapers prior to an election. Comparable to the pre-electoral phase of an opportunistic political cycle (Nordhaus, 1975),[3] press articles that mention monetary policy exercise an opportunistic influence on households. In other words, press coverage of monetary policy decisions made by the central bank advantage or disadvantage political parties.

We develop a schematic representation of this hypothesised mechanism of OPCBC in Figure 1. In the first part of Figure 1, we present the theoretical link between the implementation of the pre-electoral phase of a classic political monetary cycle and its effects on popularity (Nordhaus, 1975). Monetary policy prior to an election produces a certain economic outcome that voters observe. Then, this information is internalised by voters and they modify their political preferences. For instance, a good (bad) economic performance is supposed to have a positive (negative) impact on incumbent's popularity. This positive (negative) effect would increase (decrease) its chances to be reelected through its popularity. The theoretical mechanism beyond OPCBC passes through media coverage of monetary policy which is more indirect (see the second part of Figure 1). This hypothesised phenomenon is in line with the model of the two step flow of communication (Lazarsfeld et al., 1944; Katz and Lazarsfeld, 1955). According to this theory, media coverage do not influence directly individual opinions. More precisely, ideas expressed in the media flow from mass media to "opinion leaders". Then, these "opinion leaders" interpret media coverage and give information to their "followers". Consequently, opinions are formed indirectly, through the lens of "opinion leaders". Considering journalists as opinion leaders,[4] media coverage of monetary policy should impact economic preferences of voters[5] and then their political preferences through the OPCBC.

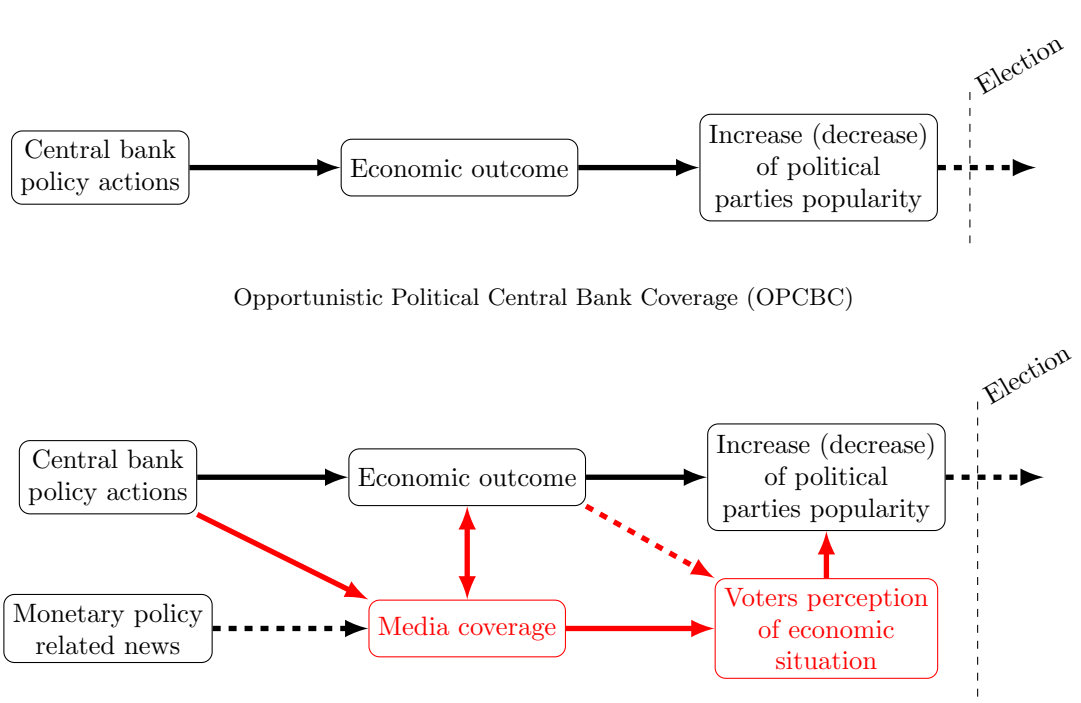
Focusing on the case of Germany, early stages of an OPCBC can be found in the work of Hayo and Neuenkirch (2014). The authors underline that being informed on the ECB through newspapers has a negative impact on the degree of trust in the European Union (EU) monetary policy. Then, media coverage of ECB's policy actions is impacting voters' perception of the EU. As demonstrated by van Spanje and de Vreese (2014), a voter exposed to a positive (negative) evaluation of the EU is less (more)

[3] More precisely, we can compare the OPCBC to the pre-electoral phase of an opportunistic political monetary cycle, *i.e.* a significant impact of monetary policy related topics on parties popularity. See Oriola (2023) for a recent literature review on political monetary cycles.

[4] One can argue that the emergence of social media may have decreased the important of journals and journalists as "opinion leaders". However, according to Dubois and Gaffney (2014) or Alexandre et al. (2021), journalists can also be considered as "opinion leaders" on social media.

[5] On the validity of the two step flow of communication framework in the formation of political ideas, see Granato and Krause (2000).

Figure 1: Transmission of Central Bank Policy Actions into an OPCBC



This figure is adapted from Picault et al. (2022) and present the differences between the standard definition of the political monetary cycle and the hypothesized mechanism of OPCBC studied in this paper.

likely to vote for an openly eurosceptic[6] political party. More generally, as hypothesised in the definition of OPCBCs, media coverage of the monetary policy implemented by the ECB is (directly or indirectly) impacting national politics.

To identify these pre-electoral phenomena, we estimate several updated popularity functions of the 6 German main political forces between 2005 and 2021.[7] In our popularity functions, we introduce the occurrences of monetary policy related terms from 5 different German newspapers interacted with a dummy taking the value 1 on the month prior to an election. We interpret the significance of the interaction term as a proof of the existence of an OPCBC. Then, through this methodology, this paper is characterized by several noticeable contributions. First, we define the concept of OPCBC and presents evidences of its pertinence in Germany. Second, using updated German popularity functions during the recent political period, we investigate the OPCBC on two types of election: in *Bundestag* and in the European Parliament (EP). We are able to identify OPCBC at national level before both federal and EP elections. Third, as we study 6 main political forces, we underline several heterogeneities in terms of OPCBCs across political parties. Before federal elections, the cycles favour *SPD* and *FDP* while penalising other parties. In the case of EP elections, the more eurosceptic is a party, the more penalized

[6] See Mudde (2012) for more information on the ongoing debates among the literature on euroscepticism.

[7] We update the estimation of popularity functions on Germany. Indeed, to our knowledge, the last study estimating German popularity functions has been performed by Williams et al. (2017) on the period January 1993m1-2011m12. In this study, we concentrate on a more recent period (2005m1-2021m12). This leads us to elaborate on the political events impacting German parties' popularity (see Table A1). This investigation allows us to consider *AfD* within our study contrary to the existing literature.

it is by the OPCBC. Finally, we implement a sentiment analysis that confirms the underlines OPCBCs are also dependent on the tone of press articles dealing with monetary policy.

This study proceeds as follows. Section 2 details the three strands of literature used in this study. Then, Section 3 discusses the data and displays some summary statistics. Section 4 presents the econometric specifications. Results using occurrences measures are displayed in Section 5 and results using sentiment measures in Section 6. Finally, Section 7 presents robustness checks and Section 8 concludes.

2 Literature Review

In this paper, we investigate the impact of German media coverage of ECB policy actions on the popularity of German political parties. To do so, we define the concept of OPCBC comparable to a traditional opportunistic political cycle (Nordhaus, 1975) induced, voluntarily or not by the media. We consider that occurrences of monetary policy related topics in the media may have a significant impact on parties popularity comparable to the pre-electoral effect of an opportunistic political monetary cycle.[8] This study mobilises four distinct literature strands: the study of political cycles Nordhaus (1975); Hibbs (1977); the impact of media coverage on economic events (Hetherington, 1996); the estimation of popularity functions (Goodhart and Bhansali, 1970; Mueller, 1970); and the study of the content of media articles (Loughran and McDonald, 2016).

First, as OPCBCs are considered as opportunistic political phenomenon (*i.e.* happening before the scrutiny to impact parties popularity), the literature on political cycles is crucial in our approach. This literature has developed through seminal works of Nordhaus (1975) and Hibbs (1977). On the one hand, Nordhaus (1975) theorised the opportunistic approach of the cycle that defines pre-electoral political cycles due to the will of incumbents to stay in power. On the other hand, Hibbs (1977) developed the partisan approach that considers post-electoral political cycles induced by significantly different economic policies implemented by right- and left-wing incumbents. Throughout this paper, we study a political phenomenon defined as opportunistic party by party (*i.e.* differentiating by partisan characteristic of German parties) mixing these two approaches. In other words, we consider the impact of an opportunistic phenomenon on political parties characterised by different partisan characteristics. This type of "*mixed*" approach is particularly important in recent studies dealing with political monetary cycles (Clark and Arel-Bundock, 2013; Dentler, 2019; Menuet et al., 2021). It seems appropriate in our study as *Bundesbank* has already experienced opportunistic political monetary cycles despite its independence level (Sieg, 1997; Vaubel, 1997; Lohmann, 1998; Berger et al., 2001).

Second, the composition of media coverage on central banking obtained has to be confronted to the economy. Then, our approach needs to study the impact of press articles dealing with economic

[8] For more information on political monetary cycle, see Oriola (2023).

performance, events or figures and its impact on voting behaviour (Hetherington, 1996). Validation of this result can be found in recent studies on the United States (Garz and Martin, 2021), members of the EU (Jonkman et al., 2020) or the United Kingdom (Basu, 2022). However, the only monetary policy related topics investigated in these studies is inflation. The authors do not mention central bank actions or communication around central banking within their studies. This is surprising as it is documented that central bank communication impacts significantly non-experts behavior (Ehrmann and Wabitsch, 2022) but also investors behavior (Bennani, 2020), financial market inflation expectations (Picault et al., 2022) and firms' and consumers' expectations (Pinter and Kočenda, 2023). Moreover, despite its mandate, the ECB is considered by elected officials in the EP as accountable for price stability but also unemployment and other economic issues (Ferrara et al., 2021). Then, it is highly probable that media coverage of central banking related topics impact national politics around election periods. This argument is particularly significant in the case of Germany for three reasons. First, the construction process of the ECB is largely inspired by the way *Bundesbank* was operating in Germany (Campanella, 1995; Howart and Loedel, 2005). Thus, German people should be able to understand, even more than other Europeans the way the ECB is behaving. Second, within a monetary union, executive board members are characterized by a regional bias in their decision (Heinemann and Huefner, 2004) but also in their communication (Bennani and Neuenkirch, 2017). Third, Germany can credibly be considered as the "*dominant player*" of the EU (von Hagen and Brückner, 2002; Fabbrini, 2016). In this situation, nothing avoid OPCBCs to be observable even in the highly independent ECB. Then, if the ECB tries to have a political impact in one of the EU country, it has to be Germany.

Then, as expressed above, we try to validate the existence of OPCBC in Germany through the estimation of popularity functions in which we introduce different textometric measures. The estimation of such functions is based on the seminal work of Goodhart and Bhansali (1970) and Mueller (1970) who studied variations in popularity polls in the United Kingdom and the United States. To do so, they regress poll data on economic variables as inflation or unemployment. As described by Lewis-Beck and Steigmaier (2013), the development of the literature leads popularity functions to be composed of two distinct sections, the economic part (e-part) on the one hand and the political part (p-part) on the other hand.[9] There are already several papers that has used popularity function in the context of Germany with macro (Döpke and Pierdzioch, 2006; Kirchgässner, 2009; Williams et al., 2017) and micro-level data (Enkelmann, 2013). We base our estimations on these previous studies and we introduce our textual measures interacted with pre-electoral dummies to investigate on the presence of potential OPCBCs. This methodology is comparable to the one use on the United Kingdom by Menuet et al. (2021) when they are looking for indirect effects of the Bank of England actions on the popularity of the Conservative party and the Labour party.

[9] As expressed in Section 3.2, *p-part* is often neglected by economists (Lewis-Beck and Steigmaier, 2013). That is why a particular attention is given to the selection of political events introduced within our model.

Finally, textual analysis is the study of written document content, from official documents to social medias. This content can provide additional relevant information to explain economic dynamics. Tetlock (2007) shows that information conveyed by the media can forecast stock markets. More precisely, he focuses on the sentiment, or tonality, of the Wall Street Journal articles. To define this sentiment, research focuses on the words used in the documents. Loughran and McDonald (2011) create a lexicon of words associated with a positive, negative and uncertain tonality by manually classifying the words from companies' 10K filling. Baker et al. (2016) successfully relate the used of words suggesting uncertainty in press articles to macroeconomic aggregates. Focusing on the communication of central banks, Conrad and Lamla (2010) highlights the effect of central bank communication on the exchange rate while Picault and Renault (2017) focuses on the relevance of central banks communications to forecast interest rates and the short term stock market dynamics. Mobilizing this methodology allows us to study precisely the composition of press articles and their tones which represents the first step of the investigation on whether OPCBCs exist or not.

3 Data and Summary Statistics

3.1 Politics in Germany

Germany is a federal country characterised by a bicameral parliamentary regime. On the one hand, federal elections are held every 4 years maximum to elect members of the *Bundestag* (federal parliament) in which the chancellor and the government are designated.[10] In addition, the country also participates in elections to the EP. These European elections are of high importance in Germany as it is the most represented country in the EP.

Focusing on the years 2005 to 2021, we study 6 political parties: the alliance between Christian Democratic Union of Germany (*CDU*) and Christian Social Union in Bavaria (*CSU*)[11] referred as *CDU/CSU*; the Social Democratic Party of Germany (*SPD*); the Free Democratic Party (*FDP*); the alliance between *Bündnis* 90 and *Die Grünen* (*Green Party*); *Die Linke*[12] (*Die Linke*) and Alternative for Germany (*AfD*). From a partisan point of view, we follow the classification of German political parties developed by Piketty and Kosse (2020). Specifically, *SPD*, the *Green Party* and *Die Linke* are considered as left-wing parties and *CDU/CSU*, *FDP* and *AfD* as right-wing parties.[13]

Governing coalitions are essential in the German parliamentary system (Schmidt, 2002; Sieberer,

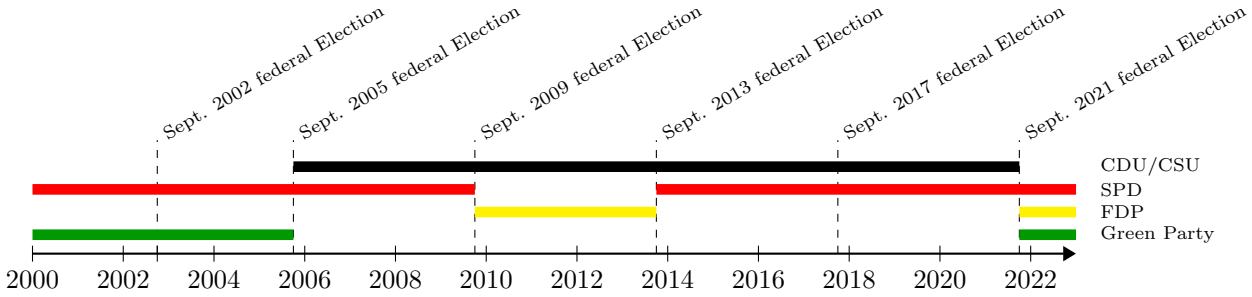
[10] Local elections are organized in each *Länder* to elect members of every *Landtag* (legislative assembly of a federated state). The second chamber (called *Bundesrat*) is composed of several *Landtag* officials elected in every *Länder*.

[11] *CSU* only runs in elections taking place in *Bayern* (Bavaria).

[12] *Die Linke* was found in June 2007 when the Party of Democratic Socialism (*PDS*) from former East Germany merged with the Labour and Social Justice – The Electoral Alternative (*WASG*) party formed in 2004 in West Germany. In the sake of simplicity, electoral results for *Die Linke* are the ones from the *PDS* before 2007. Indeed, the *WASG* has never won a sear in federal, European and local elections before the merger.

[13] For more information on every German political parties' ideological position, see Tanguiane (2022).

Figure 2: Members of the Governing Coalitions



2006). We present in Figure 2 the composition of the different running coalitions from 2000 to 2022.[14] Since 2000, the country has always been governed by a coalition composed of two political parties. The three party coalition inherited from the September 2021 federal election (*SPD*, *FDP* and *Green Party*) is unique in recent German political history.

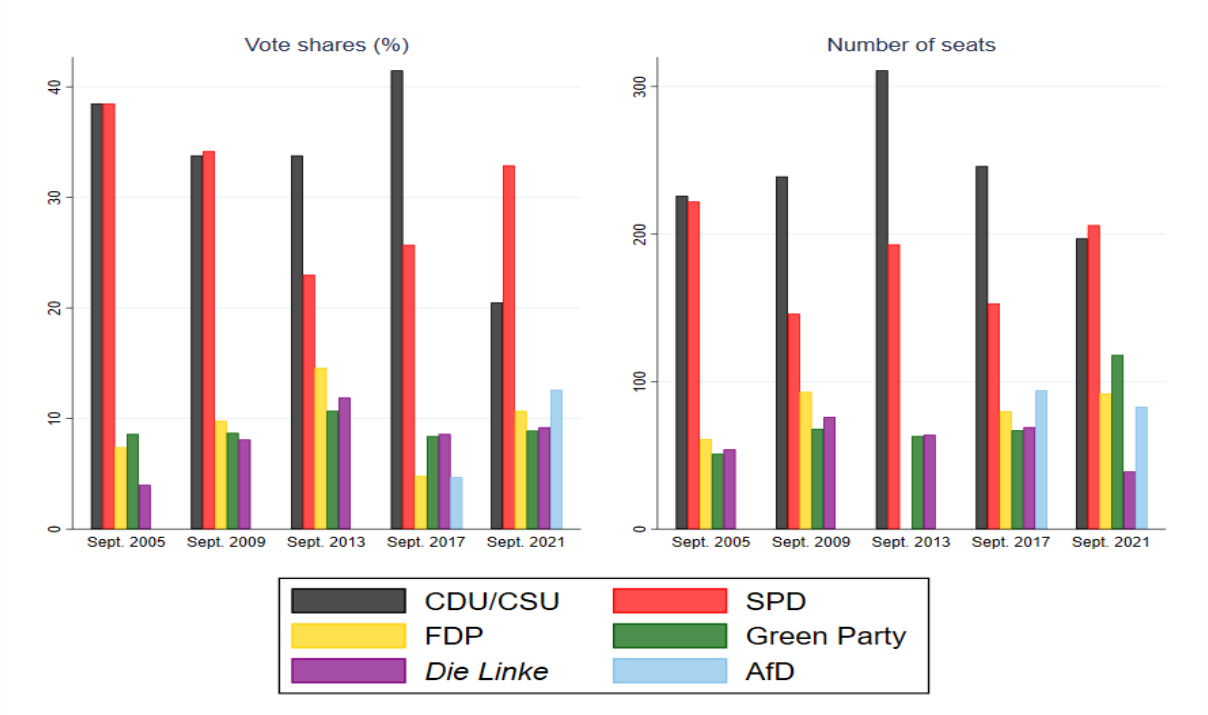
In Figure 3, we present the results in terms of vote percentage and number of seat in the 5 federal elections implemented in our study period. We can observe a relative dominance of both *CDU/CSU* and *SPD* until the September 2017 federal election. Since this scrutiny, political parties are closer to each other in terms of popularity. Indeed, the absolute difference between the most and the least preferred parties (among the 6 studied) is around 35 percentage points in September 2002. In September 2021, this difference is around 20 percentage points. This relative ideological convergence is explained by the fact that voters tend to vote for less mainstream parties, closer to their real real partisan preferences (Spoon and Klüver, 2019). This reasoning can explain, for instance, the important score of *AfD* in the federal election of September 2017 and 2021 despite the youth of this party founded in 2013.

As explained above, we also study potential OPCBC before elections to the EP in this paper. They are implemented every 5 years since 1979 and through the former federal Republic of Germany, Germany has participated to all of them. Due to the apportionment rules within the EP, the importance of these elections is growing in Germany in recent years. Indeed, as mentioned above, Germany is the country with the highest number of members of the EP with 96 members out of the 705 since February 2020. In addition, we can observe that since 2009 EP election, the average turnout in Germany is above the EU average.[15] As developed by Braun and Grande (2021), it seems that elections to the EP are more and more politicized in Germany, slowly passing from second-order to first-order elections. Then, as done in the case of federal elections, we display in Figure 4 the vote shares of each political party in the European elections in both Germany and the EU. As national political parties are part of transnational political groups within the EP, each German party is compared to the mean vote share of its political group in

[14] For more information on how the members of the coalition and their relative importance among the coalition may impact both the *e-part* and the *p-part* of the popularity function, see (Debus et al., 2014). Moreover, for some context on the September 2005 snap election, see Richter (2006).

[15] More precisely, the German turnout is 43.27% (against 42.97% in the Union) in 2009, 48.10% (against 42.61%) in 2014 and 61.38% (against 50.66%) in 2019. These figures are provided by the EP Electoral Commission and are available here: https://www.europarl.europa.eu/election-results-2019/en/turnout/

Figure 3: Vote Shares and Number of Seats in the *Bundestag*



Source: The German federal Returning Officer (*Bundeswahlleiter*), see https://www.bundeswahlleiter.de

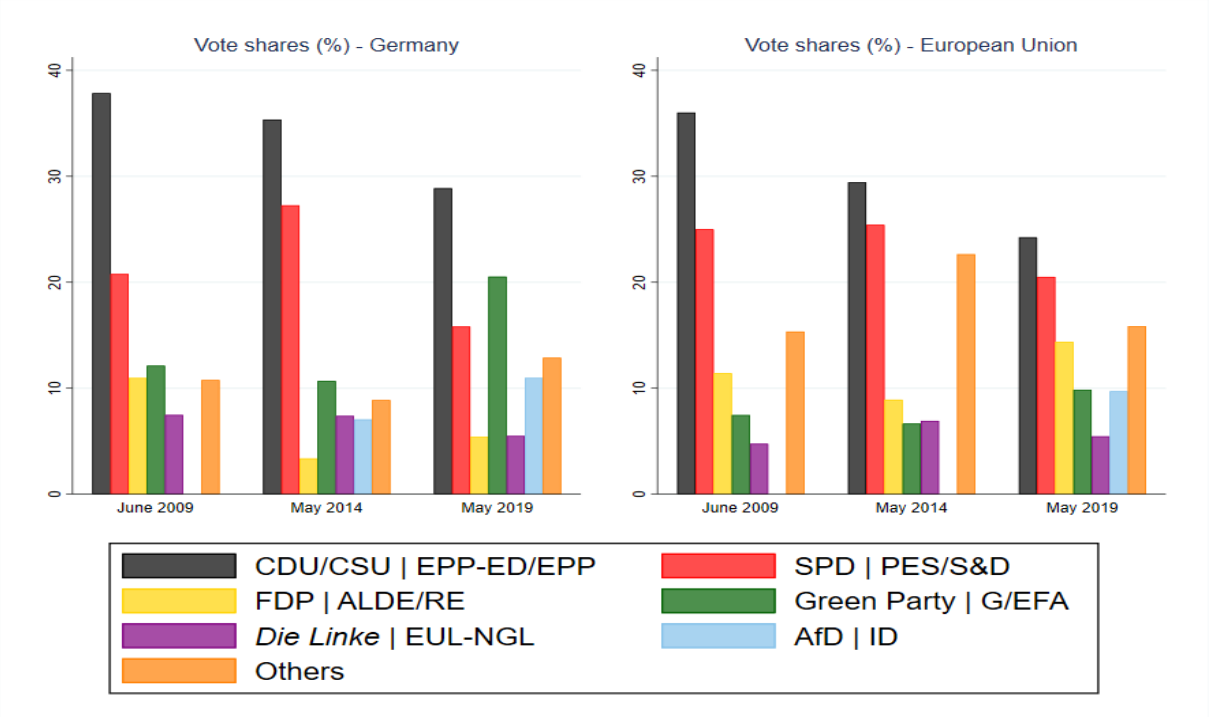
the overall EU. Information on the group within the EP attached to each German party is available in Table A2 in the Appendix. Vote patterns in Germany and in the EU are comparable apart from two slight differences: *CDU/CSU* is more dominant in Germany than the European People's Party in the EP and *Green Party* is more popular in Germany than the Greens/European Free Alliance in the EP.

3.2 Popularity of Political Parties

In Figure 5, we present the evolution of each party's popularity from January 2005 to December 2021. Data on German parties' popularity at the national level comes from the *Politbarometer* (May 2022 version) developed by the Institute for Election Research (*Forschungsgruppe Wahlen e.V.*). More precisely, we use the *Projektion* database that represents aggregation of individual answers to the following questions: "*If there were a federal election next Sunday, would you go to the polls? And which party would you vote for?*"[16] traditionally called the "*Sunday question*". The answers are weighted by sociological characteristics of the respondents like their political beliefs or partisan affiliation. We collect these augmented vote intentions for the 6 main German political forces (*CDU/CSU*, *SPD*, *FDP*, *Green Party*, *Die Linke* and *AfD*) and use them as our main explained variables. To avoid any problem due to potential non-stationarity of our popularity ratings, we introduce them within our model as their first

[16] In German: "*Wenn am nächsten Sonntag Bundestagswahl wäre, würden Sie dann zur Wahl gehen? Und welche Partei würden Sie wählen?*". For more information on the methodology used to compute this database, see: https://www.forschungsgruppe.de/Umfragen/Politbarometer/Methodik/

Figure 4: Vote Shares and Number of Seats in the EP



First names in the legend correspond to German political parties (first sub-figure).
Second names in the legend refers to political groups in the EP (second sub-figure).
Source: EP, see: https://www.europarl.europa.eu/

differences (*dCDU/CSU*, *dSPD*, *dFDP*, *dGreens*, *dLinke* and *dAfD*).

3.3 Textual Analysis

To measure media coverage of monetary policy, we focus our analysis on newspapers articles related to the ECB. We extract, from Europress, Factiva or webscrapping, articles mentioning at least once the ECB in 6 German newspapers with different political orientations: *Bild*, *Die Welt*, *Der Spiegel*, *Frankfurter Rundschau*, *Handelsblatt* and *Suddente Zeitung*. From the period between January 2005 and December 2021, our dataset includes more than 26.000 articles. Characteristics of these 6 newspapers, their orientations, and the number of articles are provided in Table 1.

We first count, as a proxy of the overall importance of monetary policy in public discussions, the number of articles related to the ECB, labeled *Count* and its first-difference *dCount* at a monthly frequency. Therefore $dCount_m$ is the variation of the number of press articles mentioning at least once the ECB between month $m-1$ and month m. Then, we study the content of the articles through words' occurrences. A word or a group of words occurrences for a period t are measured by :

$$Occur\_words_m = \sum_{i=1}^{n} Occurences\_words_m \tag{1}$$

Figure 5: Popularity of Each Party (All Germany)

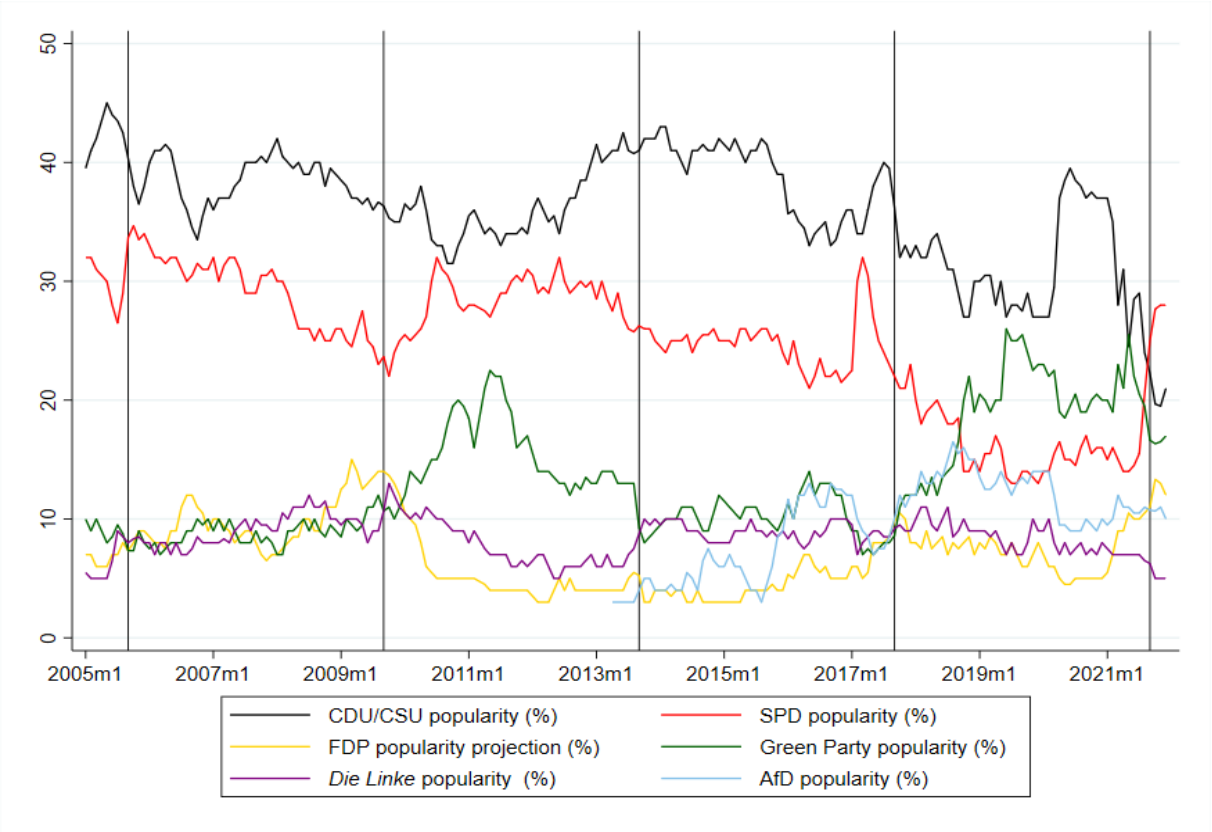
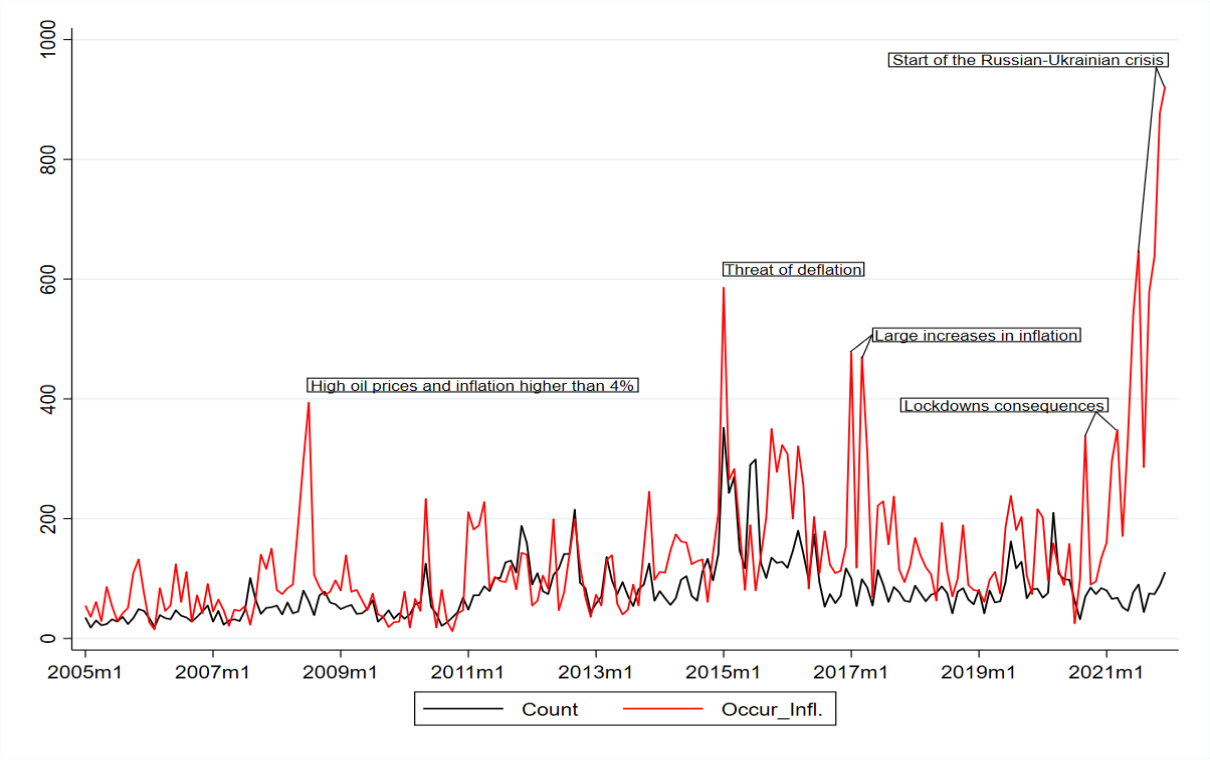


Table 1: Characteristics of German Newspapers in the Textual Analysis

Newspaper	Daily Circulation	Monthly Website Visits	Political Orientation	No. of articles in dataset
Bild	1.516.399 [2022Q1]	> 200.000.000	Center-right/populist	406
Der Spiegel	629.884 [2022Q1]	> 200.000.000	Center-left	8463
Die Welt	99.097 [2022Q1]	[100.000.000; 150.000.000]	Conservative	3864
Frankfurter Rundschau	112.411 [2013Q1]	[10.000.000; 20.000.000]	Left liberal†	1395
Handelsblatt	40.725 [2022Q1]	[20.000.000: 30.000.000]	Economic liberalism	7640
Süddeutsche Zeitung	247.567 [2022Q1]	[50.000.000; 100.000.000]	Left	4241

† The classification of this journal is puzzling. Indeed, according to both the Warwick German Studies Web and Eurotopics, this journal is considered as social democrat. However, according to the work of Falck et al. (2020), the journal is *de facto* a right-wing journal. This point is discussed in detail in Section 7.2. Circulation figures come from the German Audit Bureau of Circulation (*Informationsgemeinschaft zur Feststellung der Verbreitung von Werbeträgern*), see https://www.ivw.de/ . Monthly visits on each newspaper website come from Eurotopics provided by the Federal Agency for Civic Education. (*Bundeszentrale für politische Bildung*) https://www.eurotopics.net/en/. Political orientation come from the Warwick German Studies Web, see https://warwick.ac.uk/fac/arts/modernlanguages/about/german-studies/resources/wgsw/ ; the work of Falck et al. (2020) and Eurotopics.

Figure 6: Number of Articles and Occurrences of Inflation Related Terms

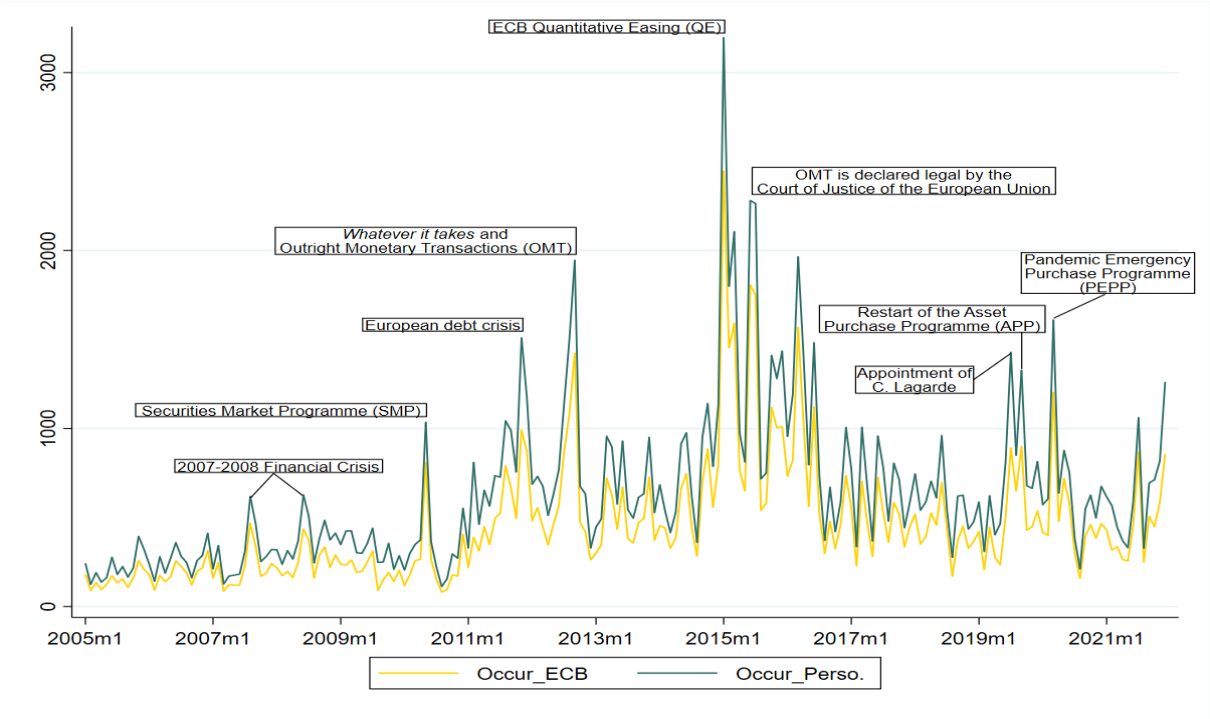


where n represents all articles published during the month m and *words* is either a word or a group of words. We count references to the institution itself in the articles, *Occur_ECB*, through the occurrences of the group of words "European Central Bank" or "ECB"[17]. As communications from different members of the central bank have different effects on market participants (Ehrmann and Fratzscher, 2007), we also consider references to ECB governing council members which include: the President, members of the Executive Board, and heads of the national central banks of the Eurosystem. This measure is labelled *Occur_Perso.* (*dOccur_Perso.* for its first-difference). As a last measure of occurrences, we pay a closer attention to the importance of price levels in the published articles. The variable *Occur_Infl.* measures occurrences of words related to both the prices and inflation[18] (its variation is called *dOccur_Infl.*).

We present in Figure 6 and in Figure 7 the distribution of our four textual variables. First, Figure 6 displays the number of articles (*Count*) and the number of inflation related terms (*Occur_Infl.*). We can observe that the two variables are evolving in comparable proportions with a few exceptions[19] in which the occurrences of inflation related terms are way ahead the number of articles. Second, Figure 7 shows that both *Occur_ECB* and *Occur_Perso.* distributions are comparable and evolving in the same proportions throughout the study period.

[17] We used the terms "*europaische zentralbank*" and all its declensions as well as "*ezb*";
[18] List of words considered: "*inflationsrate*", "*inflation*", "*inflationsprognosen*", "*teuerungsrate*", "*inflationsziel*", "*preisniveau*", "*preisklasse*".
[19] More precisely, these periods in which the difference between *Count* and *Occur_Infl.* is important are: 2008m4 to 2008m8; 2011m1 to 2011m4; 2015m1; 2017m1 to 2017m9 and 2020m12 to 2021m12.

Figure 7: Occurrences of ECB Related Terms



Finally, we present summary statistics on our main variable in Table 2.

3.4 Political and Economic Events

A particular attention is given to the political events introduced within the estimations. Indeed, in the case of Germany, there are ongoing debates on the way to estimate popularity functions. On the one hand, Kirchgässner (2009) insists on the lack of validity of the *e-part* of the popularity function under Schröder chancellorship (1998m10-2005m11) contrary to the common understanding (Lewis-Beck, 1986). On the other hand, Debus et al. (2014) underlines that economic voting is only helping the Chancellor's party. In other words, within the ruling coalition, a favourable economic situation will only benefit the dominant party. Then, it is of high importance to consider political events likely to impact at least one party's popularity. However, as described by Lewis-Beck and Steigmaier (2013), popularity functions are biased because the *p-part* is often underestimated by economists. Consequently, a high number of political events are introduced within the model and we keep the ones that are significant in at least one popularity function as advocated by Sanders (2004). Some of these events have already been introduced in German popularity functions as *Fukushima* or *Stuttgart 21* (Williams et al., 2017). Additional events are introduced in this paper following the classification of political events developed by Bytzek (2011). He considers several types of political shocks classified as follows : (i) political scandals (*e.g. German Visa Affair*) that represents a violation of societal values by politicians leading their popularity to

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
dCDU_CSU	-0.098	1.57	-7	7.5	204
dSPD	-0.01	1.391	-4.5	7.5	204
dFDP	0.025	0.803	-2.25	2.5	204
dGreens	0.034	1.291	-3.75	6	204
dLinke	-0.005	0.773	-2.5	2.5	204
dAfD	0.067	1.041	-2.5	2.667	104
dUnemployment	-0.037	0.079	-0.2	0.3	204
dInflation	0.126	0.372	-1	1	204
dCount	0.328	39.498	-173	211	204
dOccur_ECB	3.216	295.624	-1211	1646	204
dOccur_Perso.	4.77	390.026	-1547	2063	204
dOccur_Infl.	4.24	100.689	-361	377	204
dsent.1	0.037	15.544	-37.413	41.037	204
dsent.2	0.043	15.97	-38.824	47.83	204

decrease ; (ii) political crises (*e.g. Reichstag Storm*) that forces politicians to react which is impacting their popularity and (iii) events creating a "*rally-round the flag*" effect (*e.g. Berlin Truck Attack*) that represents a rise in incumbent's popularity just after events like a declaration of war, a military invasion or a terrorist attack.[20] The events included in our estimations are presented and described in Table A1 available in the Appendix.

As robustness, we introduced within our model dummies taking the value 1 in months when the ECB announced the implementation of important unconventional monetary policies. These events are detailed in Table A3 available in the Appendix. As their introduction is not significantly modifying our results, we will not present them within the paper. However, these additional estimations are available upon request.

4 Econometric Specification

To investigate the impact of monetary policy coverage on party popularity, we implement two distinct estimation techniques. As a reminder, our dataset represent national popularity ratings for the 6 main German political parties on the period between January 2005 and December 2021. We first estimate an independent popularity function for each party with an Ordinary Least Square (OLS) estimator as follows:

$$\begin{aligned} dPop._m^P &= \beta_0 + \beta_1 dPop._{m-1}^P + \beta_2 Elec._m + \beta_3 Texto._m \\ &\quad + \beta_4 (Elec._m) * (Texto._m) + \beta_5 X_m^{POL} \\ &\quad + \beta_6 X_m^{ECO} + \varepsilon_m \end{aligned} \tag{2}$$

[20] For more information on the "*rally-round the flag*", see Mueller (1970).

where $dPop._m^P$ represents the first-difference of party P's popularity with $P = (CDU, SPD, FDP, Gre., Lin., AfD)$ which correspond respectively to the CDU/CSU, SPD, FDP, Green Party, Die Linke and AfD in month m measured as through the answers to the "*Sunday question*"; $Elec._m$ denotes a dummy variable taking the value 1 in the month preceding an election (federal or European); $Texto._t$ stands for one of our textual measure ($dCount$, $dOccur\_ECB$, $dOccur\_Perso.$, $dOccur\_Infl.$); $(Elec._m) * (Texto._m)$ is the interaction term between $Elec._m$ and $(Texto._m)$; X_m^{POL} a matrix of dummies representing several national political events (see Table A1 in Appendix) considered as the political part (*p-part*) of our popularity functions; X_m^{ECO} is a matrix of macroeconomic controls with the first difference of the inflation rate in month m and $m-1$ and the first difference of the unemployment rate in month m and $m-1$ considered as the economic part (*e-part*),[21] and ε_t an error term.

As developed by Lewis-Beck and Steigmaier (2013), estimation of a popularity function is biased due to heteroscedasticity and autocorrelation. To control for these potential biases, our six popularity functions are estimated with Newey and West (1987) standard errors (in line with, among others, Döpke and Pierdzioch, 2006 and Kirchgässner, 2009).[22] Moreover, as developed in Section 3.1, popularity ratings and textual measures are introduced in the model as their first-differences to avoid non-stationarity issues.

Second, each party's popularity is statistically linked to the others as popularity ratings are restricted to values between 0% and 100%. In other words, an increase in party P's popularity induces a decrease in other parties' popularity. To control for these interdependencies, we estimate our popularity functions simultaneously using a Seemingly Unrelated Regressions (SUR) model (Zellner, 1962) as performed by Williams et al. (2017). We model parties' popularity as the following system of equation:

$$\begin{cases} dPop._m^{CDU} = \beta_1 dPop._{m-1}^{CDU} + [...] + \beta_6 X_m^{ECO} + \varepsilon_{CDU,m} \\ dPop._m^{SPD} = \beta_1 dPop._{m-1}^{SPD} + [...] + \beta_6 X_m^{ECO} + \varepsilon_{SPD,m} \\ dPop._m^{FDP} = \beta_1 dPop._{m-1}^{FDP} + [...] + \beta_6 X_m^{ECO} + \varepsilon_{FDP,m} \\ dPop._m^{Gre.} = \beta_1 dPop._{m-1}^{Gre.} + [...] + \beta_6 X_m^{ECO} + \varepsilon_{Gre.,m} \\ dPop._m^{Lin.} = \beta_1 dPop._{m-1}^{Lin.} + [...] + \beta_6 X_m^{ECO} + \varepsilon_{Lin.,m} \end{cases} \tag{3}$$

where $dPop_m^P$ represents the first-difference of party P popularity excluding the *AfD* in month m measured in percentage of positive answer to the "*Sunday question*"; X_m^{POL} the *p-part* of the popularity function; X_m^{ECO} the *e-part* of the popularity function and $\varepsilon_{P,m}$ denote error terms correlated among equations of the system. As the *AfD* has been founded in February 2013, we only have observations for this party's popularity from April 2013. Then, introducing *AfD* within our SUR estimations would

[21] Inflation and unemployment rates come from the German federal Statistical Office (*Destatis*). We guarantee stationarity of the inflation and unemployment series by using their first difference (*dInflation* and *dUnemployment*) in our estimations.

[22] We will follow Greene (2012) and implement this procedure with $T^{1/4}$ maximum lags in the autocorrelation structure (p. 920), leading our specifications to be performed with 3 lags.

lead to perform our estimations on 103 observations (against 204) reducing the validity of our results. However, the introduction of *AfD* within our estimates does not modify our results.

This system of equation is estimated using Generalized Least Squares (GLS) with robust standard errors. As our database if composed of a low number of observations (204 observations for each party and 103 for the *AfD*), the small-sample adjustment is used.[23] Moreover, to guarantee the validity of our results, we perform our estimates until coefficients converge to their maximum likelihood values.

5 Main Results

Table A4 and Table A5 display our main model without any textual variables. More precisely, Table A4 represents OLS estimates with Newey and West (1987) standard errors and Table A5 represents simultaneous estimations with a SUR model (Zellner, 1962). First, there are no inconsistencies between the two estimators as every coefficient is characterized by comparable sign, magnitude and significance. In the case of the *e-part* of the popularity functions, our results are in line with Kirchgässner's (2009) findings that the negative relationship between unemployment, inflation and government approval is debatable in Germany in the recent period. If we consider political parties within ruling coalitions,[24] only *SPD* and *FDP* experience a significant effect from economic parameters (*i.e.* inflation or unemployment) on their popularity ratings. Table A5 shows that *SPD*'s popularity in month m is negatively impacted by an increase of the inflation rate in month $m-1$, *dInflation(m-1)*, as expected. However, this effect is positive in the case of *FDP* for both the inflation rate and the unemployment rate, *dUnemployment(m-1)*. A simple explanation of this phenomenon can be found using the comparative advantage argument. As developed by Debus et al. (2014): "*The FDP [...] does not benefit from a positive view of the economy: the chances that voters choose the Liberals significantly decrease if they have a positive evaluation of the German economic situation.*" (p. 58). In other words, an increase in unemployment or inflation will increase *FDP*'s popularity as the party is considered as competent in fighting unemployment and inflation. On the contrary, *FDP* experiences a lower popularity when the country is experiencing a favourable economic situation as it destroys its comparative advantage.[25] Moreover, we can observe in Table A4 that an increase of the unemployment rate induces a decrease in *AfD*'s popularity rating. On this point, Weisskircher (2020) underlines that there is no statistical link between the current level of unemployment and the popularity of the far-right populist party. Nevertheless, he develops that past experiences of the voters with unemployment significantly increases *AfD*'s popularity contrary to our findings. Weisskircher (2020) explains this surprising result by the high differences in terms of politico-economic situation between East and West Germany that puzzles the estimates.

[23] More precisely, this adjustment consists in computing the covariance matrix replacing the standard divisor (the number of observation n) by the following one: $\sqrt{(n-k_i)(n-k_j)}$, where k_i and k_j represent the number of parameters in equations i and j. For more information on this point, see Greene (2012) (p. 296).

[24] For more information, see Figure 2 (page 8).

[25] On the comparative advantage argument, see Clark and Arel-Bundock (2013) and Menuet et al. (2021).

On the *p-part* of the popularity functions, political events introduced in the model are impacting parties' popularity in the right direction when significant. More precisely, political scandals impacting incumbent parties (*e.g. German Visa Affair* or *Erdogate*) have a negative effect on all the members of the running coalition. On the contrary, political scandals affecting members of the opposition (*e.g. AfD Donation Scandal*) increase incumbents' popularity. Moreover, terrorist attacks (*e.g. Berlin Truck Attack*) increase the popularity of the leader of the incumbent coalition in the line with the "*rally-round the flag*" effect (Mueller, 1970). Finally, environmental scandals (*e.g. Fukushima*) increase *Green Party* approval rate while environmental protests (*e.g. Stuttgart 21*) decrease it.

However, two issues have to be addressed while presenting these estimations. First, contrary to the standard characteristics of popularity functions presented by Lewis-Beck and Steigmaier (2013), our estimates denote low R-squared (between 0.231 and 0.112 in Table A4 for instance). This result is surprising but has already been observed before (Veiga, 1998; Asteriou and Price, 2001). Veiga (1998) explains this result by the fact that popularity also depends on unmeasured "*personality factors*" (p. 356) particularly important in Germany.[26] Second, contrary to the common sense, the lagged popularity variable (*Pop.(t-1)*) appears significant and negative in some cases. This negative effect is observable for *Green Party* and *Die Linke* in Table A4 and only for *Die Linke* in Table A5. It means that an increase in popularity in month $m-1$ has a negative impact on popularity in month m. This can be explained by the relative absence of trend in our popularity series for these two political parties (see Figure 5).

5.1 Federal *Bundestag* Elections

In Table 3, we present estimated coefficients of *Pre federal Election 1 month*, our four textometric variables (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms estimated with Newey and West (1987) standard errors. *Pre federal Election 1 month* represents a dummy that takes the value 1 on the month prior to a federal election. We interpret the significance of the interaction term between the pre-electoral dummy and one of our textual measures as a evidence of the existence of an OPCBC.

First, in the case of *CDU/CSU*, an increase in *dCount* and *dOccur_ECB* in the month preceding a federal election have a negative impact on the party's popularity. More precisely, if the number of press articles related to the ECB increases by 10 in the month before a federal election, the popularity of *CDU/CSU* decreases by 0.243 percentage point. Moreover, 10 more occurrences of ECB related terms[27] within our corpus of press articles in the month before a federal election, decreases *CDU/CSU*'s popularity by 0.04 percentage point. Such an effect can be explained through the comparative advantage argument (Clark and Arel-Bundock, 2013; Menuet et al., 2021). Indeed, as the ECB is designed to

[26] On political personalization, see van Aelst et al. (2012).

[27] As mentioned in Section 3.4, an increase of *dOccur_ECB* indicates that at least one of the press articles mention the term "*europaische zentralbank*" "*ezb*" or one of their declensions.

promote low inflation and macroeconomic stability, the conservative party (*CDU/CSU*) cannot use its ability to fight inflation as an electoral argument anymore. Then, mentioning the ECB prior to an election would decrease *CDU/CSU*'s popularity as it reminds voters that the ECB is already fighting inflation (*i.e.* the comparative advantage of the party). Moreover, as stated by this comparative advantage argument, the opposite negative and significant effect can be observed in *SPD*'s popularity function. When the ECB is mentioned in the month prior to a federal election, the more liberal opponent (*SPD*) appears as a more pertinent option. More precisely, 10 additional occurrences of ECB related terms in the month before a federal election increases the *SPD* popularity by 0.156 percentage point.

Second, *FDP* faces a significant and positive OPCBC related to *dOccur_Perso*. This is an expected result as economic parameters are fundamental within the party's identity. For instance, as expressed by Bucher-Koenen and Lusardi (2011), there is a positive relationship between financial literacy and vote for the *FDP*. In this situation, it seems obvious that press articles mentioning ECB related topics are of interest for this electorate.

Third, the situation faced by the *Green Party* is exactly the same than the one experienced by *CDU/CSU*, respectively with a magnitude of -0.0338 (*dCount X Pre federal Election 1 month*) and -0.0054 (*dOccur_ECB X Pre federal Election 1 month*). Moreover, *Die Linke*'s ratings are not impacted by the studied press articles.

Then, the far-right populist party popularity (*AfD*) is highly impacted by every interaction terms as they all appear significant and negative. Two arguments can be emphasized to explain this situation. First, *AfD* is marked by strong euroscepticism (Grimm, 2015). Then, the mention of EU related institutions like the ECB is undeniably impacting party's popularity. The more frequently ECB (*dOccur_ECB*) or Executive Board members (*dOccur_Perso.*) are mentioned in press articles, the less popular *AfD* becomes. This argument is reinforced by our sentiment analysis provided in Table 7, Table 10, Table 11 and Table 12 in which a more positive mention of the ECB decreases *AfD*'s popularity. Second, as expressed by Jankowski et al. (2017), the ordoliberal identity of the party[28] induces that the party is positioned near *FDP* in terms of economic preferences. Thus, global macroeconomic situation appears as an important determinant of *AfD*'s popularity.

Finally, when estimating Equation 3 using GLS within an SUR model, the results remain largely consistent, even in the absence of *AfD* (Table 4).

5.2 EP Elections

Euroscepticism represents a major issue while studying elections to the EP. Development of eurosceptic ideas has accelerated after the 2007-2008 financial crisis (Treib, 2014; Hobolt and de Vries, 2016) and still represent a key issue within the current EP (Treib, 2021). Then, it seems obvious that increasing

[28] At least until mid-2015 and the foundation of the *Allianz für Fortschritt und Aufbruch* by some members of *AfD*. For more information on the July 2015 political split among *AfD* members, see Jäger (2021).

Table 3: Main Model Estimated with Newey and West's (1987) Standard Errors - Federal Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Pre federal Election	-0.6145***	1.9922***	0.6911***	-0.5359***	0.0207	-1.1483***
1 month	(0.1913)	(0.2027)	(0.1554)	(0.1633)	(0.2946)	(0.2766)
dCount	-0.0030	-0.0040*	-0.0002	0.0030	0.0021*	-0.0001
	(0.0028)	(0.0021)	(0.0012)	(0.0023)	(0.0013)	(0.0020)
dCount X Pre federal	-0.0243***	0.1035***	0.0079	-0.0338***	-0.0080	-0.0607***
Election 1 month	(0.0056)	(0.0062)	(0.0060)	(0.0094)	(0.0082)	(0.0158)
Pre federal Election	-0.5309**	1.6174**	0.6078***	-0.4666**	0.1435	-0.2361
1 month	(0.2404)	(0.7942)	(0.2253)	(0.2031)	(0.3673)	(0.1642)
dOccur_ECB	-0.0004	-0.0005*	-0.0001	0.0002	0.0003**	0.0001
	(0.0004)	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0003)
dOccur_ECB X Pre federal	-0.0040***	0.0156***	0.0007	-0.0054***	-0.0002	-0.0052***
Election 1 month	(0.0013)	(0.0040)	(0.0013)	(0.0017)	(0.0019)	(0.0014)
Pre federal Election	-0.4364*	1.4060*	0.6768***	-0.2756	0.1841	-0.2518
	(0.2368)	(0.7366)	(0.1808)	(0.2344)	(0.3920)	(0.1634)
dOccur_Perso.	-0.0002	-0.0004**	-0.0000	0.0002	0.0002**	0.0000
	(0.0003)	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0002)
dOccur_Perso. X Pre federal	-0.0024	0.0104**	0.0011*	-0.0027	0.0002	-0.0029***
Election 1 month	(0.0015)	(0.0041)	(0.0006)	(0.0019)	(0.0016)	(0.0008)
Pre federal Election	-0.1951	0.4003	0.5561***	-0.0399	0.1964	0.1582
1 month	(0.2609)	(0.8922)	(0.1761)	(0.2997)	(0.2353)	(0.2038)
dOccur_Infl.	-0.0013	0.0000	-0.0005	-0.0004	0.0006	0.0001
	(0.0012)	(0.0017)	(0.0007)	(0.0011)	(0.0007)	(0.0010)
dOccur_Infl. X Pre federal	-0.0042	0.0195	0.0015	-0.0048	0.0039	-0.0065***
Election 1 month	(0.0045)	(0.0133)	(0.0030)	(0.0050)	(0.0033)	(0.0021)
Nbr. observations	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with our four textual measures. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

Table 4: Main Model Estimated with SUR Model (Zellner, 1962) - Federal Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Pre federal Election	-0.6167***	1.8141***	0.6865***	-0.6136***	0.0957
1 month	(0.1823)	(0.1473)	(0.1427)	(0.1544)	(0.2452)
dCount	-0.0029	-0.0037*	-0.0002	0.0029	0.0021*
	(0.0025)	(0.0021)	(0.0010)	(0.0021)	(0.0012)
dCount X Pre federal	-0.0239***	0.1007***	0.0079	-0.0359***	-0.0059
Election 1 month	(0.0056)	(0.0054)	(0.0055)	(0.0090)	(0.0064)
Pre federal Election	-0.5237**	1.4522**	0.6043***	-0.5256**	0.2019
1 month	(0.2510)	(0.6839)	(0.2035)	(0.2106)	(0.3041)
dOccur_ECB	-0.0004	-0.0004	-0.0001	0.0003	0.0003**
	(0.0003)	(0.0003)	(0.0001)	(0.0003)	(0.0001)
dOccur_ECB X Pre federal	-0.0038***	0.0152***	0.0007	-0.0056***	0.0001
Election 1 month	(0.0013)	(0.0034)	(0.0012)	(0.0017)	(0.0016)
Pre federal Election	-0.4151*	1.2456*	0.6738***	-0.3307	0.2682
1 month	(0.2507)	(0.6446)	(0.1711)	(0.2517)	(0.3187)
dOccur_Perso.	-0.0002	-0.0003	-0.0000	0.0002	0.0002**
	(0.0002)	(0.0002)	(0.0001)	(0.0002)	(0.0001)
dOccur_Perso.X Pre federal	-0.0021	0.0101***	0.0011*	-0.0028	0.0006
Election 1 month	(0.0013)	(0.0036)	(0.0006)	(0.0018)	(0.0013)
Pre federal Election	-0.1927	0.2762	0.5552***	-0.0759	0.2413
1 month	(0.2730)	(0.7924)	(0.1617)	(0.2980)	(0.1917)
dOccur_Infl.	-0.0012	0.0005	-0.0005	-0.0003	0.0006
	(0.0012)	(0.0018)	(0.0006)	(0.0011)	(0.0006)
dOccur_Infl. X Pre federal	-0.0033	0.0189	0.0015	-0.0049	0.0046*
Election 1 month	(0.0039)	(0.0120)	(0.0028)	(0.0049)	(0.0025)
Nbr. observations	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our four textual measures. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

euroscepticism would increase votes for eurosceptic parties like *AfD* in the European elections. More precisely, the development of "soft euroscepticism" as defined by Taggart and Szczerbiak (2004) among German people and German parties (Baluch, 2017) may influences results to the EP elections. First, we present in Figure A1 available in the Appendix, an approximation of the average level of trust on the EU among German people. Using the Eurobarometer, we compute the average percentage of "*tend not to trust*" answers to the following questions: "*How much trust do you have in the EU? Do you tend to trust it or tend not to trust it?*" for the average EU and Germany.[29] Figure A1 underlines that euroscepticism among German people is not far off the EU average, reflecting that German euroscepticism tends to be "soft" (Taggart and Szczerbiak, 2004). However, Germany presents an euroscepticism proxy higher than the EU average before 2016 and lower than this same average around the EP election held in May 2019. Second, we present a classification of German parties' level of euroscepticism based on Taggart and Szczerbiak's (2004)[30] in Table A6. In line with the findings of Paterson (2010), *CDU/CSU* is characterized by strong euroenthusiasm despite recent internal party debates.[31] We can also consider *FDP* close to *CDU/CSU* in terms of euroentusiasm. Then, we consider throughout the paper that *CDU/CSU* and *FDP* as the least critical of the EU. Other parties classified as europragmatic or eurosceptic are considered as doubtful (at least) regarding European institutions.

In Table 5, we present estimations of Equation 2 with *Pre European Election 1 month* estimated with Newey and West (1987) standard errors. *Pre European Election 1 month* represents a dummy that takes the value 1 on the month prior to an EP election. After studying German federal elections, we study in Table 5 and Table 6 the potential existence of OPCBCs prior to EP elections. As developed in Section 5.1, the occurrence of ECB-related terms in press articles (*dOccur_ECB*) cause an OPCBC for 4 out of the 6 parties studied (see Table 3 and Table 4). However, elections to the EP should be characterized by broader OPCBCs as European institutions (*e.g.* the ECB) represent a more important issue in these elections. As underlined by Braun et al. (2016), European institutions and integration are salient topics in EP elections. Our results are in line with this reasoning as we find significant and broader OPCBCs prior to EP elections in Table 5 and Table 6 for every party considered.

In the case of *CDU/CSU*, an increase in one of our textual measure (except *dOccur_Infl.*) increases its popularity. This result is due to the euroenthusiasm of the party (see Table A6 in Appendix for more information). Indeed, occurrences of EU related institutions has a positive impact on the popularity of *CDU/CSU* as the party strongly values European integration (Rohrschneider and Whitefield, 2017).

[29] The phrasing of the question has been slightly modified throughout the years. Moreover, for the EU, value presented are means of the total number of EU members at the time the survey is conducted.

[30] The authors developed a benchmark composed of 4 potential positions towards the European institutions. More precisely, through its degree of support for EU and European integration, each party can be classified as : (i) euroenthusiast if it supports both EU and European integration; (ii) europragmatic if it only supports EU; (iii) eurosceptic if it only supports European integration and (iv) eurorejecter if it supports none of EU and European integration. For more information, please refer to Szczerbiak and Taggart (2008).

[31] These debates between Angela Merkel on the one hand and the *CSU* accompanied by a part of *CDU* focus on immigration Hertner (2022), a topic related directly to European integration and the EU.

This point is reinforced by the sentiment analysis (see Table 7, Table 10, Table 11 and Table 12) in which *SPD*, *Green Party* and *AfD* face similar negative OPCBCs.[32]

On the contrary, more europragmatic or eurosceptic parties are impacted by negative OPCBCs. *SPD*, *Green Party*, *Die Linke* and *AfD* are negatively impacted by every textual variable in the month prior to an EP election.[33] As these parties are characterized by critical visions of the EU, if EU represents a salient aspects of the campaign, it will negatively impact their overall popularity. Indeed, as EP elections aim at appointing Members of the EP (MEPs), criticism of EU institutions can deter the legitimacy of these parties in this scrutiny.

Then, the impact of *dOccur_Infl.* can be surprising in the case of *Die Linke*. Indeed, we develop the argument that our textual variables have a negative impact on europragmatic and eurosceptic parties in the month prior to an EP election. However, *dOccur_Infl.* impacts positively and significantly *Die Linke*'s popularity. This puzzling result can be explained by Hartmann et al. (2022) work. The authors underline that the majority of *Die Linke*'s proponents are among the poorest part of German population that has perceived a modification in their income (positively or negatively) in recent times. Consequently, an increase in the occurrence of inflation related terms in the media may increase inflation expectations. This leads poor populations to anticipate future income loss increasing *Die Linke*'s popularity. Moreover, a fear of future income losses would also increase the popularity of *Die Linke* as the party strongly opposed to Hartz reforms[34] in the 2000's (Weisskircher et al., 2022) and support the implementation of a minimum wage instead. We argue that the inflation dynamics, affecting directly households purchasing power, has a similar effect on *Die Linke*'s popularity.

In conclusion, the analysis of EP elections using an SUR model (Zellner, 1962) is displayed in Table 6. These findings align with those showcased in Table 5, affirming that our results are not influenced by any unobserved correlations within each party's popularity function.

6 Sentiment Analysis

In Section 5, we elaborate on how an uptick in media coverage of ECB-related terms in the German press before federal or EP elections significantly influences the popularity of German political parties. Furthermore, the tone of the analyzed press articles also plays a role in shaping the parties' popularity. Following (Tetlock, 2007), the tone, also referred as sentiment, is the degree of positivity or negativity in a media article. To study this question, we compute two measures of the tone of our press articles. We estimate the overall sentiment of the articles through journalists' choice of words in the German dictionary. To obtain a classified dictionary that differentiate positive and negative words, we use the

[32] With the exception of *AfD* when studying *sent.1*.
[33] With the exception of *dOccur_Infl.* for *Die Linke*.
[34] For more information on these reforms and their effects, see Engbom et al. (2015).

Table 5: Main Model Estimated with Newey and West's (1987) Standard Errors - European Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Pre European Election	-0.7065**	0.7352**	-0.5763	0.2452	-0.0484	0.0775
1 month	(0.2756)	(0.3568)	(0.6108)	(0.1593)	(0.2075)	(0.1427)
dCount	-0.0030	-0.0036*	-0.0003	0.0029	0.0021	-0.0002
	(0.0028)	(0.0020)	(0.0012)	(0.0023)	(0.0013)	(0.0020)
dCount X Pre European	0.0799***	-0.0440***	0.0314	-0.0219*	-0.0207	-0.0468***
Election 1 month	(0.0220)	(0.0163)	(0.0306)	(0.0111)	(0.0127)	(0.0143)
Pre European Election	-0.5459**	0.6495	-0.5436	0.2138	-0.0936	-0.0575
1 month	(0.2370)	(0.4128)	(0.6967)	(0.1594)	(0.2121)	(0.1363)
dOccur_ECB	-0.0004	-0.0005*	-0.0001	0.0002	0.0003**	0.0001
	(0.0004)	(0.0003)	(0.0001)	(0.0003)	(0.0002)	(0.0003)
dOccur_ECB X Pre European	0.0111***	-0.0055**	0.0034	-0.0029*	-0.0031*	-0.0064***
Election 1 month	(0.0028)	(0.0024)	(0.0043)	(0.0015)	(0.0016)	(0.0020)
Pre European Election	-0.6624**	0.6942**	-0.5494	0.2375	-0.0555	0.0648
1 month	(0.2944)	(0.3459)	(0.6041)	(0.1538)	(0.2156)	(0.1410)
dOccur_Perso.	-0.0002	-0.0004*	-0.0000	0.0002	0.0002**	-0.0000
	(0.0003)	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0002)
dOccur_Perso.X Pre European	0.0074***	-0.0041***	0.0032	-0.0021**	-0.0019	-0.0043***
Election 1 month	(0.0021)	(0.0015)	(0.0028)	(0.0010)	(0.0012)	(0.0013)
Pre European Election	-0.8316	1.0394***	-1.0551***	0.3460	-0.1028	2.3554***
1 month	(0.5950)	(0.3602)	(0.1769)	(0.2182)	(0.1786)	(0.7531)
dOccur_Infl.	-0.0013	0.0002	-0.0005	-0.0005	0.0006	0.0000
	(0.0012)	(0.0017)	(0.0007)	(0.0011)	(0.0007)	(0.0010)
dOccur_Infl. X Pre European	-0.0095	-0.0246*	0.0505***	-0.0056	0.0138*	-0.1034***
Election 1 month	(0.0257)	(0.0134)	(0.0073)	(0.0076)	(0.0077)	(0.0317)
Nbr. observations	204	204	204	204	204	103

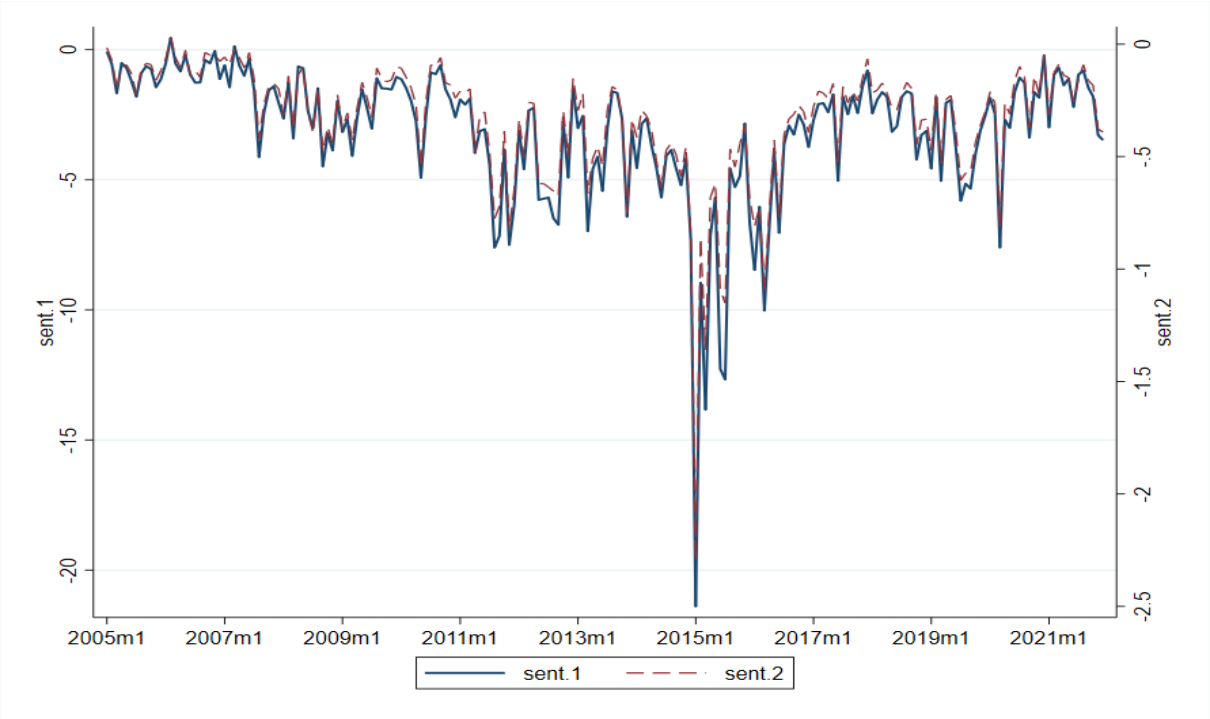
Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with our four textual measures. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

Table 6: Main Model Estimated with SUR Model (Zellner, 1962) - European Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Pre European Election	-0.7043***	0.9413***	-0.5893	0.3203**	-0.0601
1 month	(0.2354)	(0.3401)	(0.5454)	(0.1496)	(0.2009)
dCount	-0.0030	-0.0032	-0.0003	0.0028	0.0020*
	(0.0025)	(0.0021)	(0.0010)	(0.0021)	(0.0012)
dCount X Pre European	0.0824***	-0.0368**	0.0305	-0.0263**	-0.0206*
Election 1 month	(0.0165)	(0.0180)	(0.0281)	(0.0112)	(0.0113)
Pre European Election	-0.5402***	0.8750**	-0.5579	0.2789*	-0.1056
1 month	(0.1979)	(0.3953)	(0.6230)	(0.1545)	(0.2057)
dOccur_ECB	-0.0004	-0.0004	-0.0001	0.0003	0.0003**
	(0.0003)	(0.0003)	(0.0001)	(0.0003)	(0.0001)
dOccur_ECB X Pre European	0.0113***	-0.0044*	0.0033	-0.0034**	-0.0031**
Election 1 month	(0.0021)	(0.0026)	(0.0039)	(0.0015)	(0.0015)
Pre European Election	-0.6576***	0.9067***	-0.5628	0.3083**	-0.0676
1 month	(0.2506)	(0.3321)	(0.5392)	(0.1434)	(0.2081)
dOccur_Perso.	-0.0002	-0.0003	-0.0000	0.0002	0.0002**
	(0.0002)	(0.0002)	(0.0001)	(0.0002)	(0.0001)
dOccur_Perso.X Pre European	0.0077***	-0.0035**	0.0031	-0.0025**	-0.0019*
Election 1 month	(0.0016)	(0.0016)	(0.0026)	(0.0010)	(0.0011)
Pre European Election	-0.8577	1.2655***	-1.0707***	0.4404**	-0.1165
1 month	(0.5427)	(0.2845)	(0.1731)	(0.2135)	(0.1740)
dOccur_Infl.	-0.0012	0.0006	-0.0005	-0.0003	0.0006
	(0.0012)	(0.0018)	(0.0006)	(0.0011)	(0.0006)
dOccur_Infl. X Pre European	-0.0067	-0.0299***	0.0509***	-0.0071	0.0138*
Election 1 month	(0.0240)	(0.0108)	(0.0070)	(0.0086)	(0.0071)
Nbr. observations	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our four textual measures. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Figure 8: Evolution of our Sentiment Measures



For more information on the computation of *sent.1* and *sent.2*, see Equation 4 and Equation 5.

SentimentWortschatz (*SentiWS*) dictionary developed by Remus et al. (2010).[35] It includes all possible words conjugations and declinations and provides, for each word, the probability of being used in a positive or a negative context. Using this lexicon, we construct two sentiment measures :

$$sent.1_j = \frac{\Sigma(Positive\_Words_j - \Sigma(Negative\_Words_j)}{\Sigma(Positive\_Words_j + Negative\_Words_j)} \tag{4}$$

$$sent.2_j = \frac{\Sigma(Positive\_Words_j - \Sigma(Negative\_Words_j)}{\Sigma(Words_j)} \tag{5}$$

where j denotes the article studied; $Positive\_Words_j$ and $Negative\_Words_j$ represent respectively the number of word classified as "*positive*" and "*negative*" by the *SentiWS* dictionary in article j and $Words_j$ is to the total number of words within article j. Variables *sent.1* and *sent.2* are normalized and introduced within the model as their first differences (*dsent.1* and *dsent.2*).

We present the evolution of *sent.1* and *sent.2* in Figure 8. Throughout the entire period, these two measures evolve in comparable proportions. However, the slight discrepancies between these two variables offer strong rationale for their use.

We interact these two sentiment measures with our pre-electoral dummies (*Pre federal Election 1*

[35] See Haselmayer and Jenny (2017) and Rauh (2018) for discussions on German dictionaries.

month and *Pre European Election 1 month*) and estimate our model with these new interaction terms. Results of the estimation of Equation 2 with Newey and West (1987) procedure are presented in Table Table 7. Again, estimations of Equation 3 with a SUR model (Zellner, 1962) are available in the Table A9. Then, to study the potential partisan OPCBCs discussed in Section 7.2, we will estimate our sentiment measures split between right-wing and left-wing newspapers.

Moreover, we compute an alternative sentiment measure using a Bidirectional Encoder Representations from Transformers (BERT, Devlin et al., 2018) method adapted to German language and trained for sentiment classification by Guhr et al. (2020). The computed variable is labeled *sentiment_BERT* and is normalized and introduced in our estimates as its first-difference (*dsentiment_BERT*). These estimations are presented in Section 7.3.

Comparing the first part of Table 7 and Table 3 underline the coherence of our sentiment analysis for the 6 political parties studied in the context of federal elections. First, despite the significance and the negative coefficients of some textual measures, *CDU/CSU* and *Green Party* are experiencing a negative OPCBC that does not depend on the tone of press articles. Second, *Die Linke* is not experiencing an OPCBC prior to federal elections in occurrences nor in sentiment. Third, OPCBCs faced by *SPD*, *FDP* and *AfD* prior to federal elections are coherent in terms of occurrences and sentiment. In the case of *SPD*, Table 5 shows that the more monetary policy related terms are mentioned in the press in the month before a federal election, the more popular is the party. In addition, Table 7 presents that this OPCBC is greater when the press mention the ECB in a positive way. Looking at *dOccur_Perso.* for *FDP* in Table 5, we can have the same conclusion in terms of OPCBC in Table 7. Finally, the opposite pattern can be observed in *AfD*'s popularity. More precisely, the more ECB related terms are mentioned in the press in the month before a federal election, the less popular is *AfD*. This effect is reinforced by the results presented in Table 7 where we can observe that a positive tone used by the media to talk about monetary policy will have a negative impact on *AfD*'s popularity. This result is consistent with the claimed euroscepticism of the party (see Table A6 in Appendix).

In the second part of Table 7, we present the coefficients of *dsent.1 X Pre European Election 1 month* and *dsent.2 X Pre European Election 1 month* deriving from the estimation of Equation 2. This table provide result in line with the ones presented in the first half of the table for *CDU/CSU*, *SPD*, *FDP* and *Die Linke*. More precisely, OPCBCs experienced by *CDU/CSU* and *Die Linke* do not depend on the sentiment of the media. Moreover, the negative (positive) OPCBC observable for *SPD* (*FDP*) in Table 5 is stronger when the tone of articles is negative. If we consider *SPD* as a liberal party from an economic perspective and *FDP* as a more conservative ones, this situation is in line with the comparative advantage argument (Clark and Arel-Bundock, 2013; Menuet et al., 2021) developed in Section 5.1. In the case of *Green Party*, Table 5 demonstrates a negative OPCBC before EP elections. This cycle seem broader when the sentiment of the press about the European monetary policy is negative. Finally, the

case of *AfD* is astonishing. Our results show that the party is experiencing a positive OPCBC before EP elections (see Table 5). However, contrary to federal elections, EP elections OPCBC for *AfD* is more important when the media coverage is negative. In other words, despite its euroscepticism, *AfD* seem to benefit from positive rhetoric about the ECB prior to an election to the EP. This result is in line with Hayo and Neuenkirch (2014) when they develop that informed citizens on the policy implemented by the ECB tend to trust less the institution. Thus, *AfD* voters reading positive articles about the European monetary policy may be affirmed in their euroscepticism. This effect can be reinforced by the fact that a positive media coverage of European institutions facilitates the party's positioning in opposition to mainstream views ; a key characteristic of modern populism.[36] As robustness, we estimate Equation 3 for federal and EP elections with a SUR model (Zellner, 1962) in Table A9 in Appendix.

7 Robustness

7.1 Alternative Pre-electoral Periods

Like any electoral phenomenon, OPCBCs are likely to be influenced by the pre-electoral period studied. The closer the election date, the broader are politically driven variations of the economic situation (Tufte, 1978). As a first robustness test, we validate our initial results by testing alternative pre-electoral periods. To do so, we define 6 different dummies called *Pre federal Election "i" month* with $i \in [1, 6]$. These dummies take the value 1 during the month i before a federal election.[37] Similarly, we define 6 equivalent dummies for EP elections. It allows us to estimate Equation 2 and to present coefficients of the interaction terms between 6 pre-electoral periods and our 4 textual measures to study potential OPCBCs for our 6 German parties before 2 types of election. Consequently, we obtain 288 coefficients attached to our interaction terms which force us to display our results in Figure A2 for federal elections and Figure A3 for EP elections in the Appendix. We deliberately chose to only estimate Equation 2 in the sake of clarity but also to consider *AfD*. Looking at Figure A2 and Figure A3 in the Appendix, two main results can be drown. First, our results seem more persistent for EP elections than federal ones. Indeed, 20 out of 24 sub-figures ($\simeq 83\%$) in Figure A3 present at least 2 significant coefficients against 14 (50%) in Figure A2. In terms of political parties, *SPD* and *FDP* are characterized by the most persistent coefficients with all their interactions terms characterised by 2 or more significant periods. Second, with only one exception in estimations for *CDU/CSU* (*dOcc_ECB* in Figure A2) with a 10% confidence interval in Figure A3), there are no estimation in which significant coefficients are both positive and negative. Along with the robustness of our estimates, it ensures the validity of their signs.

[36] On this point, the reader can refer to the survey on populism written by Noury and Roland (2020).

[37] More precisely, *Pre federal Election 1 month* is equal to 1 on the month prior to a federal election and 0 otherwise, *Pre federal Election 2 month* is equal to 1 on the month before *Pre federal Election 1 month* and 0 otherwise and so forth until *Pre federal Election 6 month*

Table 7: Main Model Estimated with Newey and West's (1987) Standard Errors - Sentiment Analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Federal Elections						
Pre federal Election	0.0263	-0.4272	0.4550***	0.1403	0.1202	0.1565
1 month	(0.2595)	(0.6934)	(0.1074)	(0.3458)	(0.1929)	(0.1967)
dsent.1	-0.0071	0.0118*	-0.0057	-0.0074	0.0043	0.0051
	(0.0053)	(0.0068)	(0.0035)	(0.0047)	(0.0041)	(0.0088)
dsent.1 X Pre federal	-0.0062	0.0451*	0.0143***	-0.0033	-0.0043	-0.0258**
Election 1 month	(0.0099)	(0.0240)	(0.0037)	(0.0106)	(0.0100)	(0.0102)
Pre federal Election1	0.0197	-0.4137	0.4498***	0.1296	0.1447	0.0402
1 month	(0.2487)	(0.6442)	(0.0997)	(0.3190)	(0.2177)	(0.1816)
dsent.2	-0.0055	0.0083	-0.0035	-0.0064	0.0027	0.0063
	(0.0052)	(0.0065)	(0.0034)	(0.0044)	(0.0042)	(0.0081)
dsent.2 X Pre federal	-0.0054	0.0394**	0.0117***	-0.0018	-0.0046	-0.0307***
Election 1 month	(0.0083)	(0.0176)	(0.0033)	(0.0085)	(0.0085)	(0.0100)
European Elections						
Pre European Election	-0.3551	0.1973	0.1478	0.0648	-0.0039	-0.1191
1 month	(0.3056)	(0.1934)	(0.1482)	(0.1423)	(0.1123)	(0.1353)
dsent.1	-0.0062	0.0124*	-0.0034	-0.0082*	0.0044	0.0029
	(0.0052)	(0.0070)	(0.0032)	(0.0047)	(0.0041)	(0.0087)
dsent.1 X Pre European	-0.0276	0.0271***	-0.0459***	0.0226***	-0.0036	0.0355**
Election 1 month	(0.0254)	(0.0091)	(0.0112)	(0.0086)	(0.0109)	(0.0148)
Pre European Election	-0.2913	-0.0785	0.6074***	-0.0246	0.0749	-0.4330**
1 month	(0.3681)	(0.2084)	(0.1255)	(0.1526)	(0.1250)	(0.1762)
dsent.2	-0.0048	0.0092	-0.0012	-0.0071	0.0027	0.0046
	(0.0051)	(0.0067)	(0.0032)	(0.0043)	(0.0042)	(0.0079)
dsent.2 X Pre European	-0.0283	0.0405***	-0.0666***	0.0243**	-0.0063	0.0510***
Election 1 month	(0.0339)	(0.0114)	(0.0105)	(0.0101)	(0.0137)	(0.0189)
Nbr. observations	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with our two sentiment measures. Only the coefficients of *Pre federal Election 1 month*, the sentiment measures (*dsent.1* and *dsent.2*) and their interaction term are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

7.2 Political Orientation of German Newspapers

In Section 5, we consider the impact of the overall press coverage of the ECB on parties' popularity. However, it is well documented that right-wing and left-wing newspapers are significantly different when it comes to media coverage of economic and political events. As developed by Haselmayer et al. (2017), journalists tend to focus on political personalities who align with their ideological preferences (Puglisi and Snyder, 2011), as well as those favored by the journal they are affiliated with Hallin and Mancini (2004), or even the preferences of their journal's readership (Mullainathan and Shleifer, 2005; Gentzkow and Shapiro, 2006). While German newspapers experience fewer partisan biases (Kaiser and von Königslöw, 2019), such partisan proximities do exist (Falck et al., 2020) and exert an influence on future electoral outcomes. For instance, positive media coverage of a political party significantly enhances its chances to win (Dewenter et al., 2019).

To address this matter, we categorize the 6 German newspapers based on their political orientation along a right-wing/left-wing spectrum. To do so, we follow the classification displayed in Table 1, based on the Warwick German Studies Web, Eurotopics and on the work of Falck et al. (2020). We consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and both *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. The classification of *Frankfurter Rundschau* as a right-wing publication is a subject of debate. While the Warwick German Studies Web and Eurotopics tend to categorize the journal as left-wing, at least concerning societal issues, Falck et al. (2020) consider it as right-wing. Therefore, we test an alternative political classification that do not take into account articles published in the *Frankfurter Rundschau*. The results[38] using this alternative remain similar.

The estimations that examine the impacts separately for right-wing and left-wing newspapers are displayed in Table 8 and Table 9. First, Table 8 displays our results concerning federal elections. In the case of the *CDU/CSU*, we find insignificant OPCBCs, whether the newspapers are left-wing or right-wing. For the *SPD*, when the results are statistically significant, we identify positive OPCBCs when both left-wing and right-wing newspapers mention the ECB. These estimations align with the results presented in Table 3 and Table 4 where we demonstrated negative (positive) and noteworthy OPCBCs for the *CDU/CSU* (*SPD*) popularity series. Concerning the FDP, the positive OPCBC presented when studying *dOccur_Perso.* is driven by left-wing newspapers. Moreover, it seems that *FDP*'s popularity is positively impacted when right-wing newspapers mention inflation related terms. In relation to *Grünen*, the negative OPCBCs observable in Table 3 and Table 4 (*dCount* and *dOccur_ECB*) are uniquely driven by left-wing newspapers. This is an expected results as there is a certain level of partisan congruence between *Grünen* and left-wing newspapers (Falck et al., 2020).[39] When considering *Die Linke*, no significant OPCBCs is observable when considering right-wing newspapers as in Table 3 and Table 4.

[38] These additional regressions are available upon request

[39] The authors present evidence of partisan congruence between *Grünen* partisan preferences and the views expressed in *Der Spiegel* for instance.

However, when considering left-wing newspapers, *Die Linke*'s popularity is negatively impacted by an increase in the number of articles mentioning the ECB (*dCount*) and the number of occurrences of ECB related terms (*dOccur_ECB*) in the month prior to a federal election. One simple explanation can be found in the relative europragmatism of *Die Linke* (see Table A6 for more information). On the contrary, when left-wing newspapers mention inflation related terms (*dOccur_Infl.*), the party becomes more popular. As demonstrated by Falck et al. (2020), this may be explained by the fact that *Süddeutsche Zeitung* is one of the only German newspapers that present a positive discourse towards *Die Linke*. Finally, results concerning the *AfD* are more surprising. We find the expected negative OPCBC when considering right-wing newspapers but an increase in the mention of ECB related terms (dOccur_ECB) or ECB officials (dOccur_Perso.) in left-wing newspapers increases the far right-win party's popularity. One explanation can be found in our partisan sentiment analysis (see Table 10 and Table 12) in which we show that a negative media coverage of the ECB in left-wing newspapers is increasing *AfD*'s popularity.

Second, Table 9 displays our partisan analysis for pre-EP electoral periods. In comparison with Table 5 and Table 6, we find the same results with a two main exceptions: *CDU/CSU* and *AfD* with *dOccur_Infl.*. More precisely, *dOccur_Infl.* appears significant and positive for *CDU/CSU* when considering left-wing newspapers and for *AfD* when considering right-wing newspapers. On the first hand, this puzzling result for *CDU/CSU* can be explained by our partisan sentiment analysis presented in Table 10 and Table 12 in which we develop that an affirmative narration in left-wing newspapers before an EP elections decreases *CDU/CSU*'s popularity. In other words, it means that this increase in *CDU/CSU* imputable to left-wing newspapers is partially explained by a negative discourse on inflation in these newspapers. Unfortunately, this mechanism is not valid for *AfD* as our results on right-wing newspapers are opposed between Table 10 and Table 12. However, these puzzling results on *AfD* can be explained by the relatively low number of observations within our estimates (103 versus 204). Lastly the estimates of these partisan OPCBCs using an SUR model are provided in Table A7 and Table A8 of the Appendix and show no significant disparities.

Partisan Sentiment We also split the sentiment of our newspaper articles into right-wing and left-wing journals. These estimations are presented in Table 10. Concerning federal elections, with the exception of *Grünen* and *AfD*, a positive media coverage of,monetary policy by right-wing (left-wing) newspapers before the election boosts right-wing (left-wing) parties' popularity. Moreover, when significant, a positive discourse in right-wing media significantly decreases the popularity of *SPD*. In the case of the *AfD*, the results are expected as a positive sentiment on monetary policy issues decreases the popularity of the party regardless of journals partisanship. Finally, when significant, our estimations underline that *Grünen* benefit from a positive sentiment of both right-wing and left-wing press articles. This is an intriguing finding, especially in the case of right-wing media. However, a simple explanation

Table 8: Main Model Estimated with Newey and West's (1987) Standard Errors split by Newspapers' Partisanship - Federal Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre Fed. Election	-0.1939	0.4412	0.5811***	-0.0258	0.1795	0.0436	-0.6876	2.0074	0.5422*	-0.8295**	-0.2050	1.0732***
1 month	(0.2381)	(0.7591)	(0.1575)	(0.2965)	(0.2660)	(0.1817)	(0.4859)	(1.4988)	(0.3209)	(0.3263)	(0.2076)	(0.3736)
dCount	-0.0042	-0.0051	-0.0001	0.0039	0.0037	-0.0014	-0.0074	-0.0104*	-0.0009	0.0107*	0.0031	0.0026
	(0.0050)	(0.0036)	(0.0022)	(0.0045)	(0.0024)	(0.0029)	(0.0074)	(0.0063)	(0.0039)	(0.0060)	(0.0037)	(0.0074)
dCount X Pre Fed.	-0.0120	0.0675*	0.0070	-0.0174	0.0038	-0.0168***	-0.0457	0.1798**	0.0004	-0.0886***	-0.0336**	0.0887***
Election 1 month	(0.0131)	(0.0350)	(0.0057)	(0.0141)	(0.0113)	(0.0058)	(0.0321)	(0.0818)	(0.0195)	(0.0243)	(0.0157)	(0.0226)
Pre Fed. Election	-0.1841	0.4164	0.5687***	-0.0334	0.1779	0.1109	-1.0634	3.2557	0.5431	-1.3849***	-0.4498	1.7082***
1 month	(0.2364)	(0.7762)	(0.1657)	(0.2866)	(0.2524)	(0.1900)	(0.6949)	(2.0806)	(0.4482)	(0.4771)	(0.2816)	(0.5234)
dOccur_ECB	-0.0004	-0.0006	-0.0002	0.0002	0.0005**	-0.0000	-0.0012	-0.0013	-0.0000	0.0010	0.0007	0.0003
	(0.0006)	(0.0004)	(0.0003)	(0.0006)	(0.0003)	(0.0004)	(0.0011)	(0.0008)	(0.0005)	(0.0009)	(0.0005)	(0.0010)
dOccur_ECB X Pre Fed.	-0.0024	0.0111*	0.0010	-0.0029	0.0009	-0.0029***	-0.0131	0.0478**	-0.0001	-0.0221***	-0.0093**	0.0240***
Election 1 month	(0.0022)	(0.0060)	(0.0011)	(0.0024)	(0.0018)	(0.0010)	(0.0085)	(0.0221)	(0.0052)	(0.0064)	(0.0043)	(0.0061)
Pre Fed. Election	-0.1673	0.4109	0.5943***	0.0060	0.1943	0.0012	-0.0374	0.3025	0.8116***	0.2970	-0.0081	4.3849***
1 month	(0.2963)	(0.9410)	(0.1600)	(0.3545)	(0.2674)	(0.1722)	(0.5389)	(1.8361)	(0.1534)	(0.6366)	(0.3114)	(1.1940)
dOccur_Perso.	0.0003	-0.0023	0.0003	0.0006	0.0016*	-0.0012	-0.0025	-0.0036	0.0025	0.0036	0.0004	-0.0036
	(0.0027)	(0.0017)	(0.0013)	(0.0022)	(0.0008)	(0.0015)	(0.0032)	(0.0028)	(0.0017)	(0.0030)	(0.0019)	(0.0022)
dOccur_Perso. X Pre Fed.	-0.0037	0.0180*	0.0024	-0.0023	0.0018	-0.0051**	0.0079	0.0156	0.0184**	0.0173	-0.0112	0.1837***
	(0.0056)	(0.0108)	(0.0022)	(0.0042)	(0.0035)	(0.0022)	(0.0254)	(0.0762)	(0.0080)	(0.0272)	(0.0187)	(0.0453)
Pre Fed. Election	-0.1349	0.1901	0.5548***	0.0319	0.1541	0.0593	-0.1804	0.3296	0.5189***	-0.0526	0.2344	0.2423
1 month	(0.2943)	(0.9053)	(0.1412)	(0.3426)	(0.2210)	(0.1899)	(0.2676)	(0.8749)	(0.1548)	(0.2939)	(0.1772)	(0.2161)
dOccur_Infl.	-0.0024	0.0001	-0.0008	-0.0006	0.0009	0.0004	-0.0012	0.0008	0.0001	0.0010	-0.0003	-0.0017
	(0.0021)	(0.0029)	(0.0012)	(0.0017)	(0.0012)	(0.0013)	(0.0027)	(0.0023)	(0.0018)	(0.0024)	(0.0017)	(0.0026)
dOccur_Infl. X Pre Fed.	0.0002	0.0140	0.0046*	0.0014	0.0036	-0.0087***	-0.0037	0.0125	-0.0021	-0.0072	0.0071**	-0.0066*
Election 1 month	(0.0052)	(0.0128)	(0.0025)	(0.0047)	(0.0041)	(0.0026)	(0.0055)	(0.0143)	(0.0027)	(0.0061)	(0.0032)	(0.0038)
Nbr. observations	204	204	204	204	204	103	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 for federal elections with our four textual measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

Table 9: Main Model Estimated with Newey and West's (1987) Standard Errors split by Newspapers' Partisanship - European Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre Eu. Election	-1.2663***	1.0761***	-0.8171	0.3892*	0.0838	0.4435**	1.8695*	-1.3636***	1.4614	-0.5637	-0.4777	-1.5670***
1 month	(0.3219)	(0.3211)	(0.5087)	(0.2063)	(0.1947)	(0.2041)	(1.0606)	(0.4904)	(0.9687)	(0.3591)	(0.5451)	(0.5086)
dCount	-0.0043	-0.0044	-0.0001	0.0036	0.0037	-0.0017	-0.0079	-0.0089	-0.0019	0.0101*	0.0027	0.0024
	(0.0050)	(0.0035)	(0.0021)	(0.0045)	(0.0024)	(0.0029)	(0.0073)	(0.0059)	(0.0038)	(0.0060)	(0.0036)	(0.0074)
dCount X Pre Eu.	0.0992***	-0.0558***	0.0426	-0.0279**	-0.0254	-0.0580***	0.4245**	-0.3260***	0.3203**	-0.1390**	-0.0749	-0.2869***
Election 1 month	(0.0284)	(0.0195)	(0.0375)	(0.0136)	(0.0160)	(0.0175)	(0.1713)	(0.0733)	(0.1522)	(0.0617)	(0.0877)	(0.0911)
Pre Eu. Election	-0.9040***	0.8412**	-0.6539	0.3028*	0.0010	0.0614	0.8482	-0.3397	0.3195	-0.1968	-0.3747	-0.8197***
1 month	(0.1940)	(0.4211)	(0.6171)	(0.1828)	(0.1500)	(0.1409)	(0.6383)	(0.4472)	(0.9017)	(0.2222)	(0.3934)	(0.2770)
dOccur_ECB	-0.0005	-0.0006	-0.0002	0.0002	0.0005**	-0.0001	-0.0012	-0.0012	-0.0001	0.0009	0.0006	0.0002
	(0.0006)	(0.0004)	(0.0003)	(0.0006)	(0.0003)	(0.0004)	(0.0011)	(0.0008)	(0.0005)	(0.0009)	(0.0005)	(0.0010)
dOccur_ECB X Pre Eu.	0.0184***	-0.0074*	0.0025	-0.0042	-0.0059**	-0.0113***	0.0540***	-0.0348***	0.0296	-0.0160**	-0.0120	-0.0327***
Election 1 month	(0.0041)	(0.0044)	(0.0074)	(0.0027)	(0.0023)	(0.0034)	(0.0176)	(0.0101)	(0.0200)	(0.0075)	(0.0097)	(0.0102)
Pre Eu. Election	-1.3111***	1.0725***	-0.8155	0.4101**	0.1055	0.4331**	0.7043	-0.4647	0.6439	-0.2128	-0.2652	-0.8368***
1 month	(0.3026)	(0.3290)	(0.5010)	(0.2017)	(0.1865)	(0.1972)	(0.6417)	(0.3162)	(0.5802)	(0.2114)	(0.3255)	(0.2537)
dOccur_Perso.	0.0002	-0.0020	0.0003	0.0006	0.0016*	-0.0013	-0.0026	-0.0034	0.0023	0.0037	0.0003	-0.0036
	(0.0026)	(0.0016)	(0.0012)	(0.0022)	(0.0008)	(0.0014)	(0.0032)	(0.0027)	(0.0017)	(0.0030)	(0.0019)	(0.0022)
dOccur_Perso. X Pre Eu.	0.0613***	-0.0338***	0.0243	-0.0167*	-0.0166*	-0.0361***	0.1303**	-0.1012***	0.1016**	-0.0442**	-0.0218	-0.0906***
Election 1 month	(0.0175)	(0.0127)	(0.0237)	(0.0088)	(0.0099)	(0.0108)	(0.0543)	(0.0223)	(0.0463)	(0.0189)	(0.0272)	(0.0267)
Pre Eu. Election	-0.4421	0.7285	-0.7510	0.2185	-0.1720	-0.5781***	-0.9997***	0.9055***	-0.7049	0.3346*	0.0249	0.3149*
1 month	(0.3073)	(0.5804)	(0.7544)	(0.2178)	(0.1078)	(0.2125)	(0.3501)	(0.2988)	(0.5187)	(0.1706)	(0.2133)	(0.1751)
dOccur_Infl.	-0.0024	0.0002	-0.0008	-0.0006	0.0009	0.0002	-0.0014	0.0011	-0.0002	0.0009	-0.0001	-0.0019
	(0.0021)	(0.0029)	(0.0012)	(0.0017)	(0.0012)	(0.0013)	(0.0027)	(0.0023)	(0.0018)	(0.0024)	(0.0017)	(0.0024)
dOccur_Infl. X Pre Eu.	-0.0536***	0.0134	0.0115	0.0103	0.0205***	0.0479***	0.0779***	-0.0509***	0.0419	-0.0232**	-0.0167	-0.0456***
Election 1 month	(0.0149)	(0.0173)	(0.0242)	(0.0100)	(0.0059)	(0.0150)	(0.0251)	(0.0145)	(0.0287)	(0.0103)	(0.0134)	(0.0140)
Nbr. observations	204	204	204	204	204	103	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 for EP elections with our four textual measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

can be found in the growing importance of the party over the study period in both federal and EP elections (see Figure 3 and Figure 4 for more information).

On EP elections, Table 10 shows that *SPD* always benefit from a positive media coverage of ECB related issues and *vice versa* for the *CDU/CSU*.[40] Moreover, when significant, our results suggest that *FDP* is characterized by the same mechanisms described in the case of *CDU/CSU*. Finally, as developed in the above Section, a positive sentiment in media articles about the ECB prior to EP elections increases the popularity of *AfD* (Hayo and Neuenkirch, 2014).

Table A10 displays estimations presented in Table 10 performed through Zellner's (1962) estimation technique using a SUR model. No significant differences between these two models can be observed.

7.3 BERT Model

While the *SentiWS* dictionary is commonly used for sentiment analysis in German language, it is characterized by a relatively low accuracy (Munnes et al., 2022) and might fail to consider negation. To tackle this issue, we use a the Bidirectional Encoder Representations from Transformers (BERT, Devlin et al., 2018) large-language model. Transformers are deep learning architectures that uses attention mechanisms and while BERT was initially trained only for language modelling and next word/sentence prediction, (Guhr et al., 2020) fine-tuned it for the specific task of sentiment classification in German. We introduce a sentiment measure called *sentiment_BERT* within Equation 2. These results are presented in Table 11.

Overall Sentiment First, our BERT model estimations present no evidence of sentiment related OPCBCs for traditional political forces (*i.e. CDU/CSU* and *SPD*). In the case of *CDU/CSU*, it confirms the results presented in Table 7. However, Table 11 fail to confirm the presence of sentiment related OPCBCs in the case of *SPD*. Second, our results with *dsentiment_BERT* are more puzzling but still consistent for *Grünen* and *Die Linke*. For *Grünen*, *dsentiment_BERT* is positive when significant likewise *dsent.1* and *dsent.2*. In the case of *Die Linke*, Table 10 displays only insignificant sentiment related OPCBCs while Table 11 shows that a positive discourse about the ECB in the press is increasing the popularity of *Die Linke* before federal and EP elections. Finally, our BERT model estimations do not appear consistent for the 4 others German political forces. More precisely, for *FDP* (*AfD*), Table 10 shows a positive (negative) sentiment related OPCBC before federal elections and a negative (*positive*) one before election to the EP for both *dsent.1* and *dsent.2*. On the contrary, Table 11 presents insignificant *dsentiment_BERT* in the month prior to a federal election and a significant and positive one before elections to the EP for both parties.

In Table A11 we present estimations of Equation 3 with *dsentiment_BERT*. These estimations confirm

[40] See the discussion on the comparative advantage argument (Clark and Arel-Bundock, 2013; Menuet et al., 2021) available in Section 5.

Table 10: Main Model Estimated with Newey and West's (1987) Standard Errors Split by Newspapers' Partisanship - Sentiment analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**	**CDU/CSU**	**SPD**	**FDP**	**Grün.**	**Die Lin.**	**AfD**
Federal Elections												
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre Fed. Election	-0.5001	1.2625	0.4869*	-0.5111**	0.0482	2.5751***	-0.2284	0.3945	0.4894**	-0.2311	-0.1701	0.4928*
1 month	(0.3671)	(1.1258)	(0.2507)	(0.2524)	(0.2957)	(0.7438)	(0.4008)	(1.2084)	(0.2056)	(0.3283)	(0.1619)	(0.2482)
dsent.1	0.0045	0.0178*	-0.0063	-0.0177*	-0.0007	0.0045	-0.0011	0.0129*	-0.0014	-0.0091*	-0.0002	-0.0024
	(0.0108)	(0.0104)	(0.0045)	(0.0094)	(0.0042)	(0.0073)	(0.0063)	(0.0072)	(0.0033)	(0.0052)	(0.0037)	(0.0067)
dsent.1 X Pre Fed.	0.2057*	-0.6211**	0.0388	0.3153***	0.0481	-2.7070***	0.0133	-0.0389	0.0074	0.0362	0.0318***	-0.0303***
Election 1 month	(0.1084)	(0.2580)	(0.0603)	(0.0859)	(0.0636)	(0.6880)	(0.0282)	(0.0673)	(0.0137)	(0.0273)	(0.0120)	(0.0103)
Pre Fed. Election	-0.3597	0.8285	0.4989**	-0.3175	0.0683	0.4195*	-0.2661	0.4143	0.4201**	-0.3173	-0.1061	0.4644*
1 month	(0.3321)	(1.0334)	(0.2130)	(0.2368)	(0.2536)	(0.2420)	(0.4318)	(1.1467)	(0.1704)	(0.3833)	(0.1433)	(0.2434)
dsent.2	0.0061	0.0127	-0.0049	-0.0163*	-0.0014	0.0055	-0.0007	0.0122	-0.0010	-0.0089*	0.0001	-0.0022
	(0.0120)	(0.0095)	(0.0044)	(0.0098)	(0.0040)	(0.0067)	(0.0064)	(0.0075)	(0.0035)	(0.0053)	(0.0039)	(0.0073)
dsent.2 X Pre Fed.	0.1699*	-0.5007**	0.0398	0.2705***	0.0506	-0.8849***	0.0178	-0.0420	0.0149	0.0471	0.0266**	-0.0424***
Election 1 month	(0.1023)	(0.2364)	(0.0518)	(0.0821)	(0.0546)	(0.2239)	(0.0348)	(0.0829)	(0.0108)	(0.0341)	(0.0132)	(0.0130)
European Elections												
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre Eu. Election	-0.7144*	0.7144***	-0.5385	0.2345	-0.0349	0.1639	0.0416	0.1578	-0.0624	0.0354	-0.1871	-0.3066*
1 month	(0.3632)	(0.2736)	(0.5039)	(0.1543)	(0.2199)	(0.1493)	(0.4508)	(0.3107)	(0.5955)	(0.1491)	(0.2667)	(0.1582)
dsent.1	0.0056	0.0168*	-0.0055	-0.0179*	-0.0008	0.0042	-0.0001	0.0118*	-0.0001	-0.0091*	0.0001	-0.0030
	(0.0111)	(0.0101)	(0.0043)	(0.0094)	(0.0041)	(0.0075)	(0.0062)	(0.0068)	(0.0031)	(0.0052)	(0.0037)	(0.0070)
dsent.1 X Pre Eu.	-0.1119***	0.0630***	-0.0624	0.0443***	0.0229	0.0664***	-0.1057***	0.0653***	-0.0661*	0.0385**	0.0213	0.0684***
Election 1 month	(0.0396)	(0.0211)	(0.0401)	(0.0161)	(0.0197)	(0.0211)	(0.0371)	(0.0202)	(0.0393)	(0.0148)	(0.0197)	(0.0209)
Pre Eu. Election	-0.7584**	0.7456***	-0.5623	0.2453	-0.0251	0.2061	0.4604	-0.1142	0.1449	-0.0750	-0.2848	-0.5649***
1 month	(0.3755)	(0.2671)	(0.4876)	(0.1567)	(0.2204)	(0.1550)	(0.5400)	(0.3708)	(0.7373)	(0.1798)	(0.3243)	(0.2132)
dsent.2	0.0069	0.0119	-0.0043	-0.0163*	-0.0015	0.0054	0.0003	0.0111	0.0004	-0.0088*	0.0004	-0.0027
	(0.0122)	(0.0092)	(0.0042)	(0.0098)	(0.0040)	(0.0069)	(0.0064)	(0.0070)	(0.0032)	(0.0053)	(0.0038)	(0.0076)
dsent.2 X Pre Eu.	-0.1264***	0.0791***	-0.0763*	0.0472***	0.0252	0.0769***	-0.1320***	0.0818***	-0.0774	0.0448**	0.0276	0.0829***
Election 1 month	(0.0454)	(0.0225)	(0.0450)	(0.0179)	(0.0229)	(0.0240)	(0.0444)	(0.0250)	(0.0493)	(0.0183)	(0.0239)	(0.0254)
Nbr. observations	204	204	204	204	204	103	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 for federal and EP elections with our two sentiment measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the sentiment measures (*dsent.1*, *dsent.2*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

Table 11: Main Model Estimated with Newey and West's (1987) Standard Errors - BERT Sentiment Analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Federal Elections						
Pre federal Election	-0.1107	0.1381	0.5417***	0.0374	0.1405	0.1810
1 month	(0.2512)	(0.7192)	(0.1644)	(0.2065)	(0.1577)	(0.1947)
dsentiment_BERT	0.0064	0.0030	0.0076**	-0.0059	-0.0050	-0.0117
	(0.0058)	(0.0079)	(0.0032)	(0.0052)	(0.0032)	(0.0120)
dsentiment_BERT X Pre federal	0.0124	-0.0598	-0.0076	0.0317**	0.0200***	-0.0123
Election 1 month	(0.0152)	(0.0415)	(0.0072)	(0.0132)	(0.0065)	(0.0111)
European Elections						
Pre European Election	-0.9481	0.8021*	-0.5515*	0.2939	0.0390	2.5095***
1 month	(0.7048)	(0.4530)	(0.3038)	(0.2373)	(0.1817)	(0.8516)
dsentiment_BERT	0.0074	0.0021	0.0060*	-0.0050	-0.0051	-0.0122
	(0.0059)	(0.0078)	(0.0033)	(0.0054)	(0.0032)	(0.0118)
dsentiment_BERT X Pre European	-0.0239	-0.0179	0.0324***	0.0022	0.0189***	-0.1635***
Election 1 month	(0.0208)	(0.0150)	(0.0094)	(0.0083)	(0.0066)	(0.0597)
Nbr. observations	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with our alternative sentiment measure. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the alternative sentiment measure (*dsentiment_BERT*) and their interaction term are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

all of our results presented in Table 10 despite for *SPD* before EP elections where we find a negative and significant OPCBC.

Partisan Sentiment Differences between right-wing and left-wing newspapers in terms of OPCBCs do not depend on the sentiment measure. To assess the validity of this affirmation, we split *sentiment_Bert* into right-wing journals sentiment and left-wing journals sentiment using the classification developed in Section 7.2. Prior to federal elections, there are no inconsistencies between estimations performed with *dsent.1*, *dsent.2* (see Table 10) and *dsentiment_BERT* (see Table 12). However, our results on EP elections present two main differences between our sentiment measures for both *FDP* and *AfD*. In the case of *FDP*, Table 10 shows negative coefficients of the interaction term but only significant at 10% level. Table 12 displays a positive and strongly significant coefficient when using *sentiment_BERT*. We can observe the opposite situation for *AfD* with a strongly significant positive effect in Table 10 and an opposite negative effect in Table 12. These contrasting results on partisan OPCBCs for *FDP* and *AfD* before EP elections can be explained by the lower accuracy of *SentiWS* dictionary. We consider that BERT model results are more pertinent from a statistical and a political point of view. As presented in Table 12, a positive discourse on European monetary policy before EP elections in right-wing newspapers supports *FDP*, a clearly business-oriented party (Bucher-Koenen and Lusardi, 2011). Moreover, it is

more coherent that a positive discourse in left-wing newspapers decreases the popularity of the far-right eurosceptic party (*i.e. AfD*) contrary to estimates presented in Table 10.

In a nutshell, through our sentiment analysis, we demonstrate that the existence of OPCBCs and their signs are significantly influenced by the sentiment of press articles. Nonetheless, it is difficult to interpret this result with a higher degree of precision as these OPCBCs seem to depend, at least partially on the sentiment measure used.

7.4 German Members of the ECB Governing Council and *Bundesbank*

As an alternate specification, we focus on the direct appearance of German central bankers in media articles. We argue that an article mentioning figures more recognized by the population could have a larger influence on their opinion. Focusing on previous members of the Governing Council and the Executive Boards[41], we count the number of occurences of their names in our press articles and label this variable variation *docc_German*. These estimations are presented in Table 13. Before federal elections, only *AfD*'s popularity is impacted by *docc_German*. The mention of German officials from the ECB or the *Bundesbank* in the press is decreasing party's popularity. This result is also valid in the month preceding an EP election with a higher coefficient. It is in line with the estimations for other parties that demonstrate that German members mentions are more important before EP elections. With the exception of *Die Linke*, significant German officials OPCBCs can be observed for every party. *CDU/CSU* and *FDP* are characterized by positive coefficients confirming that these parties are the more euroenthusiast parties. Consistently with the rest of this study, *SPD*'s negative and significant coefficient confirms the validity of the comparative advantage argument (Clark and Arel-Bundock, 2013; Menuet et al., 2021). Lastly, a negative coefficient of *docc_German* is observable for *Grünen*. It is consistent with the estimated coefficients of *dOccur_Perso* presented in Table 5.

Again, estimations of Equation 3 with a SUR model (Zellner, 1962) and our variable *docc_German* is available in the Appendix (see Table A9). There are no inconsistencies between the results presented in Table 13 and Table A12.

7.5 Google Trend Estimations

One can argue that a significant percentage of German voters do not look for information in print newspapers anymore. The 2022 Digital News Report provided by Reuters Institute and the University of Oxford[42] shows that 63% of German respondents considered print media as one of their news sources in 2013 against 26% in 2022 (p. 80). Consequently, it is crucial to test the pertinence of OPCBCs with online news sources as the 2022 Digital News Report show that 68% of German respondents declared

[41] J. Asmussen, O. Issing, S. Lautenschläger, P. Praet, J. Stark, A. Weber, J. Weidmann, E. Welteke

[42] The complete report is available here https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2022

Table 12: Main Model Estimated with Newey and West's (1987) Standard Errors Split by Newspapers' Partisanship - BERT Sentiment Analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Federal Elections												
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre Fed. Election	-0.2286	0.4934	0.5364***	-0.1237	0.0846	0.2080	-0.1111	0.1381	0.5454***	0.0369	0.1353	-0.0881
1 month	(0.2462)	(0.7508)	(0.1842)	(0.1584)	(0.1890)	(0.1996)	(0.2376)	(0.6334)	(0.1078)	(0.3178)	(0.2188)	(0.1689)
dsent._BERT	0.0078**	-0.0052	0.0059**	-0.0022	-0.0035	-0.0059	0.0017	0.0037	0.0006	-0.0031	-0.0004	-0.0048
	(0.0037)	(0.0053)	(0.0029)	(0.0045)	(0.0030)	(0.0097)	(0.0063)	(0.0051)	(0.0024)	(0.0058)	(0.0021)	(0.0054)
dsent._BERT X Pre Fed.	0.0042	-0.0319*	-0.0055	0.0192***	0.0090**	-0.0211**	-0.0260	0.0995**	0.0160***	-0.0154	0.0009	-0.0366***
Election 1 month	(0.0073)	(0.0164)	(0.0044)	(0.0058)	(0.0038)	(0.0097)	(0.0167)	(0.0432)	(0.0040)	(0.0185)	(0.0172)	(0.0098)
European Elections												
	Right-wing Newspapers						**Left-wing Newspapers**					
Pre European Election	-0.8429	0.8779**	-0.7578**	0.3078	-0.0379	10.7005***	-0.8461	0.8947**	-0.8101***	0.3218	-0.0476	3.6961***
1 month	(0.5773)	(0.4141)	(0.3034)	(0.2198)	(0.1435)	(3.4349)	(0.5952)	(0.3975)	(0.2559)	(0.2215)	(0.1578)	(1.1786)
dsent._BERT	0.0087**	-0.0072	0.0052*	-0.0009	-0.0032	-0.0067	0.0020	0.0046	0.0001	-0.0032	-0.0007	-0.0050
	(0.0035)	(0.0054)	(0.0027)	(0.0046)	(0.0028)	(0.0099)	(0.0065)	(0.0052)	(0.0025)	(0.0059)	(0.0022)	(0.0055)
dsent._BERT X Pre Euro.	-0.0287	-0.0057	0.0303***	-0.0007	0.0176***	-0.5458***	-0.0187	-0.0209	0.0391***	0.0006	0.0147**	-0.1738***
Election 1 month	(0.0186)	(0.0139)	(0.0103)	(0.0076)	(0.0058)	(0.1774)	(0.0225)	(0.0134)	(0.0093)	(0.0090)	(0.0062)	(0.0563)
Nbr. observations	204	204	204	204	204	103	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 for federal and EP elections with our BERT model sentiment measure split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the sentiment measures (*dsent.1*, *dsent.2*) and their interaction terms are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4. This table displays our results with only two digits in order to save some space.

Table 13: Main Model Estimated with Newey and West's (1987) Standard Errors - Occurrences of German Officials

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Federal Elections						
Pre federal Election	-0.1626	0.2509	0.5115***	-0.0614	0.1200	-0.2874*
1 month	(0.2856)	(0.8842)	(0.1367)	(0.2614)	(0.2189)	(0.1634)
docc_German	0.0021	-0.0028	0.0002	0.0011	-0.0005	-0.0020
	(0.0023)	(0.0019)	(0.0010)	(0.0021)	(0.0011)	(0.0023)
docc_German X Pre federal	0.0039	-0.0089	0.0040	0.0099	0.0026	-0.0230***
Election 1 month	(0.0078)	(0.0167)	(0.0029)	(0.0064)	(0.0037)	(0.0073)
European Elections						
Pre European Election	-0.6038	0.6292**	-0.4598	0.2103	-0.0543	0.0868
1 month	(0.3729)	(0.2717)	(0.4959)	(0.1446)	(0.2217)	(0.1422)
docc_German	0.0021	-0.0028	0.0003	0.0013	-0.0005	-0.0021
	(0.0022)	(0.0019)	(0.0010)	(0.0021)	(0.0011)	(0.0023)
docc_German X Pre European	0.0586***	-0.0405***	0.0382*	-0.0190**	-0.0116	-0.0380***
Election 1 month	(0.0214)	(0.0108)	(0.0217)	(0.0088)	(0.0112)	(0.0112)
Nbr. observations	204	204	204	204	204	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with our alternative sentiment measure. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the occurrences of German officials (*doccur_German*) and their interaction term are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4.

that they look for news online.

To study online media coverage of ECB monetary policy, two main data sources are available on a large scale: X (formerly Twitter) and Google Trends (GTrends). Even if X is more and more important for German politicians (Bauer et al., 2023), we can not consider it as a credible data source to study OPCBCs due to: (i) the low number of tweets in German language[43]; (ii) even if the ECB has increased its presence on X, its communication strategy on the site is not directed towards citizens (Korhonen and Newby, 2019) and (iii) the identification of "opinion leaders" comparable to journalists is extremely difficult. Consequently, we choose to exploit GTrends data that corresponds to the number of search of ECB related terms on Google in the overall Germany. Then, we compute the variable *GTrend* which measures the number of search of these terms as an index.[44]

The estimations of Equation 2 using *dGTrend* are available in Table 14. When considering federal elections, only *FDP* is characterised by a significant effect. The more the public is looking for information about ECB related topics before a federal election, the more popular is the *FDP*. It seems consistent with the argument that states that *FDP* is endorsed by the population with the highest level of financial literacy (Bucher-Koenen and Lusardi, 2011). This effect is even higher before an EP election. Finally, it seems that 1 month prior to EP elections, a higher number of Google searches about ECB related topics decreases the popularity of *SPD* and *AfD*. This result is explained by the critical vision of European institutions in these parties – they are respectively europragmatic and eurosceptic – in conjunction with both: (i) the fact the economic voting is only prevalent for incumbent parties (Debus et al., 2014) and (ii) the importance of economic issues for *AfD* voters (Grimm, 2015).

Then, Equation 3 with *dGTrend* is presented in Table A14. Results displayed in Table A14 and Table 14 present no inconsistencies.

8 Conclusion

This paper underlines a new type of political phenomenon experienced by every party despite their partisanship or their membership in governing coalitions. Specifically, this study treat the question of opportunistic impact on parties' popularity induced by media coverage of central bank's actions. Using monthly German data, we underline the existence of these OPCBCs before federal and EP elections. Depending on the type of election or the partisanship of German political parties, we underline the existence of positive, negative or insignificant OPCBCs even though ECB is implementing the monetary policy of 19 countries. More precisely, the more robust results of the paper are the following: (i) OPCBCs

[43]For instance, according to Hong et al. (2011), from 18 April 2010 to 16 May 2010, less than 1% of tweets were written in German language.

[44]Specifically, we consider the number of Google searches of ECB related terms which means that we take into account in our *GTrend* measure some related queries and topics like: "interest rate" ("*leitzins*" in German) ; "Draghi" ; "inflation" ; "Monetary Policy" or "European Commission". A list of the 25 most important ECB related queries and topics according to Google Trends is available in Table A13.

Table 14: Main Model Estimated with Newey and West's (1987) Standard Errors - GTrend

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
Federal Elections						
Pre federal Election	-0.3461	1.3427	0.8709***	-0.0313	-0.0764	0.3650
1 month	(0.5038)	(1.5742)	(0.0896)	(0.6635)	(0.3025)	(0.5627)
dGTrend	-0.0073	-0.0079	0.0019	0.0024	0.0061*	0.0058
	(0.0137)	(0.0068)	(0.0039)	(0.0061)	(0.0033)	(0.0089)
dGTrend X Pre federal	-0.1138	0.6679	0.1856***	-0.0384	-0.1162	0.0371
Election 1 month	(0.1740)	(0.5144)	(0.0325)	(0.2171)	(0.1455)	(0.1117)
European Elections						
Pre European Election	-0.8953	0.2153	0.4950***	0.1107	0.2401	-0.4121**
1 month	(0.8911)	(0.3890)	(0.1280)	(0.2356)	(0.2864)	(0.1808)
dGTrend	-0.0073	-0.0077	0.0018	0.0024	0.0060*	0.0055
	(0.0137)	(0.0069)	(0.0038)	(0.0061)	(0.0033)	(0.0089)
dGTrend X Pre European	0.0358	-0.6831***	1.1735***	-0.1943	0.2451	-1.4139***
Election 1 month	(0.5711)	(0.2376)	(0.0893)	(0.1575)	(0.1871)	(0.4500)
Nbr. observations	203	203	203	203	203	103

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 with the first difference of our *GTrend* variable. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, *dGTrend*) and their interaction term are displayed. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For more information, on explanatory variables introduced and their significance, see Table A4. Due to the small number of observations,

are broader before EP elections; (ii) *CDU/CSU* and *SPD* are impacted by opposite OPCBCs in terms of signs ; (iii) *AfD* is experiencing negative OPCBCs in the vast majority of our estimates due to its anti-elite and eurosceptic rhetoric and (iv) OPCBCs prevalence depend on parameters such as newspapers' partisanship. Then, our results are robust to estimations using two distinct econometric strategies, *i.e.* Newey and West (1987) standard errors time series and simultaneous estimations through a SUR Model (Zellner, 1962). These two methods allow us to control for heteroscedasticity and autocorrelation inherent to the estimation of popularity functions (Lewis-Beck and Steigmaier, 2013) but also for statistical interdependencies between our different parties' popularity series. Moreover, we ensure the robustness of our estimates using alternative pre-electoral periods, *SentiWS* and BERT model sentiment analysis and GTrends data that do not impact significantly our results and their consistency.

This new political phenomenon named OPCBC significantly impacts national politics even in a monetary union, requiring an extended investigation. It would be interesting to study other European countries but also countries like the United States or Commonwealth countries in which textual analysis is feasible and monetary policy represents an important issue. In this paper we present an empirical investigation on OPCBCs but we do not provide a theoretical model that would highly increase the pertinence of the concept. As developed in the paper, a theoretical model based on the comparative advantage framework (Clark and Arel-Bundock, 2013; Menuet et al., 2021) in which media coverage is introduced could be an interesting starting point. Such a model could help undertanding better the results obtained with established political forces (*i.e. CDU/CSU* and *SPD*).

Finally, this paper clearly aims at introducing the concept of OPCBC. The main goal is to test its existence and legitimacy in the case of Germany. However, it could be interesting to investigate a comparable press related political phenomenon in the media coverage of fiscal policy, unemployment, inequalities or every economic topics that is supposedly relevant in public debates prior to an election. Moreover the concept of OPCBC is supposedly impacted by several aspects not studied in this paper. For instance, the organisation of print media within the country, the potential links between newspapers and political parties or the growing importance of online press should be investigated further.

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Table A1: Political Events and the Month in Which They Occurred

Political Events	**Month in which we coded it as 1**	**Description**
German Visa Affair	February, March, April, May & June 2005	The new German visa policy implemented in 2000 was violating several European laws. This visa policy is directly responsible of an important number of visa granted to criminals mainly from Ukraine. This affair leads to the resignation of the Minister of State Ludger Volmer (Green party).
FIFA World Cup	June & July 2006	The football World Cup is organized from 4 June to 4 July in Germany.
Sachsensumpf	June, July & August 2007	An important number of powerful persons are involved in several judiciary scandals in the state of *Sachsen* and more precisely in the city of *Leipzig*.
Wikileaks Controversy	December 2010	In December 2010, the website Wikileaks published classified documents showing that Guido Westerwelle (leader of the FDP) is a mole of the US government.
Guttenberg Plagiarism	February 2011	The Minister of Defence Karl-Theodor zu Guttenberg (CSU) resigned after accusations of plagiarism of his doctoral dissertation. His dissertation has been withdrawn on 23 February.
Fukushima	March, April, May & June 2011	Major nuclear disaster in Japan following a violent earthquake and tsunami occurring on 11 March.
Stuttgart 21	September, October & November 2011	Protests against an urban development project in Stuttgart that is considered by the protesters as bad for the environment. The protests peaked at the end of 2011 just before the 27 November referendum on this issue.
Wulff Case	February 2012	The German federal President Christian Wulff resigned due to several corruption scandals.
Bayern Nepotism Scandal	April 2013	79 members of Bavarian parliament have employed family members as their assistants in well-paid assistant roles. This practice has already been banned in 2000.
Erdogate	March & April 2016	On 31 March 2016, Jan Böhmermann broadcasted a satire that insulted Turkish president Erdogan. On 15 April, the Chancellor Angela Merkel announced that the German government had approved Böhmermann's criminal prosecution. The CDU/CSU has been highly criticized for this decision.
Montblanc Scandal	August 2016	On 24 August, the names of MPs responsible for buying 70.000 euros luxury writing materials with public funds were released in the press.
Berlin Truck Attack	December 2016	A terrorist attack claimed by the Islamic State killed 13 persons in Berlin on 19 December.
Regensburg Donation Scandal	January 2017	The mayor of the city of Regensburg in Bavaria (Joachim Wolbergs from the SPD) is arrested on January 18 due to corruption.
Same Sex Marriage	June 2017	The law allowing same sex marriage in Germany is debated in *Bundestag*.
BAMF Corruption Scandal	April & May 2018	On April 20, employees at the regional BAMF office in Bremen were accused of having illegally accepted hundreds of asylum applicants between 2013 and 2017. On May 23, the German Interior Ministry prohibited the regional BAMF office in Bremen from giving asylum in the country
AfD Donation Scandal	November 2018	Before the 2017 federal election, an AfD regional office in *Baden-Württemberg* received 132.000 euros in an illegal way. Therefore, the AfD has been ordered to pay over 5000.000 euros to the federal government. The political party was under initial suspicion on 14 November.
New CDU/CSU chairwoman	December 2018	Angela Merkel is replaced by Annegret Kramp-Karrenbauer as new CDU/CSU chairwoman.
Hanau Shootings	February 2020	Far-right activists killed 11 persons in a terrorist attack in shisha bars in Hanau (state of *Hessen*).
First Lockdown	March, April & May 2020	First national lockdown following the COVID-19 pandemic outbreak.
Reichstag Storm	August 2021	Far-right protesters tried to storm the *Reichstag* in reaction to the COVID-19 restrictions.

Table A2: Associated Political Group in the EP to each German Political Party

German Political Party	**Political Group in the EP**
CDU/CSU	European People's Party – European Democrats (EPP-ED) [2004] European People's Party (EPP) [2009; 2014; 2019]
SPD	Party of European Socialists (PES) [2004] Progressive Alliance of Socialists and Democrates (S&D) [2009; 2014; 2019]
FDP	Alliance of Liberals and Democrats for Europe (ALDE) [2004; 2009; 2014] Renew Europe (RE) [2019]
Green Party	Greens/European Free Alliance (G/EFA) [2004; 2009; 2014; 2019]
Die Linke	European United Left/Nordic Green Left (EUL-NGL) [2004; 2009; 2014; 2019]
AfD	/ [2004; 2009] No Affiliation [2014] Identity and Democracy (ID) [2019]

Source: European Parliament, see: https://www.europarl.europa.eu/ Table A5.

Table A3: Unconventional Monetary Policy Announcements made by the ECB (January 2005 - December 2021)

Date	**Policy Annoucement**
7 May 2009	Covered bond purchase programme (first) and 1-year Long-Term Refinancing Operations (LTRO), fixed rate full allotment
10 May 2010	Securities market programme
7 August 2011	Securities market programme, new annoucement
6 October 2011	Covered bond purchase programme (second) and new LTRO
26 July 2012	"Whatever it takes"
6 September 2012	Technical features of Outright Monetary Transactions (OMT)
4 July 2013	Forward Guidance
5 June 2014	Asset-backed securities purchase programme and Targeted LTRO
4 September 2014	Asset-backed securities purchase programme and Covered bond purchase programme
22 January 2015	Public Sector Purchase Programme (PSPP)
9 March 2015	PSPP, new announcement
10 March 2016	PSPP, new announcement (increase in size)
12 March 2020	Pandemic emergency purchase programme (PEPP)
9 June 2022	End of the Asset Purchase Programmes announced

For more information about the exact announcements retained, see Ferrara and Angino (2022) and especially Table A1 (p.18)

Table A4: Main Model Estimated with Newey and West's (1987) Standard Errors

Popularity of Parties (%)						
	CDU/CSU	**SPD**	**FDP**	**Grünen**	**Die Linke**	**AfD**
dPopularity(m-1)	-0.118	0.179*	0.027	-0.194*	-0.130*	-0.037
	(0.124)	(0.099)	(0.080)	(0.106)	(0.076)	(0.108)
dInflation	0.074	0.239	0.058	0.106	-0.044	-0.554
	(0.346)	(0.271)	(0.164)	(0.219)	(0.164)	(0.343)
dInflation(m-1)	0.034	-0.494	0.325*	-0.013	-0.027	-0.134
	(0.368)	(0.311)	(0.185)	(0.219)	(0.154)	(0.291)
dUnemployment	-1.685	-0.297	1.864**	0.390	0.280	2.507
	(1.529)	(1.218)	(0.838)	(1.223)	(0.619)	(1.685)
dUnemployment(m-1)	1.229	0.936	-0.315	-0.500	-0.900	-3.443*
	(1.366)	(1.447)	(0.778)	(1.335)	(0.721)	(1.869)
German Visa Affair	1.307***	-0.988***	-0.206	-0.493*	0.222	
	(0.489)	(0.322)	(0.344)	(0.255)	(0.351)	
FIFA World Cup	-1.932***	-0.578***	1.049***	-0.094	-0.072	
	(0.197)	(0.213)	(0.385)	(0.138)	(0.341)	
Sachsensumpf	1.021***	-0.814**	0.336**	-0.588**	0.033	
	(0.292)	(0.348)	(0.138)	(0.266)	(0.284)	
Wikileaks Controversy	1.370***	-0.275	0.022	-0.570***	-0.058	
	(0.347)	(0.171)	(0.119)	(0.164)	(0.086)	
Guttenberg Plagiarism	0.708**	-0.384	0.333*	-2.838***	0.834***	
	(0.339)	(0.304)	(0.174)	(0.230)	(0.161)	
Fukushima	-0.282	0.146	-0.233	1.552***	-0.626***	
	(0.299)	(0.231)	(0.150)	(0.496)	(0.144)	
Stuttgart 21	0.504***	0.235	-0.036	-1.690***	-0.277	
	(0.187)	(0.311)	(0.078)	(0.450)	(0.273)	
Wulff Case	1.305***	-1.793***	-0.314**	-1.934***	0.595***	
	(0.351)	(0.289)	(0.134)	(0.241)	(0.145)	
Bayern Nepotism Scandal	0.689***	-0.555**	0.041	-0.019	-0.872***	
	(0.234)	(0.248)	(0.123)	(0.168)	(0.158)	
Erdogate	-0.492	-1.388***	0.751***	1.398***	-0.809***	0.947**
	(0.309)	(0.399)	(0.138)	(0.189)	(0.104)	(0.381)
Montblanc Scandal	0.667***	-1.663***	0.537***	0.143	0.446***	0.036
	(0.204)	(0.242)	(0.120)	(0.173)	(0.090)	(0.219)
Berlin Truck Attack	1.555***	0.173	0.117	-2.239***	-0.102	-0.726**
	(0.317)	(0.347)	(0.157)	(0.205)	(0.177)	(0.286)
Regensburg Donation Scandal	0.421	0.813***	0.769***	-1.421***	-0.531***	-0.433
	(0.335)	(0.305)	(0.161)	(0.337)	(0.162)	(0.315)
Same Sex Marriage	1.496***	-1.532***	-0.124	0.265**	0.055	0.435*
	(0.315)	(0.309)	(0.203)	(0.132)	(0.093)	(0.239)
BAMF Corruption Scandal	1.298***	0.389**	-0.620	-0.111	-1.119***	0.589***
	(0.338)	(0.174)	(0.401)	(0.548)	(0.156)	(0.221)
AfD Donation Scandal	0.092	0.985**	0.423***	2.649***	-0.919***	-1.518***
	(0.381)	(0.497)	(0.142)	(0.404)	(0.190)	(0.326)
New CDU Chairwoman	3.307***	0.568**	-1.325***	-2.728***	-0.173	-0.307
	(0.276)	(0.281)	(0.150)	(0.324)	(0.157)	(0.325)
Hanau Shootings	0.320	-0.721*	-0.994***	-1.145***	1.040***	0.059
	(0.273)	(0.430)	(0.183)	(0.208)	(0.174)	(0.334)
First Lockdown	4.534***	0.150	-0.780***	-1.530***	-0.701	-1.524***
	(0.841)	(0.597)	(0.208)	(0.545)	(0.513)	(0.482)
Reichstag Storm	-4.566***	5.272***	0.137	-1.435***	-0.589***	0.101
	(0.446)	(0.316)	(0.190)	(0.360)	(0.144)	(0.353)
Constant	-0.283**	0.087	0.039	0.106	0.023	0.176
	(0.117)	(0.115)	(0.069)	(0.114)	(0.076)	(0.143)
Nbr. observations	204	204	204	204	204	103
R2	0.231	0.173	0.124	0.190	0.112	0.180

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 2 without any textual measures. Estimations are performed using an OLS estimator with Newey and West (1987) standard errors. For a complete presentation of every political dummy, see Table A1.

Table A5: Main Model Estimated with a SUR Model (Zellner, 1962)

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
dPopularity(m-1)	-0.056	0.015	0.015	-0.059	-0.153**
	(0.063)	(0.055)	(0.058)	(0.064)	(0.065)
dInflation	0.050	0.294	0.051	0.113	-0.056
	(0.333)	(0.237)	(0.162)	(0.229)	(0.153)
dInflation(m-1)	0.078	-0.577*	0.338**	-0.024	-0.010
	(0.337)	(0.295)	(0.158)	(0.255)	(0.155)
dUnemployment	-1.717	-0.676	1.882**	0.250	0.282
	(1.392)	(1.231)	(0.809)	(1.218)	(0.693)
dUnemployment(m-1)	1.465	0.730	-0.261	-0.449	-0.847
	(1.347)	(1.362)	(0.838)	(1.204)	(0.706)
German Visa Affair	1.210**	-0.908**	-0.219	-0.418	0.209
	(0.544)	(0.406)	(0.370)	(0.426)	(0.363)
FIFA World Cup	-1.863***	-0.570	1.061	-0.123	-0.069
	(0.183)	(0.350)	(0.697)	(0.132)	(0.600)
Sachsensumpf	0.938**	-0.980*	0.335**	-0.489	0.046
	(0.445)	(0.532)	(0.163)	(0.309)	(0.405)
Wikileaks Controversy	1.270***	-0.559***	0.026	-0.633***	-0.054
	(0.239)	(0.166)	(0.106)	(0.176)	(0.085)
Guttenberg Plagiarism	0.624**	-0.417	0.344**	-2.718***	0.822***
	(0.289)	(0.287)	(0.166)	(0.219)	(0.164)
Fukushima	-0.279	0.086	-0.234	1.426**	-0.633***
	(0.358)	(0.288)	(0.156)	(0.620)	(0.165)
Stuttgart 21	0.465**	0.324	-0.037	-1.407*	-0.286
	(0.232)	(0.383)	(0.083)	(0.800)	(0.361)
Wulff Case	1.172***	-1.937***	-0.315**	-1.739***	0.614***
	(0.268)	(0.278)	(0.137)	(0.204)	(0.144)
Bayern Nepotism Scandal	0.597***	-0.752***	0.030	-0.012	-0.865***
	(0.195)	(0.186)	(0.123)	(0.159)	(0.146)
Erdogate	-0.502*	-1.348***	0.750***	1.373***	-0.818***
	(0.298)	(0.519)	(0.125)	(0.321)	(0.142)
Montblanc Scandal	0.582***	-1.386***	0.523***	0.014	0.422***
	(0.170)	(0.189)	(0.109)	(0.145)	(0.088)
Berlin Truck Attack	1.502***	-0.077	0.132	-2.232***	-0.081
	(0.232)	(0.349)	(0.154)	(0.208)	(0.177)
Regensburg Donation Scandal	0.283	1.017***	0.751***	-1.125***	-0.554***
	(0.269)	(0.249)	(0.170)	(0.247)	(0.157)
Same Sex Marriage	1.348***	-2.090***	-0.096	0.345***	0.065
	(0.170)	(0.225)	(0.159)	(0.116)	(0.095)
BAMF Corruption Scandal	1.225***	0.520***	-0.623	-0.134	-1.139***
	(0.334)	(0.179)	(0.693)	(1.077)	(0.261)
AfD Donation Scandal	0.161	0.334	0.417***	2.199***	-0.912***
	(0.294)	(0.299)	(0.156)	(0.266)	(0.173)
New CDU Chairwoman	3.307***	0.540*	-1.314***	-2.990***	-0.188
	(0.264)	(0.293)	(0.135)	(0.247)	(0.154)
Hanau Shootings	0.304	-0.540	-1.008***	-1.131***	1.045***
	(0.271)	(0.389)	(0.193)	(0.232)	(0.186)
First Lockdown	4.266***	0.394	-0.803***	-1.325	-0.730
	(1.495)	(0.760)	(0.282)	(0.988)	(0.682)
Reichstag Storm	-4.644***	5.522***	0.127	-1.204***	-0.604***
	(0.369)	(0.277)	(0.168)	(0.302)	(0.143)
Constant	-0.252**	0.056	0.043	0.092	0.028
	(0.109)	(0.128)	(0.077)	(0.101)	(0.079)
Nbr. observations	203	203	203	203	203
R2	0.229	0.158	0.124	0.175	0.112
Root-Mean-Square Error	1.473	1.360	0.804	1.256	0.780

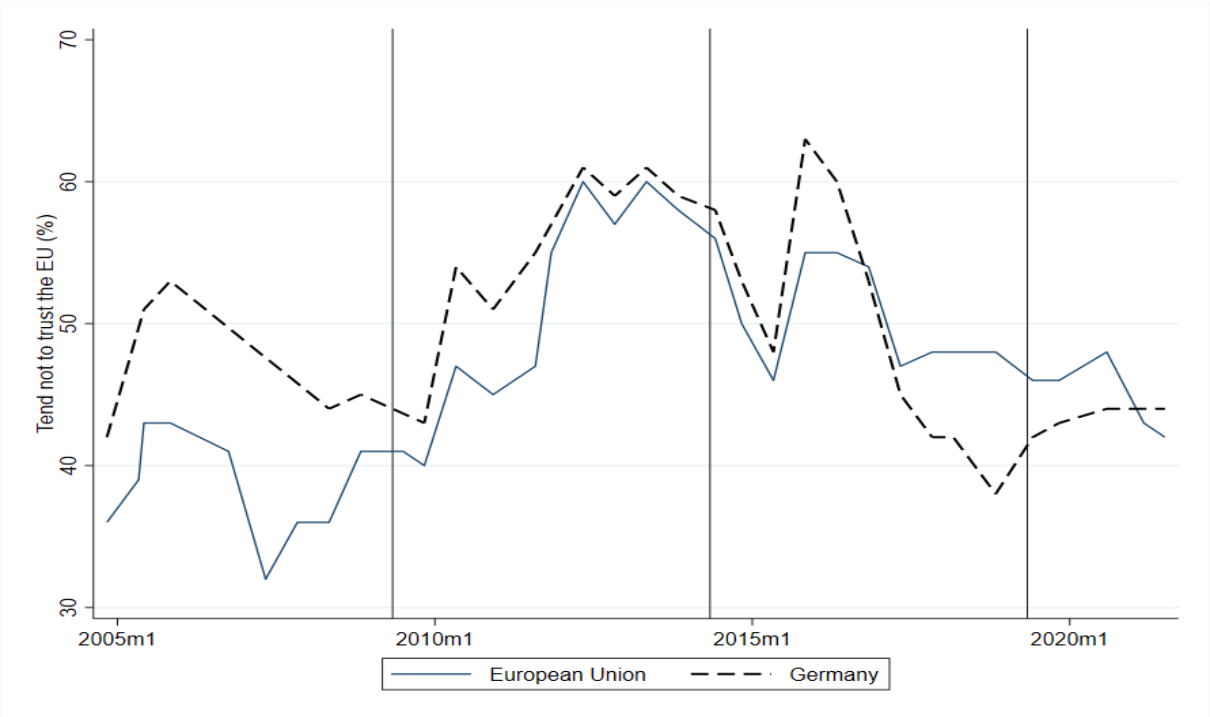
Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 without any textual measures. Estimations are performed using a SUR model (Zellner, 1962) with robust standard errors. For a complete presentation of every political dummy, see Table A1.

Table A6: Typology of Party Positions on Europe

		Support for European Integration	
		Europhile	**Europhobe**
Support for EU	**EU-optimism**	**Euroenthusiasm** *CDU/CSU*; *FDP**	**Europragmatism** *FDP**; *Green Party*; *SPD*; *Die Linke* (after 2019)†
	EU-pessimism	**Euroscepticism** *AfD*; *Die Linke* (before 2019)†	**Eurorejection** /

* FDP has fluctuated between Europhilia and Europhobia thourought the period adopting a position named by Polk et al. (2017) eurorealism.
† As developed by Wagner (2021), prior to the 2019 EP elections, *Die Linke*'s position on the EU is sliding from Euroscepticism to Europragmatism.
The typology used to classify parties comes from Kopecký and Mudde (2002, p. 303). The classification of *Die Linke* is provided by Charlambous (2011). The classification of *AfD* is based on the work of Jankowski et al. (2017) and Jäger (2021).

Figure A1: Euroscepticism Among German People



Source: Eurobarometer, see: https://europa.eu/eurobarometer/screen/home

Figure A2: Main Model with Newey and West's (1987) Standard Errors - From 1 to 6 months Before a Federal Election (90% Confidence Intervals)

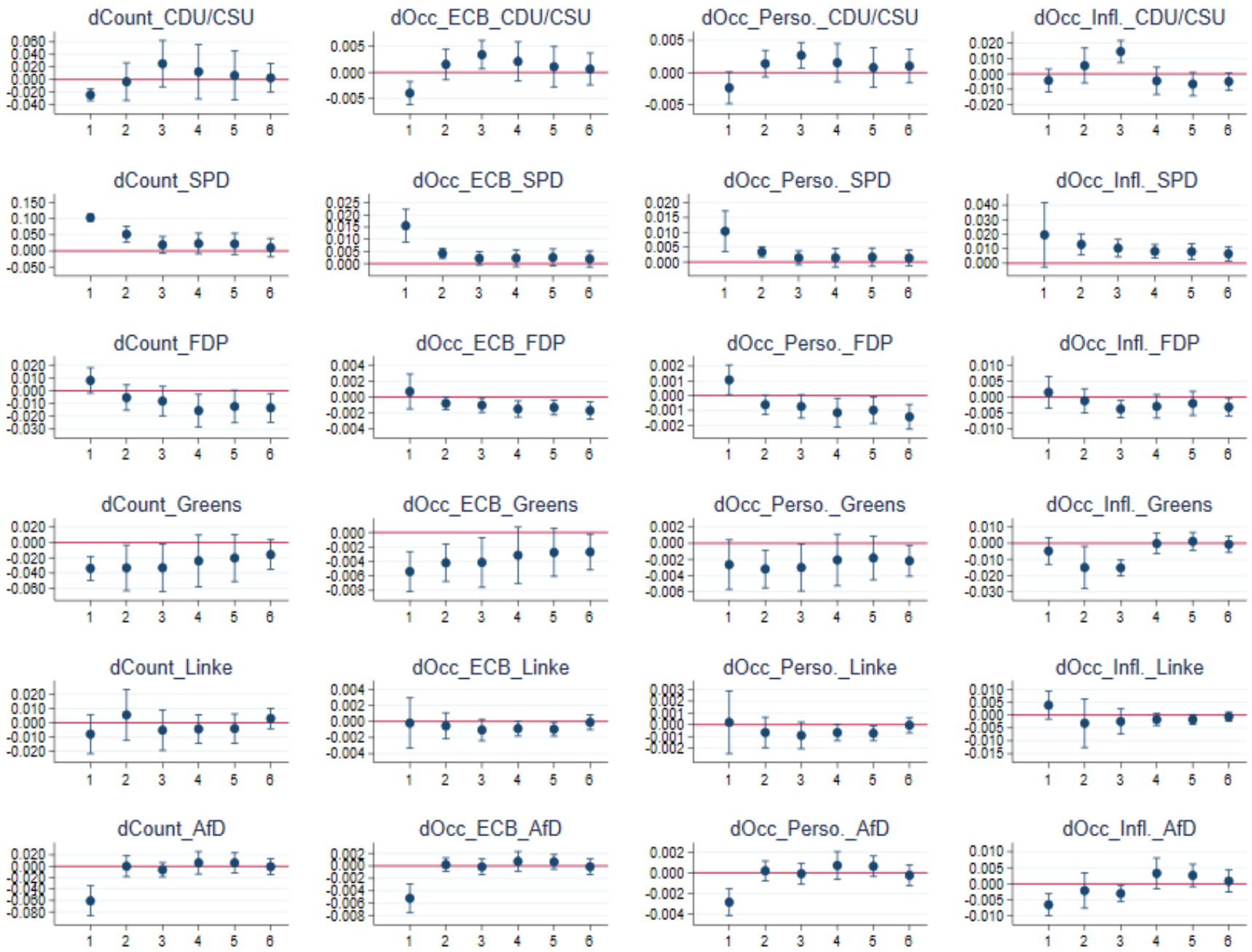


Figure A3: Main Model with Newey and West's (1987) Standard Errors - From 1 to 6 months Before an EP Election (90% Confidence Intervals)

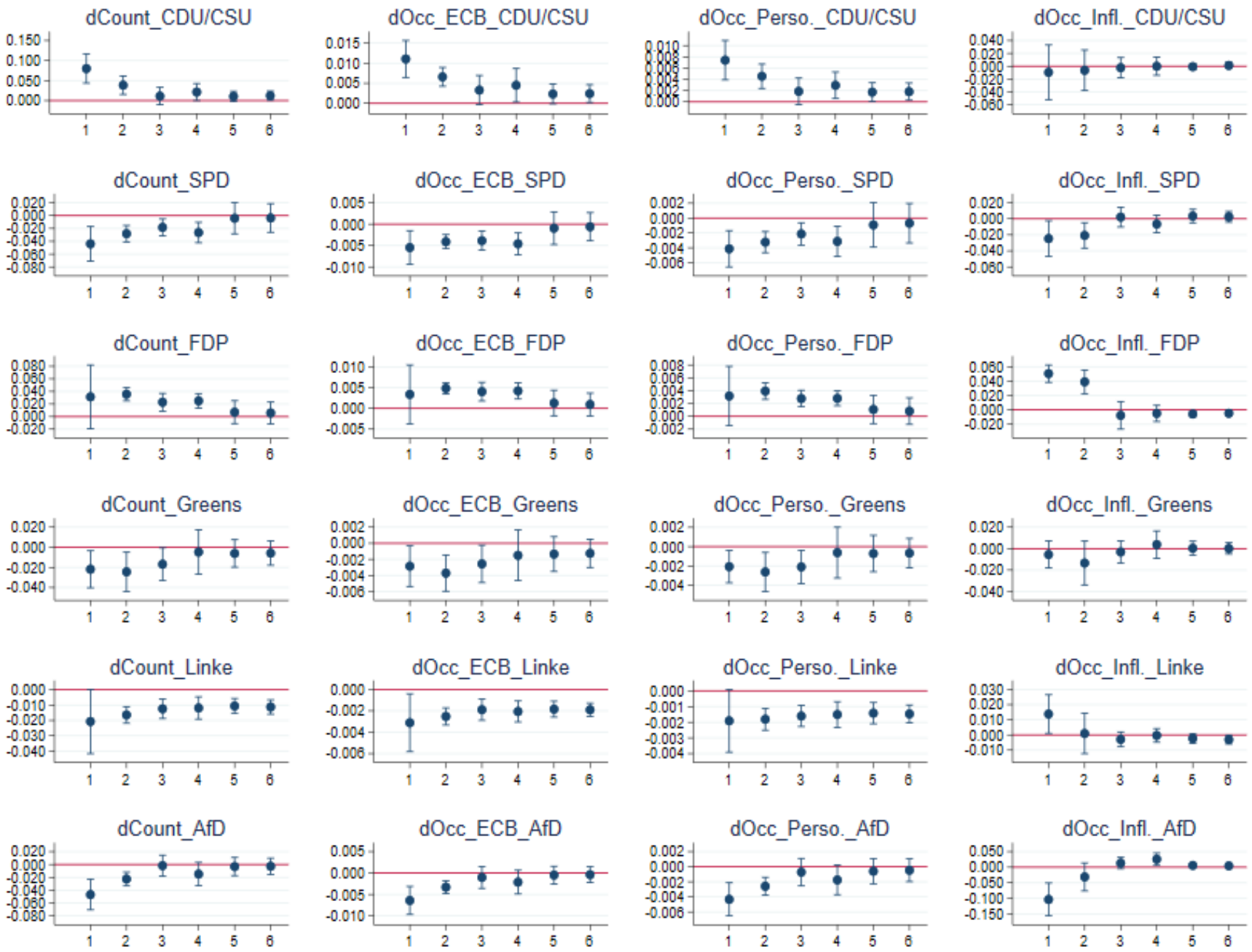


Table A7: Main Model Estimated with Newey and West's (1987) Standard Errors Split by Newspapers' Partisanship - Federal Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**					
	Right-wing Newspapers					**Left-wing Newspapers**				
Pre federal Election	-0.1912	0.3039	0.5797***	-0.0688	0.2259	-0.7424*	1.8215	0.5366*	-0.9203***	-0.1787
1 month	(0.2563)	(0.6673)	(0.1483)	(0.2963)	(0.2199)	(0.3872)	(1.3404)	(0.2824)	(0.3366)	(0.1975)
dCount	-0.0038	-0.0048	-0.0001	0.0031	0.0036*	-0.0076	-0.0096	-0.0010	0.0113**	0.0029
	(0.0043)	(0.0038)	(0.0018)	(0.0040)	(0.0022)	(0.0075)	(0.0061)	(0.0035)	(0.0056)	(0.0032)
dCount X Pre federal	-0.0099	0.0662**	0.0071	-0.0172	0.0060	-0.0494**	0.1739**	0.0002	-0.0943***	-0.0330**
Election 1 month	(0.0112)	(0.0311)	(0.0053)	(0.0140)	(0.0089)	(0.0247)	(0.0715)	(0.0177)	(0.0233)	(0.0155)
Pre federal Election	-0.1836	0.2784	0.5671***	-0.0733	0.2182	-1.1453**	3.0296	0.5358	-1.5174***	-0.4181
1 month	(0.2553)	(0.6823)	(0.1539)	(0.2839)	(0.2087)	(0.5459)	(1.8516)	(0.3987)	(0.4813)	(0.2712)
dOccur_ECB	-0.0004	-0.0005	-0.0002	0.0002	0.0005**	-0.0012	-0.0012	-0.0000	0.0011	0.0006
	(0.0005)	(0.0005)	(0.0002)	(0.0005)	(0.0002)	(0.0011)	(0.0009)	(0.0005)	(0.0008)	(0.0004)
dOccur_ECB X Pre federal	-0.0020	0.0108**	0.0010	-0.0029	0.0012	-0.0141**	0.0462**	-0.0001	-0.0236***	-0.0092**
Election 1 month	(0.0018)	(0.0053)	(0.0010)	(0.0023)	(0.0014)	(0.0065)	(0.0195)	(0.0048)	(0.0062)	(0.0042)
Pre federal Election	-0.1591	0.2730	0.5922***	-0.0340	0.2426	-0.0423	0.1602	0.8084***	0.2346	0.0416
1 month	(0.3032)	(0.8398)	(0.1530)	(0.3595)	(0.2200)	(0.5286)	(1.6906)	(0.1496)	(0.6546)	(0.2504)
dOccur_Perso.	0.0004	-0.0020	0.0003	0.0004	0.0015*	-0.0025	-0.0029	0.0025	0.0036	0.0002
	(0.0023)	(0.0019)	(0.0011)	(0.0019)	(0.0009)	(0.0035)	(0.0027)	(0.0018)	(0.0028)	(0.0017)
dOccur_Perso. X Pre federal	-0.0029	0.0176*	0.0025	-0.0021	0.0026	0.0084	0.0143	0.0183**	0.0153	-0.0092
	(0.0043)	(0.0098)	(0.0021)	(0.0042)	(0.0028)	(0.0243)	(0.0729)	(0.0077)	(0.0289)	(0.0165)
Pre federal Election	-0.1401	0.0715	0.5534***	-0.0061	0.1976	-0.1777	0.2040	0.5183***	-0.0824	0.2556
1 month	(0.2905)	(0.8094)	(0.1339)	(0.3437)	(0.1838)	(0.2699)	(0.7789)	(0.1388)	(0.2863)	(0.1570)
dOccur_Infl.	-0.0024	0.0007	-0.0008	-0.0006	0.0008	-0.0014	0.0012	0.0001	0.0014	-0.0003
	(0.0021)	(0.0031)	(0.0010)	(0.0017)	(0.0011)	(0.0027)	(0.0024)	(0.0017)	(0.0024)	(0.0014)
dOccur_Infl. X Pre federal	0.0014	0.0132	0.0046*	0.0014	0.0048	-0.0025	0.0122	-0.0020	-0.0071	0.0074***
Election 1 month	(0.0047)	(0.0122)	(0.0025)	(0.0052)	(0.0033)	(0.0051)	(0.0130)	(0.0026)	(0.0062)	(0.0027)
Nbr. observations	204	204	204	204	204	204	204	204	204	204

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 for federal elections with our four textual measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Table A8: Main Model estimated with SUR Model (Zellner, 1962) Split by Newspapers' Partisanship - European Elections

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
	Right-wing Newspapers					**Left-wing Newspapers**				
Pre Euro. Election	-1.2833***	1.2315***	-0.8237*	0.5008***	0.0714	2.0122**	-0.9932*	1.4251	-0.6642*	-0.4868
1 month	(0.2791)	(0.3030)	(0.4568)	(0.1917)	(0.1857)	(0.8447)	(0.5269)	(0.8985)	(0.3472)	(0.4954)
dCount	-0.0039	-0.0041	-0.0001	0.0029	0.0037*	-0.0082	-0.0078	-0.0020	0.0107*	0.0025
	(0.0042)	(0.0037)	(0.0018)	(0.0039)	(0.0022)	(0.0073)	(0.0060)	(0.0035)	(0.0056)	(0.0032)
dCount X Pre Euro.	0.1024***	-0.0472**	0.0414	-0.0334**	-0.0254*	0.4469***	-0.2989***	0.3165**	-0.1672***	-0.0742
Election 1 month	(0.0213)	(0.0218)	(0.0345)	(0.0135)	(0.0143)	(0.1374)	(0.0844)	(0.1439)	(0.0609)	(0.0792)
Pre Euro. Election	-0.9074***	1.0318***	-0.6646	0.3872**	-0.0112	0.9129*	-0.0090	0.2915	-0.2189	-0.3846
1 month	(0.1871)	(0.3841)	(0.5510)	(0.1824)	(0.1517)	(0.5014)	(0.4700)	(0.8165)	(0.2094)	(0.3624)
dOccur_ECB	-0.0004	-0.0004	-0.0002	0.0002	0.0005**	-0.0013	-0.0010	-0.0001	0.0010	0.0006
	(0.0005)	(0.0005)	(0.0002)	(0.0005)	(0.0002)	(0.0010)	(0.0009)	(0.0005)	(0.0008)	(0.0004)
dOccur_ECB X Pre Euro.	0.0187***	-0.0054	0.0022	-0.0050*	-0.0059***	0.0562***	-0.0306***	0.0290	-0.0192**	-0.0119
Election 1 month	(0.0033)	(0.0046)	(0.0067)	(0.0027)	(0.0021)	(0.0135)	(0.0115)	(0.0186)	(0.0075)	(0.0086)
Pre Euro. Election	-1.3272***	1.2269***	-0.8212*	0.5181***	0.0925	0.7963	-0.1695	0.6189	-0.2424	-0.2769
1 month	(0.2646)	(0.3085)	(0.4475)	(0.1915)	(0.1797)	(0.5187)	(0.3127)	(0.5273)	(0.1941)	(0.3013)
dOccur_Perso.	0.0004	-0.0017	0.0002	0.0003	0.0016*	-0.0026	-0.0027	0.0022	0.0037	0.0002
	(0.0023)	(0.0018)	(0.0011)	(0.0019)	(0.0009)	(0.0035)	(0.0027)	(0.0018)	(0.0027)	(0.0017)
dOccur_Perso. X Pre Euro.	0.0633***	-0.0282**	0.0237	-0.0200**	-0.0165*	0.1379***	-0.0934***	0.1005**	-0.0533***	-0.0217
	(0.0131)	(0.0141)	(0.0218)	(0.0086)	(0.0088)	(0.0438)	(0.0256)	(0.0438)	(0.0184)	(0.0248)
Pre Euro. Election	-0.4469	0.9784*	-0.7698	0.2849	-0.1850	-1.0073***	1.0863***	-0.7147	0.4258***	0.0127
1 month	(0.3153)	(0.5090)	(0.6699)	(0.2311)	(0.1171)	(0.3023)	(0.2869)	(0.4635)	(0.1571)	(0.2059)
dOccur_Infl.	-0.0023	0.0008	-0.0008	-0.0006	0.0008	-0.0015	0.0015	-0.0002	0.0013	-0.0002
	(0.0021)	(0.0031)	(0.0009)	(0.0017)	(0.0011)	(0.0027)	(0.0023)	(0.0017)	(0.0024)	(0.0014)
dOccur_Infl. X Pre Euro.	-0.0536***	0.0053	0.0124	0.0122	0.0204***	0.0811***	-0.0452***	0.0411	-0.0284***	-0.0166
Election 1 month	(0.0143)	(0.0163)	(0.0216)	(0.0105)	(0.0052)	(0.0191)	(0.0164)	(0.0266)	(0.0100)	(0.0122)
Nbr. observations	204	204	204	204	204	204	204	204	204	204

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 for EP elections with our four textual measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, the textual measures (*dCount*, *dOccur_ECB*, *dOccur_Perso.* and *dOccur_Infl.*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Table A9: Main Model Estimated with SUR Model (Zellner, 1962) - Sentiment Analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Federal Elections					
Pre federal Election	0.0071	-0.5551	0.4568***	0.1175	0.1387
1 month	(0.2641)	(0.5973)	(0.1057)	(0.3316)	(0.1866)
dsent.1	-0.0071	0.0095	-0.0058*	-0.0080	0.0047
	(0.0054)	(0.0063)	(0.0033)	(0.0052)	(0.0039)
dsent.1 X Pre federal	-0.0051	0.0486**	0.0148***	-0.0043	-0.0019
Election 1 month	(0.0101)	(0.0232)	(0.0036)	(0.0122)	(0.0091)
Pre federal Election	0.0035	-0.5374	0.4500***	0.1098	0.1659
1 month	(0.2517)	(0.5558)	(0.1000)	(0.3085)	(0.2152)
dsent.2	-0.0055	0.0059	-0.0036	-0.0071	0.0030
1 month	(0.0053)	(0.0062)	(0.0032)	(0.0051)	(0.0043)
dsent.2 X Pre federal	-0.0050	0.0432**	0.0122***	-0.0029	-0.0025
Election 1 month	(0.0084)	(0.0173)	(0.0032)	(0.0100)	(0.0081)
European Elections					
Pre European Election	-0.2965	0.3850**	0.1374	0.1049	-0.0196
1 month	(0.2426)	(0.1540)	(0.1220)	(0.1262)	(0.1092)
dsent.1	-0.0060	0.0099	-0.0033	-0.0091*	0.0050
	(0.0052)	(0.0064)	(0.0031)	(0.0051)	(0.0038)
dsent.1 X Pre European	-0.0329	0.0310***	-0.0480***	0.0276***	-0.0042
Election 1 month	(0.0228)	(0.0085)	(0.0113)	(0.0085)	(0.0103)
Pre European Election	-0.2055	0.0826	0.5974***	-0.0063	0.0610
1 month	(0.2844)	(0.1670)	(0.1152)	(0.1436)	(0.1155)
dsent.2	-0.0045	0.0065	-0.0010	-0.0080	0.0033
	(0.0050)	(0.0064)	(0.0031)	(0.0049)	(0.0041)
dsent.2 X Pre European	-0.0352	0.0471***	-0.0706***	0.0305***	-0.0071
Election 1 month	(0.0318)	(0.0098)	(0.0110)	(0.0106)	(0.0132)
Nbr. observations	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our two sentiment measures. Only the coefficients of *Pre federal Election 1 month*, the sentiment measures (*sent.1* and *sent.2*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Table A10: Main Model Estimated with SUR Model (Zellner, 1962) Split by Newspapers' Partisanship - European Elections

Popularity of Parties (%)										
	CDU/CSU	**SPD**	**FDP**	**Grünen**	**Die Linke**	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Federal Elections										
Pre Fed. Election	-0.5254*	1.0964	0.4854**	-0.5711**	0.0702	-0.2937	0.2412	0.4854***	-0.2980	-0.1630
1 month	(0.3137)	(0.9967)	(0.2185)	(0.2695)	(0.2770)	(0.3374)	(1.0821)	(0.1773)	(0.3411)	(0.1264)
dsent.1	0.0046	0.0151*	-0.0061	-0.0165**	-0.0006	-0.0007	0.0117*	-0.0013	-0.0092*	-0.0001
	(0.0089)	(0.0085)	(0.0040)	(0.0081)	(0.0041)	(0.0058)	(0.0060)	(0.0028)	(0.0052)	(0.0034)
dsent.1 X Pre Fed.	0.2135**	-0.6029***	0.0392	0.3266***	0.0478	0.0185	-0.0354	0.0075	0.0394	0.0331***
Election 1 month	(0.0898)	(0.2193)	(0.0545)	(0.0809)	(0.0578)	(0.0225)	(0.0614)	(0.0125)	(0.0268)	(0.0116)
Pre Fed. Election	-0.3836	0.6758	0.4972***	-0.3695	0.0897	-0.3274	0.2627	0.4168***	-0.3750	-0.1026
1 month	(0.2840)	(0.9262)	(0.1863)	(0.2523)	(0.2406)	(0.3623)	(1.0361)	(0.1472)	(0.3897)	(0.1216)
dsent.2	0.0062	0.0103	-0.0047	-0.0149*	-0.0013	-0.0001	0.0108*	-0.0009	-0.0090*	0.0003
1 month	(0.0095)	(0.0085)	(0.0041)	(0.0083)	(0.0042)	(0.0059)	(0.0064)	(0.0030)	(0.0051)	(0.0036)
dsent.2 X Pre Fed.	0.1792**	-0.4856**	0.0402	0.2802***	0.0516	0.0228	-0.0384	0.0149	0.0496	0.0285**
Election 1 month	(0.0833)	(0.2072)	(0.0469)	(0.0764)	(0.0512)	(0.0286)	(0.0778)	(0.0100)	(0.0335)	(0.0134)
European Elections										
Pre Euro. Election	-0.7087**	0.9175***	-0.5506	0.3138**	-0.0472	0.0800	0.4149	-0.0829	0.0623	-0.1994
1 month	(0.3127)	(0.2631)	(0.4488)	(0.1389)	(0.2114)	(0.3716)	(0.3068)	(0.5335)	(0.1318)	(0.2531)
dsent.1	0.0058	0.0141*	-0.0052	-0.0168**	-0.0007	0.0004	0.0104*	0.0001	-0.0093*	0.0003
	(0.0088)	(0.0084)	(0.0039)	(0.0081)	(0.0041)	(0.0056)	(0.0059)	(0.0028)	(0.0051)	(0.0033)
dsent.1 X Pre Euro.	-0.1171***	0.0566**	-0.0615*	0.0506***	0.0227	-0.1108***	0.0586***	-0.0651*	0.0454***	0.0211
Election 1 month	(0.0299)	(0.0229)	(0.0371)	(0.0161)	(0.0179)	(0.0292)	(0.0222)	(0.0365)	(0.0147)	(0.0177)
Pre Euro. Election	-0.7546**	0.9439***	-0.5737	0.3264**	-0.0375	0.5130	0.1798	0.1194	-0.0720	-0.2975
1 month	(0.3240)	(0.2558)	(0.4341)	(0.1405)	(0.2113)	(0.4321)	(0.3822)	(0.6669)	(0.1653)	(0.3045)
dsent.2	0.0071	0.0095	-0.0040	-0.0151*	-0.0013	0.0010	0.0094	0.0006	-0.0091*	0.0006
	(0.0095)	(0.0084)	(0.0041)	(0.0083)	(0.0042)	(0.0057)	(0.0063)	(0.0030)	(0.0051)	(0.0035)
dsent.2 X Pre Euro.	-0.1326***	0.0716***	-0.0753*	0.0545***	0.0250	-0.1381***	0.0729***	-0.0762*	0.0531***	0.0274
Election 1 month	(0.0348)	(0.0253)	(0.0418)	(0.0178)	(0.0208)	(0.0346)	(0.0279)	(0.0456)	(0.0183)	(0.0215)
Nbr. observations	203	203	203	203	203	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our two sentiment measures split between right-wing (right part of the table) and left-wing newspapers (left part of the table). As a reminder, we consider *Bild*, *Die Welt*, *Frankfurter Rundschau* and *Handelsblatt* as right-wing newspapers and *Der Spiegel* and *Süddeutsche Zeitung* as left-wing newspapers. Only the coefficients of *Pre federal Election 1 month*, the sentiment measures (*sent.1* and *sent.2*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Table A11: Main Model Estimated with SUR Model (Zellner, 1962) - BERT Sentiment Analysis

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Federal Elections										
Pre Fed. Election	-0.2399	0.3527	0.5385***	-0.1729	0.1039	-0.1194	0.0064	0.5433***	-0.0001	0.1752
1 month	(0.2090)	(0.6844)	(0.1635)	(0.1723)	(0.1828)	(0.2465)	(0.5495)	(0.1078)	(0.3099)	(0.2010)
dsentiment_BERT	0.0072*	-0.0038	0.0058**	-0.0025	-0.0039	0.0011	0.0036	0.0005	-0.0037	-0.0005
	(0.0042)	(0.0050)	(0.0027)	(0.0043)	(0.0029)	(0.0077)	(0.0035)	(0.0030)	(0.0051)	(0.0020)
dsentiment_BERT X Pre Fed.	0.0055	-0.0323**	-0.0054	0.0206***	0.0093**	-0.0229	0.0975**	0.0160***	-0.0167	0.0051
Election 1 month	(0.0068)	(0.0146)	(0.0045)	(0.0058)	(0.0038)	(0.0166)	(0.0391)	(0.0040)	(0.0198)	(0.0143)
European Elections										
Pre Euro. Election	-0.8458	1.0746***	-0.7665***	0.3919*	-0.0538	-0.8554	1.1053***	-0.8213***	0.4054*	-0.0605
1 month	(0.5342)	(0.3285)	(0.2759)	(0.2263)	(0.1401)	(0.5459)	(0.3103)	(0.2363)	(0.2219)	(0.1529)
dsentiment_BERT	0.0081**	-0.0058	0.0050**	-0.0011	-0.0036	0.0014	0.0045	-0.0000	-0.0039	-0.0007
	(0.0039)	(0.0051)	(0.0025)	(0.0043)	(0.0028)	(0.0078)	(0.0036)	(0.0029)	(0.0052)	(0.0020)
dsentiment_BERT X Pre Euro.	-0.0265	-0.0121	0.0309***	-0.0010	0.0180***	-0.0159	-0.0258**	0.0396***	0.0006	0.0148**
Election 1 month	(0.0180)	(0.0117)	(0.0096)	(0.0084)	(0.0051)	(0.0215)	(0.0106)	(0.0089)	(0.0093)	(0.0058)
Nbr. observations	203	203	203	203	203	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our alternative sentiment measure. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the alternative sentiment measures (*dsentiment_BERT*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5. This table displays our results with only two digits in order to save some space.

Table A12: Main Model Estimated with SUR Model (Zellner, 1962) - Occurrences of German Officials

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Federal Elections					
Pre federal Election	-0.1775	0.1131	0.5094***	-0.1016	0.1385
1 month	(0.2590)	(0.7932)	(0.1253)	(0.2699)	(0.2072)
docc_German	0.0022	-0.0023	0.0002	0.0011	-0.0005
	(0.0024)	(0.0016)	(0.0011)	(0.0019)	(0.0010)
docc_German X Pre federal	0.0045	-0.0090	0.0041	0.0101	0.0030
Election 1 month	(0.0066)	(0.0163)	(0.0026)	(0.0064)	(0.0035)
European Elections					
Pre European Election	-0.5917*	0.8388***	-0.4726	0.2765**	-0.0666
1 month	(0.3214)	(0.2589)	(0.4397)	(0.1282)	(0.2130)
docc_German	0.0021	-0.0024	0.0003	0.0013	-0.0005
	(0.0024)	(0.0016)	(0.0011)	(0.0019)	(0.0010)
docc_German X Pre European	0.0614***	-0.0364***	0.0377*	-0.0230***	-0.0115
Election 1 month	(0.0169)	(0.0123)	(0.0204)	(0.0085)	(0.0102)
Nbr. observations	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our alternative sentiment measure. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the occurrences of German officials (*doccur_German*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.

Table A13: Top 25 Related Queries and Topics Within *GTrend* Measure (January 2005 - December 2021)

Rank	**Related Queries**	**Related Topics**
1	"*ezb*"	"policy interest rate"
2	"ecb"	"European Central Bank"
3	"*zentralbank*"	"Euro"
4	"*ezb leitzins*"	"Exchange rate"
5	"*leitzins*"	"Interest"
6	"frankfurt"	"*Deutsche Bundesbank*"
7	"*europäische zentralbank*"	"European Union"
8	"frankfurt ezb"	"Monetary policy"
9	"euro"	"England and Wales Cricket Board"
10	"*die ezb*"	"Rate"
11	"*bundesbank*"	"Inflation"
12	"*ezb bank*"	"Task"
13	"european central bank"	"United States Dollar"
14	"eu"	"Interest rate"
15	"inflation"	"Central bank"
16	"*zinsen*"	"Mario Draghi"
17	"*geldpolitik*"	"Musical instrument"
18	"*ezb zinsen*"	"Basic rate of interest"
19	"*ezb aufgaben*"	"Government bond"
20	"*ezb geldpolitik*"	"federal Reserve System"
21	"*ezb* inflation"	"Goal"
22	"*ezb präsident*"	"Christine Lagarde"
23	"*europäischen zentralbank*"	"European Commission"
24	"draghi"	"Press conference"
25	"*ezb* news"	"Council"

Table A14: Main Model Estimated with SUR Model (Zellner, 1962) - GTrend

Popularity of Parties (%)	**CDU/CSU**	**SPD**	**FDP**	**Grünen**	**Die Linke**
Federal Elections					
Pre federal Election 1 month	-0.3231	1.1405	0.8708***	-0.1134	0.0230
	(0.4928)	(1.4345)	(0.0993)	(0.6602)	(0.2371)
dGTrend	-0.0070	-0.0074	0.0019	0.0026	0.0058
	(0.0102)	(0.0068)	(0.0036)	(0.0064)	(0.0045)
dGTrend X Pre federal Election 1 month	-0.1087	0.6499	0.1840***	-0.0647	-0.0854
	(0.1633)	(0.4769)	(0.0329)	(0.2166)	(0.1292)
European Elections					
Pre European Election 1 month	-0.8114	0.2842	0.4955***	0.1500	0.2343
	(0.8154)	(0.2818)	(0.1144)	(0.2553)	(0.2513)
dGTrend	-0.0070	-0.0072	0.0018	0.0026	0.0058
	(0.0101)	(0.0070)	(0.0037)	(0.0063)	(0.0044)
dGTrend X Pre European Election 1 month	0.0987	-0.7543***	1.1777***	-0.2398	0.2444
	(0.5327)	(0.1954)	(0.0907)	(0.1714)	(0.1724)
Nbr. observations	203	203	203	203	203

Significance levels are: * p < 0.10 ; ** p < 0.05 ; *** p < 0.01.
This table represents the estimation of Equation 3 with our alternative sentiment measure. Only the coefficients of *Pre federal Election 1 month*, *Pre European Election 1 month*, the occurrences of German officials (*doccur_German*) and their interaction terms are displayed. Estimations are performed simultaneously using a GLS estimator with robust standard errors (*i.e.* a SUR model as developed by Zellner, 1962). For more information on explanatory variables introduced and their significance, see Table A5.