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Abstract

Political polarization—broadly defined as the growing ideological distance between political parties or their supporters—has become an increasingly prominent feature of both U.S. and European political discourse. While it is often associated with legislative dysfunction, existing measures tend to conflate polarization with its consequences. This paper proposes a narrative-based, cross-country approach to separately measure ideological polarization and legislative gridlock. Using dictionary-based analysis of national press coverage in France, Germany, Spain, and Italy, we construct two high-frequency indices: a Political Polarization Index, capturing the extent of ideological division, and a Legislative Gridlock Index, capturing evidence of policy stalling. Our results show that polarization has increased significantly in Europe since the Global Financial Crisis, though its institutional consequences vary by country: while France and Germany show a close link between polarization and gridlock, Spain and Italy present more nuanced patterns, likely reflecting differences in political institutions and reform trajectories.

Keywords: political polarization, policy gridlock, fiscal policy uncertainty, textual analysis, Europe.

JEL classification: D72, D74, H3, P16.

Resumen

La polarización política —definida ampliamente como el creciente distanciamiento ideológico entre los partidos políticos o sus simpatizantes— se ha convertido en un rasgo cada vez más destacado del discurso político tanto en Estados Unidos como en Europa. Si bien a menudo se asocia con la disfunción legislativa, las medidas existentes tienden a confundir la polarización con sus consecuencias.

Este documento propone un enfoque narrativo comparativo entre países para medir por separado la polarización ideológica y la parálisis legislativa. Mediante un análisis, basado en diccionarios, de la cobertura de la prensa nacional en Francia, Alemania, España e Italia, construimos dos índices de alta frecuencia: un índice de polarización política, que mide el grado de división ideológica, y un índice de parálisis legislativa, que recoge evidencia de estancamiento en la formulación de políticas.

Nuestros resultados muestran que la polarización ha aumentado de forma significativa en Europa desde la crisis financiera global, aunque sus consecuencias institucionales varían según el país. Francia y Alemania muestran un vínculo estrecho entre la polarización y la parálisis legislativa; en cambio, España e Italia presentan patrones más matizados, lo que probablemente refleja diferencias en las instituciones políticas y en las trayectorias de reforma.

Palabras clave: polarización política, parálisis política, incertidumbre política fiscal, análisis textual, Europa.

Códigos JEL: D72, D74, H3, P16.

1 Introduction

Polarization—broadly defined as the “division into two sharply distinct opposites”—has become a prominent topic in political and economic debates in recent years (Bramson et al., 2017). Although often associated with partisan conflict in the United States, Europe has also seen rising divides amid political fragmentation, institutional instability, and geopolitical disruptions (Emanuele and Marino, 2024). Polarization can occur at the societal level (divisions among the general public) or among political elites. In this article, we focus on the latter — the increasing ideological distance between political parties or their supporters — because it directly influences economic policymaking and the stability of public institutions (Canes-Wrone and Park, 2012; Azzimonti, 2013; Azzimonti et al., 2016, 2020; Azzimonti and Mitra, 2023; Azzimonti, 2023; Ginn and Saadaoui, 2025), and strongly shapes the formation of public opinion (Druckman et al., 2013), possibly undermining effective governance (Seimel, 2024). However, disagreement between political actors can intensify even without a significant increase in ideological distance. In such cases, partisan discord may be driven by affective polarization (strong mutual dislike between opposing groups) as much as by policy differences (Mason, 2015; Diermeier and Li, 2019; Riera and Madariaga, 2023). Therefore, in this study we measure the *salience of policy conflict* in news discourse as a practical proxy for polarization. This focus on conflict captures what ultimately matters for economic uncertainty and policymaking, even if it does not map one-to-one with traditional ideological metrics.

Partisan polarization affects the economy through multiple channels. It can drive unproductive public spending by making budget consensus difficult, resulting in higher expenditure without commensurate improvements in services (Azzimonti, 2013). Polarization heightens economic policy uncertainty, causing businesses and households to delay investment and consumption (a ‘wait and see’ stance) (Baker et al., 2016; Bloom, 2009), which can dampen economic growth (Canes-Wrone and Park, 2012; Azzimonti, 2023). It often leads to suboptimal fiscal decisions — excessive spending or deferred reforms—which exacerbate budget deficits and public debt (Azzimonti and Mitra, 2023; Azzimonti et al., 2020). Deep partisan divisions trigger frequent policy changes and legislative deadlocks, erode investor confidence,

and complicate long-term planning (Azzimonti, 2013, 2023).¹ Finally, severe polarization erodes the global credibility of a country by causing inconsistent foreign policy and preventing international cooperation (Myrick, 2025; Friedrichs, 2022).

Polarization itself is often conflated with its negative consequences, and the term lacks a precise definition (Bramson et al., 2017). Moreover, the public can perceive partisan divides as more extreme than they actually are (Westfall et al., 2015). Commonly it denotes a split of elite opinions into two opposing camps, but such ideological dispersion does not automatically cripple governance. Depending on the institutional context, divergent views may coexist with effective decision-making, while in other contexts even modest divides produce legislative deadlock and heightened uncertainty. It is thus crucial to distinguish polarization as an underlying structural feature of political discourse from the specific legislative difficulties that may follow.

Motivated by this distinction, we develop two high-frequency indices to separately track political polarization and legislative gridlock across four European countries—France, Germany, Italy, and Spain. Our work builds directly on the dictionary-based methodology introduced by Azzimonti (2013), which was used to measure partisan conflict and political polarization in the U.S. context.²

In Europe, existing polarization metrics rely almost entirely on low-frequency data—for example, periodic public-opinion surveys that capture social polarization or infrequently updated proxies for elite polarization such as parliamentary seat distributions—underscoring the absence of high-frequency indicators of elite polarization that this paper seeks to address. One advantage of the press-based index of Azzimonti (2013), which was later extended by Baker et al. (2016), is that it offers a high-frequency alternative. Nevertheless, the index developed by Azzimonti (2013) remains confined to the American context. Despite a large literature on political polarization in the U.S., there is a notable lack of comparable indicators for Europe. This gap is striking given the growing importance of polarization in European politics. For example, Germany has experienced increasing electoral instability

¹In addition, social polarization can also spark unrest, disrupting economic activity, and forcing governments to divert resources to restore order. Moreover, polarization skews economic perceptions, as partisan bias causes people to interpret conditions differently, undermining consumer confidence (Guirola, 2021).

²Azzimonti (2013) developed the Partisan Conflict Index, available from Philadelphia Fed’s website.

following the rise of far-right parties; France has seen deepening ideological divisions in recent elections; and countries like Spain and Italy continue to face ongoing coalition instability. These developments underscore the need for reliable, scalable, and comparable indicators of polarization within the European context.

We adapt this approach to the European setting and extend it in two important ways. First, we construct two separate indices: a Political Polarization Index (PPI), which captures the prevalence of partisan policy conflict (as a proxy for ideological divergence), and a Legislative Gridlock Index (LGI), which captures institutional deadlock. This separation allows us to explore cases—such as Italy—where polarization and gridlock do not move in tandem. Second, we apply a harmonized methodology across four major European countries, enabling cross-country comparisons often missing in the existing literature. Our indices are high-frequency, media-based, and adaptable across languages and political systems. They offer a scalable tool for empirical research and policy analysis.

We find that political polarization in Europe has increased significantly since the global financial crisis and the sovereign debt crisis. In France and Germany, this rise has been closely associated with legislative gridlock. In Spain and Italy, however, the relationship is more nuanced—particularly in Italy, where electoral reforms have mitigated the institutional consequences of polarization. By separating ideological polarization from legislative gridlock, our indices provide a new lens for understanding when and how polarization translates into institutional dysfunction, and offer a foundation for future research on the economic and political consequences of polarization.

The rest of the paper is organized as follows. Section 2 presents the data and methodology, including the construction of the polarization indices. Section 3 discusses the main findings and their implications. Section 4 concludes with a summary of the key points and suggestions for future research. The Appendix provides detailed narratives for the PPI and LGI across France, Germany, Italy, and Spain (see Section C), along with robustness checks for the indices (see Section D).

2 Data and Methodology

2.1 Measurement issues

The study of the consequences of polarization depends crucially on how it is measured and what data are used. Typical approaches include roll-call votes, parliamentary speeches, or survey data (see Appendix A for details). For instance, survey-based measures (e.g., Eurobarometer, ANES) capture societal polarization but lack the granularity to track institutional (elite) dynamics. Their low frequency makes them less useful in fast-moving contexts when polarization is used as a short-term “pulse” indicator of economic or political changes. Even though such methods yield valuable insights, they often suffer from limited frequency, comparability, or scope. In addition, Poole and Rosenthal’s DW-NOMINATE scores (derived from roll-call voting behavior in legislatures) and the speech-based indices of Gentzkow et al. (2019) work well for the U.S. Congress but are less applicable to Europe’s multi-party legislatures (Appendix A of the Appendix provides an overview of these common measures.) In contrast, our approach uses a dictionary-based analysis of press articles (following Baker et al. (2016) and especially Azzimonti et al. (2016)). This text-based method captures the nuances of political discourse across multiple countries with a single, consistent methodology. Our Boolean search technique is simple and transparent, ensuring the resulting indices truly reflect the intended concepts of polarization and gridlock. By applying the same methodology across different countries, we obtain a robust, comparable set of indices that reflect both ideological polarization and legislative gridlock, providing new insights into the dynamics of political polarization in Europe.

2.2 Building the indexes

To construct both the Political Polarization Index (PPI) and the Legislative Gridlock Index (LGI) we make use of the Factiva service from Dow Jones. Factiva not only provides a comprehensive historic database of the major media outlets for a large number of countries, but also comes with its own (Boolean) search capabilities. These allow one to query both the contents of the article and the meta-labels assigned to these articles by the internal classification system.

We define the two national indices using the narrative from the main national newspapers. In particular, we rely on the following sources:

- **Germany:** Süddeutsche Zeitung, Die Welt, Handelsblatt, Der Tagesspiegel, Die Tageszeitung, Börsen-Zeitung, Berliner Zeitung, Frankfurter AZ
- **France:** Le Figaro, Les Echos, Le Monde, Liberación, La Croix, L'Opini3n, La Tribune, L'AGEFI Quotidien
- **Spain:** El Pa3s, El Mundo, La Vanguardia, ABC, Cinco D3as, Expansi3n, El Economista
- **Italy:** Corriere della Sera, Il Sole 24 Ore, La Repubblica, La Stampa, Il Giornale, Italia Oggi, Il Fatto Quotidiano

Note that coverage is not fully balanced at the beginning of the sample: each newspaper is included from the first date it appears in the Factiva database (earliest being January 1997), which means fewer sources contribute in the initial years. Table B.1 in Section B of the Appendix details the coverage period of each newspaper in Factiva.

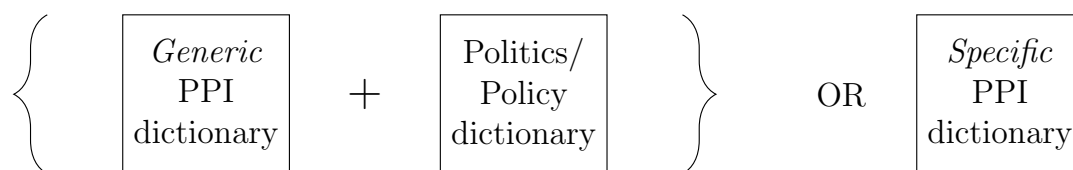
For each index, we obtain two time series: the total number of articles corresponding to the above sources, which would serve to normalize the index, and the number of articles from these sources that, furthermore, fulfill a certain (Boolean) condition associated with the index. Given that our indices are dictionary-based, these conditions are effectively querying the presence of certain specific terms. Note that using the total number of articles as the denominator ensures the index is normalized for overall news volume, allowing meaningful comparisons over time. In other words, it captures the relative attention to the topic (controlling for fluctuations in total articles published) rather than just raw article counts. This also allows to tackle for any possible bias stemming from differential availability of newspapers in Factiva. However, one might worry that a particular newspaper—owing to its political leaning or editorial practices—could unduly skew the index. To address this concern, Appendix D reports a robustness check showing that the index remains essentially unchanged even when recomputed after excluding one source (and even two sources), indicating that no single outlet drives our results.

In line with Azzimonti (2013), we require these terms to be related to both polarization/gridlock and politics, to capture the political aspect of polarization. For the Political Polarization Index (PPI), we focus on keywords related to polarization and political disagreement, such as “polarization”, “ideological division”, and “partisan conflict”. These words must appear together with terms related to politics and policy, such as “government”, “legislation”, and “political party”, to ensure that the context is relevant to political polarization. For the Legislative Gridlock Index (LGI), we consider keywords associated with legislative stalling and policy gridlock, including “legislative impasse”, “policy deadlock”, and “government stalemate”. Similar to PPI, these keywords must be combined with terms related to politics and policy to capture the extent of legislative difficulty in the press articles. This approach allows us to measure the frequency and intensity of these phenomena over time in a structured and meaningful way.

The rest of the section gives a more explicit set of conditions, as well as the details of the terms. To construct the PPI and the LGI index, we require each contributing article to meet certain conditions.

For PPI, that conditions can be represented in diagram 1, and boils down to the following requirements: the article has to either: a) contain at least one term from the Political Polarization dictionary (Table 1), and at least one term from the Politics/Policy dictionary (Table B.2 in Section B of the Appendix); or b) contain at least one term from the specific PPI dictionary (Table 2).

Figure 1: Selection rule for the political polarization index



As for LGI, the selection rule follows diagram 2. That is, to be selected the article has to either: a) contain at least one term from the Legislative Gridlock dictionary (Table 3), and at least one term from the Politics/Policy dictionary (Table B.2 in Section B of the Appendix)); or b) contain at least one term from the specific LGI dictionary (Table 4).

We also exclude articles relating to sport and entertainment using the Factiva preset

Table 1: *Generic* political polarization dictionary

Category	France	Spain	Germany	Italy
Polarization	polaris*	polariz*	polarisie*	polarizza*
Disagreement	divergence* de vues or divergence d'opinions or desaccord* or differend* or (division* or difference*) near1 (ideologiq* or politiq*)	desacuerdo* or diferencia* de opinion* or (division* or diferenc*) near1 (politic* or ideologic*)	meinungsverschieden- heit* or uneinig* or auseinandersetzung* or (weltanschaulich* unterschied*) or ideolog* near1 (unterschied* or differenz* or gegensatz*)	disaccord* or differenz* or di opinion* or (division* or differenz*) near1 (politic* or ideolog*)

Note. For an article to contain a term from this table it needs to contain the term from either of the categories; in other words, the search query will have the elements of each category separated by an “or”.

Table 2: *Specific* political polarization dictionary

Category	France	Spain	Germany	Italy
Difference	(division* or dif- ference*) near1 partisan*	(division* or difer- enc*) near1 par- tidista*	(parteien-streit* or koalitions-streit* or misstrauens-votum* or koalitions-konflikt* or verfassungs-streit* or partei-politische spaltung)	(division* or differ- enz*) near1 (di par- titi*)

Figure 2: Selection rule for the legislative gridlock index

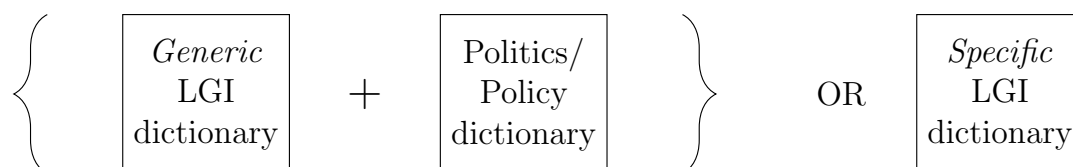


Table 3: *Generic* legislative gridlock dictionary

Category	France	Spain	Germany	Italy
Gridlock	blocag* or bloqu* or impasse* or paralys*	bloqueo* or bloquea* or parali* or punto muerto or estanca* or impass*	stillstand* or block- ade* or block- ier* or sack-gass* or gelahmt* or lahmung* or patt* or verhandlungs- stillstand*	blocca* or impasse* or stallo* or paralis* or punto morto or vicolo cieco

Note. For an article to contain a term from this table it needs to contain the term from either of the categories; in other words, the search query will have the elements of each category separated by an “or”.

classification (as is common in this type of literature), and, furthermore, require that articles focus on the country in question. And, finally, for Germany, we add the clause that the article

Table 4: *Specific* legislative gridlock dictionary

Category	France	Spain	Germany	Italy
Confidence vote	(motion* or vote*) de (censure or defiance or non-confidence)	(mocion* or voto* or votacion*) de (censura or no confianza)	misstrauens-votum* or misstrauens-antrag*	(mozion* or vot*) di (censura or sfiducia)

should not contain the terms “bundesliga or bundesstra*”.³

The final indices are constructed as follows. First, to ensure comparability across time and sources, the index ratios are rescaled by the total number of articles published in the selected press outlets during each month. Second, the resulting series is normalized so that the average value over the 1997–2009 period equals 100.

Finally, in line with the literature, once the indices are constructed, they must be validated through a narrative approach to ensure they respond appropriately to real-world developments. This validation involves identifying peaks in the index—defined as observations exceeding two standard deviations above the mean, with both the mean and standard deviation computed over a two-year rolling window—and examining the underlying articles that contribute to the numerator. For each peak, we extract the narrative component from the headlines of these articles and assess whether their content aligns with a genuine increase in the phenomenon the index is intended to capture—political polarization or legislative gridlock, respectively. The next section discusses this narrative exercise in detail.

3 Results

The evolution of LGI and PPI reveals distinct patterns and dynamics. For all countries, the most significant changes in these indices are observed after the sovereign debt crisis. In France and Germany, both indices tend to move similarly, reflecting that political polarization and legislative gridlock are intertwined. In Germany, the refugee crisis, security, and migration policies have been the main drivers of this co-movement. In France, the indices are related to major social movements and economic grievances, such as the Yellow Vests protests and pension reform strikes, which have fueled both political polarization and legislative gridlock.

³For Germany, we additionally test the robustness of our dictionary, by adding *kanzler* in the position category, removing *bundes** and including *bundestag* or *bundesrat* in the legislative bodies category, and by removing all terms in the general terms category. In all cases, the index almost does not vary (result available upon request), which confirms that neither of these terms drive our findings.

In Spain, both indices also co-move and start increasing since 2016, driven by the Catalan crisis and the highly fragmented general election results in 2015 and 2016, with the rise of new parties that disrupted the traditional two-party system.⁴ Italy presents a different case altogether, where the two indices exhibit divergent trends. The country's electoral reforms, aimed at transforming the electoral system from a pure proportional system to a more majoritarian system, have reduced the need for large coalitions and counteracted the difficulties in reaching agreements due to increased polarization.

In the rest of the section, we will discuss the narrative country by country, providing a detailed examination of the events that contributed to the peaks in both indices. In addition, we have included supplementary information in Section C of the Appendix, which presents detailed narratives for the LGI and the PPI, respectively. The graphs provide a succinct narrative by identifying the key events associated with each peak, offering a quick visual reference for the timing and nature of the underlying developments. In contrast, the accompanying tables in the Appendix elaborates more thoroughly on why specific events contributed to the observed increases in the indices, offering contextual depth and supporting evidence for the narrative validation.

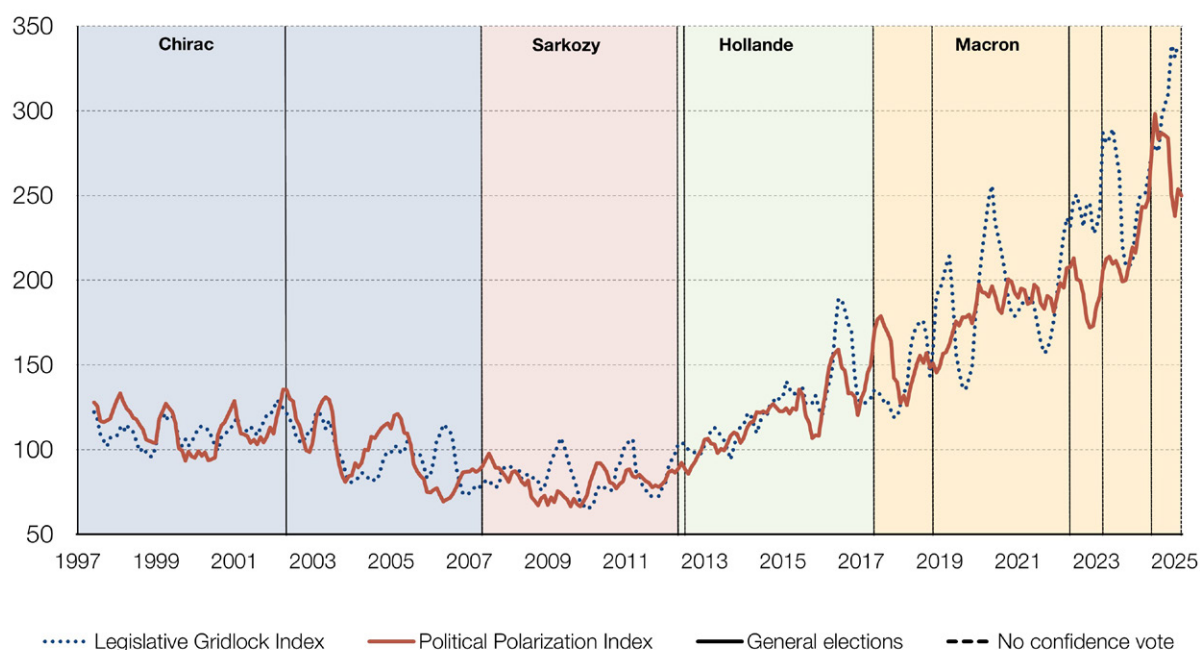
Finally, we perform robustness checks (see Section D of the Appendix)—such as re-computing our indices after excluding individual news sources and altering the dictionary terms—to ensure that no single newspaper or keyword drives the results, confirming that our polarization indicators are stable and reliable.

3.1 France

The PPI for France remained relatively stable until around 2009, after which it began to increase steadily (see Figure 3). The first significant peak occurred in March 2010, coinciding with the regional elections. This was followed by a notable rise in November 2012, driven by the internal crisis within the Union for a Popular Movement (UMP) party and a leadership

⁴The new parties that emerged and gained significant traction in Spain were Podemos, a party founded in 2014 with a progressive policy platform, and Ciudadanos, a party founded in 2006 with a liberal economic stance and a focus on national unity. Both parties gained importance at the national level around 2015. Ciudadanos maintained its position in the 2016 general elections and became the leading political force in the 2017 Catalonia regional elections, peaking in 2019 before declining. Podemos became the third-largest political force in the December 2015 general elections, joined the coalition government with PSOE in 2019.

Figure 3: Political Polarization and Legislative Gridlock indices for France



Note. PPI and LGI are monthly data transformed in 6-months moving average to reduce volatility. Solid vertical lines represent general elections. Coloured areas refers to government cycles.

dispute.⁵ Another peak was observed in June 2015, during discussions on the Greek debt crisis and Greece's missed IMF payment. The index saw a significant rise from 2018 onwards, with key events such as the European Parliament elections in May 2019, protests related to pension reform proposals in January 2020, and the outcome of the 2022 French presidential elections, in which Emmanuel Macron was re-elected. The most recent peak occurred in June 2024, following the anticipated legislative elections announced after the European Parliament election results. These peaks reflect periods of heightened political polarization in France, driven by major political events and shifts.

The LGI for France follows a similar pattern to the PPI, indicating a correlation between the two concepts. The index remained relatively stable until around 2009, after which it

⁵The UMP was a liberal-conservative political party in France, founded in 2002 by supporters of President Jacques Chirac. It aimed to unite various factions with conservative and liberal economic orientations and played a significant role in French politics, enjoying an absolute majority in the National Assembly from 2002 to 2012. The party faced an internal crisis in November 2012, marked by leadership disputes and monetary scandals, leading to the resignation of its president Jean-François Copé. In May 2015, the UMP was succeeded by The Republicans, following an amendment proposed by Nicolas Sarkozy to change the party's name.

began to increase steadily. The first significant peak occurred in October 2010, driven by widespread protests against pension reform and fuel blockades. This was followed by a peak in October 2013, due to the suspension of the ecotax on heavy goods vehicles and subsequent protests and blockades by farmers and transport workers.

In May 2016, protests against the proposed labor law and fuel blockades led to another significant rise in the index. The Yellow Vests movement in November and December 2018 marked a sharp increase in legislative gridlock, as widespread frustration with economic policies and governance pushed political divisions to new levels. Pension reform and strikes in December 2019 also contributed to heightened gridlock.

The most recent peaks occurred in June 2022, following the legislative elections in which the governing party lost its absolute majority, and then in October 2022, March 2023, and December 2024, all driven by the controversy surrounding the use of Article 49.3 of the French Constitution, which allows the government to pass legislation without a vote in the National Assembly unless a motion of no confidence is passed.⁶ These episodes reflect periods of legislative impasse in France, driven by major political events and public protests.

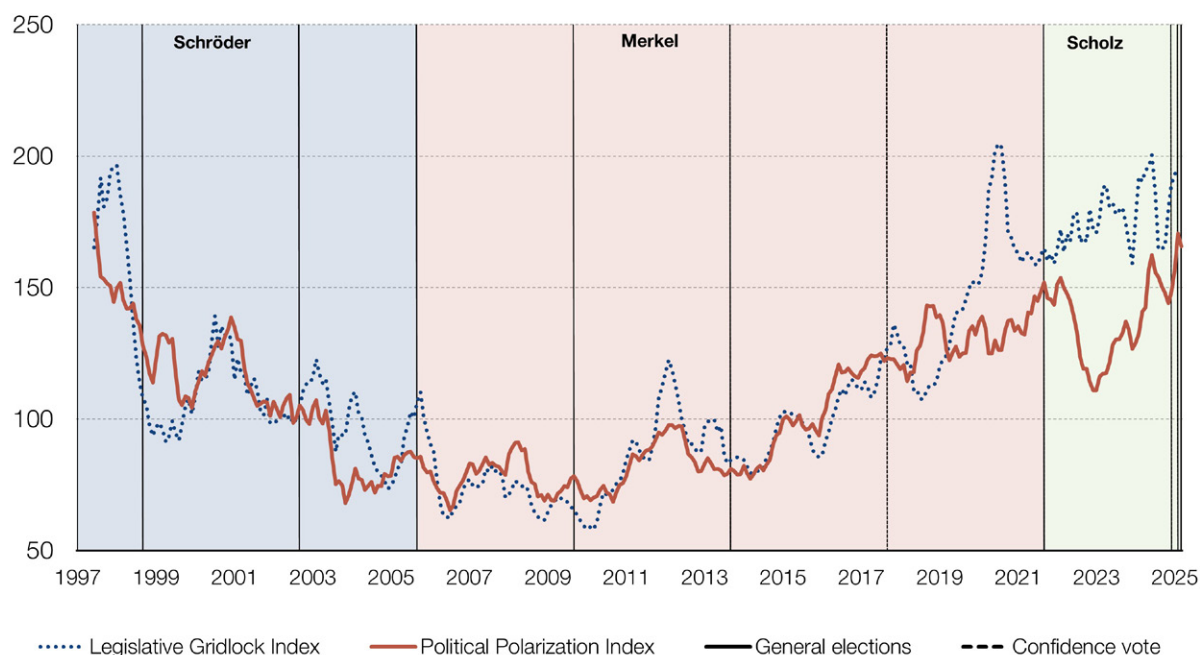
3.2 Germany

The PPI for Germany shows an initial decrease until 2003, a stable period, and a steady increase from 2014 onward (see Figure 4). The following key topics have driven this increase in polarization. Migration and asylum policies have been a significant driver since the refugee crisis in 2015 (e.g., see events such as the Cologne sexual assaults in January 2016, the Munich knife attack in May 2016, and protests against migrants and violence associated with groups opposing immigration or multicultural policies in Chemnitz in September 2018). The rise of the Alternative for Germany (AfD) party has also contributed to polarization, with significant gains in the September 2017 federal elections. This context has been coupled with the surge of political violence and crimes in 2024, primarily driven by a rise in politically motivated offenses linked to nationalist or anti-immigration actors. The most recent peak occurred in February 2025, during the federal elections, which saw significant gains by AfD.

The LGI for Germany follows a similar pattern to the PPI. Several key topics have

⁶Article 49.3 of the French Constitution allows the government to pass legislation without a vote in the National Assembly, unless a motion of no confidence is passed.

Figure 4: Political Polarization and Legislative Gridlock indices for Germany



Note. PPI and LGI are monthly data transformed in 6-months moving average to reduce volatility. Solid vertical lines represent general elections. Coloured areas refers to government cycles.

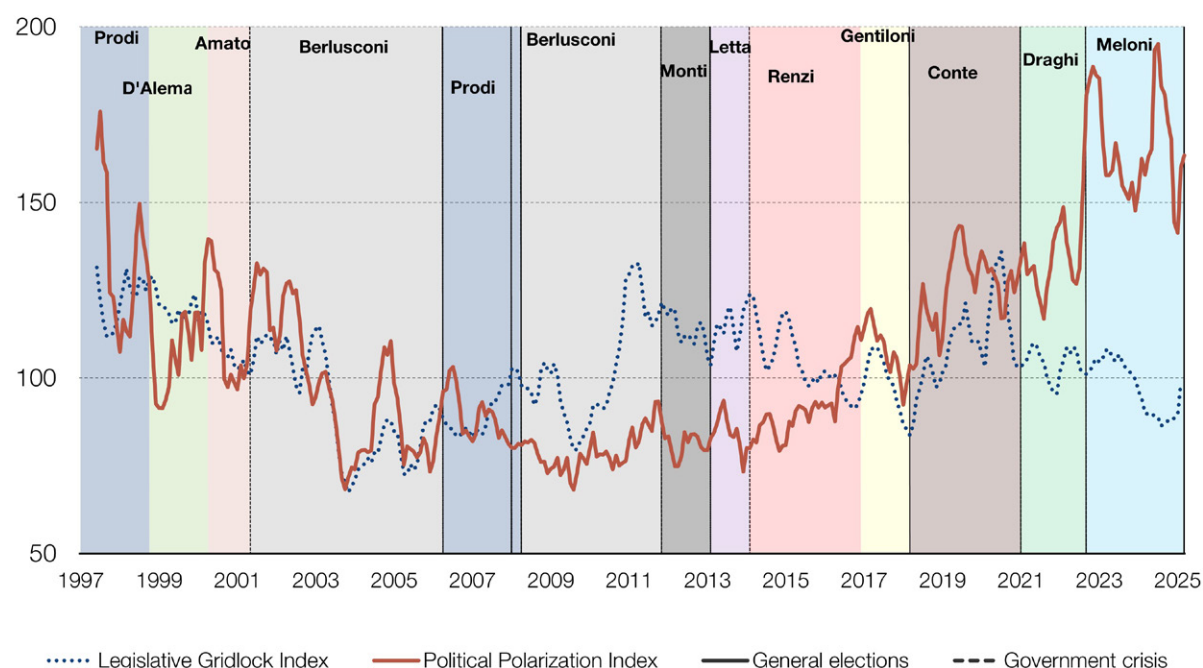
contributed to the difficulty in finding agreements in the German parliament, leading to significant gridlock. The Diesel scandal in July 2017 exacerbated political divisions and regulatory debates. Climate policies have been contentious, with notable examples including the controversial Glyphosat decision in November 2017 and debates over climate and energy policies amid EU Summits in June 2022.⁷ Migration policies, particularly since the refugee crisis triggered by the Syrian civil war in 2015, led to significant political debates and challenges, which added up to the COVID-19 pandemic.

3.3 Italy

The PPI for Italy decreased until 2003, remained stable during the prolonged crisis marked by the financial and sovereign debt crises, and then steadily increased from 2014 onwards

⁷The Glyphosat decision refers to a controversial event in November 2017 when the Germany Agriculture Minister unilaterally approved the continued use of the herbicide Glyphosat in the EU for five more years. This decision was made without consulting the Chancellor or the coalition partners, leading to significant political fallout and criticism from various parties.

Figure 5: Political Polarization and Legislative Gridlock indices for Italy

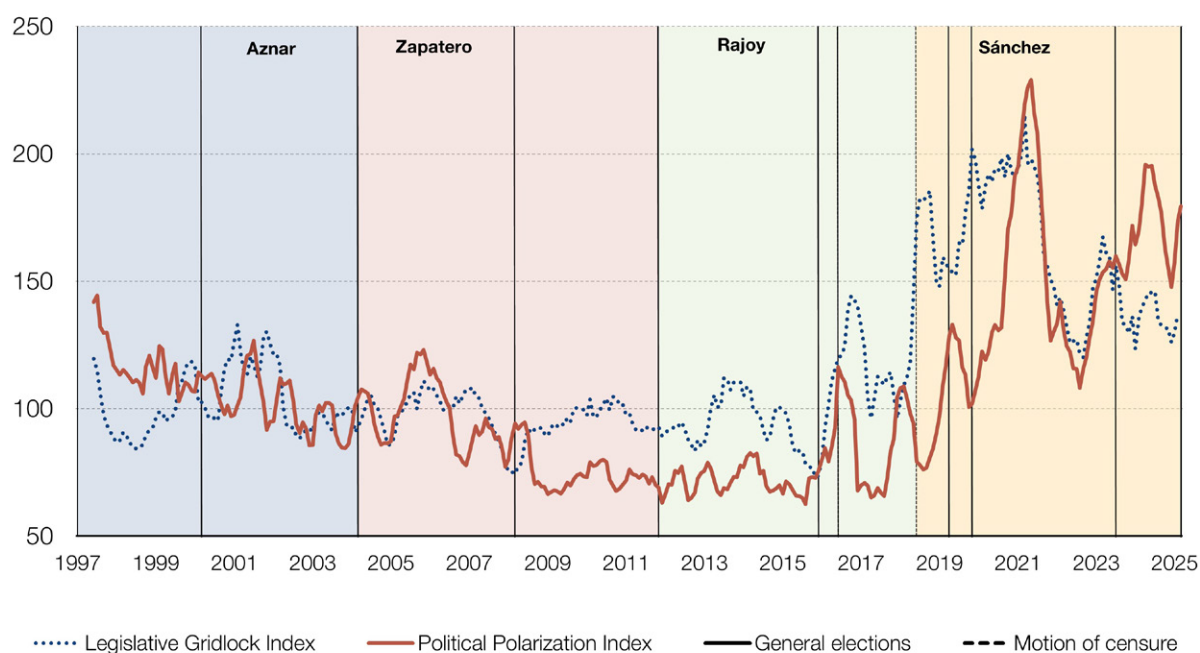


Note. PPI and LGI are monthly data transformed in 6-months moving average to reduce volatility. Solid vertical lines represent general elections. Coloured areas refers to government cycles.

(see Figure 5). This increase began with the government aiming to implement various reforms, including labor, public, administrative, tax, and constitutional reforms. However, these efforts did not succeed in bringing about significant changes, which increased the ideological divide among parties and led to a loss of support. Traditional parties were then challenged by the Five Star Movement (5SM), which advocates for direct democracy, anti-corruption measures, and environmental sustainability. In June 2018, 5SM formed a coalition with the North League, a party known for its nationalist and anti-immigration stance, further increasing polarization by focusing on controversial migration policies. The political polarization index continued to grow in the most recent period, reaching a peak with the formation of the most recent government at the time of writing.

The LGI for Italy has remained relatively stable over time, despite the increasing political polarization. This stability can be attributed to two opposing forces at play. On one hand, the rise in polarization has made it more difficult to reach agreements, as ideological divides among parties have grown. On the other hand, Italy's electoral system has undergone

Figure 6: Political Polarization and Legislative Gridlock indices for Spain



Note. PPI and LGI are monthly data transformed in 6-months moving average to reduce volatility. Solid vertical lines represent general elections. Coloured areas refers to government cycles.

several reforms aimed at transforming it from a pure proportional system, which requires large coalitions to govern, to a more majoritarian system.⁸ These reforms have introduced mechanisms that allocate additional seats to the most voted parties, thereby reducing the need for large coalitions and counteracting the difficulties in reaching agreements due to increased polarization. Despite these efforts, there have been notable peaks in the gridlock index, reflecting moments of heightened legislative difficulty, such as the G8 Summit violence and motion of no confidence against the Interior Minister in July 2001, the resignation of Justice Minister in January 2008, the political stalemate due to the failure to form a coalition government in April 2013, and the motion of no confidence against the head of government in August 2019.

3.4 Spain

The PPI for Spain remained relatively stable between 1997 and 2015 (see Fig 6). However, this picture began to change in 2015 with the general elections in December 2015 and June 2016, which resulted in fragmented parliaments and coalition challenges. From 2017 onward, there was a significant upward trend in polarization, intensifying through 2021. Notably, the Catalan independence referendum in October 2017 deepened divisions regarding the independence debate, although it did not result in a major polarization peak. This may be because, despite disagreements within major parties about the government's handling of the crisis, there was a general agreement on the use of constitutional powers, including the temporary suspension of Catalonia's autonomy.

The peak of polarization occurred in March 2021, driven by three no-confidence votes against regional governments and the decision to call snap elections in Madrid after severing ties with the Citizens party.⁹ This marked the beginning of a downward turn following the first major polarization wave.

From mid-2022, polarization levels began to rise again, influenced by events such as the general elections in July 2023, and the Amnesty Law Debate. These events renewed political debates and societal divisions, contributing to the current polarization level, which stands at approximately 1.5 times that of 2010.

The LGI for Spain remained relatively flat until 2016, after which it began to increase significantly. The index saw peaks during significant political crises, such as the political stalemate and government formation issues in September 2016. This period was followed by the government transition and formation in June 2018, which contributed to further gridlock. In October 2020, the index peaked again due to the motion of censure against the ruling government.¹⁰ The most recent peak occurred in March 2021, driven by the political crisis

⁸The electoral system in Italy has undergone several reforms, including the mixed-member majoritarian system in place between 1993 and 2005, the closed-list proportional system introduced in 2006, the Italicum reform in 2015, and the Rosatellum reform in 2017.

⁹Citizens party (Ciudadanos in Spanish) is a political party with a market-oriented and pro-unity platform. Founded in Catalonia in 2006, the party initially enjoyed growing support throughout the 2010s on a regional and national level, owing to its staunch opposition to Catalan independence. However, after refusing to form a coalition with the Spanish Socialist Workers' Party (PSOE) in 2019, Ciudadanos experienced a series of electoral defeats, leading to its near-complete political collapse.

¹⁰Vox party presented a motion of censure against the head of the government in October 2020, citing

of Murcia region and Madrid elections.

4 Discussion and concluding remarks

In this paper, we propose a narrative-based, cross-country approach to separately measure ideological polarization and legislative gridlock in Europe. Using dictionary-based analysis of national press coverage in France, Germany, Spain, and Italy, we construct two high-frequency indices: the Political Polarization Index (PPI) and the Legislative Gridlock Index (LGI).

We achieve this by employing dictionary-based content analysis to track the frequency of relevant political terms in national press articles. The PPI captures the extent of ideological division, while the LGI captures evidence of policy stalling. This methodology allows us to measure these phenomena over time and across different countries.

Our findings reveal that political polarization has increased significantly in Europe since the sovereign debt crisis. In Germany, it tends to be related to the refugee crisis as well as migration and security issues, while in France it is more driven by social movements and economic grievances. In Spain, the Catalan crisis and the fragmentation of the 2016 elections have been significant drivers. In these three countries, both indices are intertwined, reflecting a close link between polarization and gridlock.

Italy presents a different case, where polarization has increased due to various factors, but legislative gridlock has remained stable. This stability is attributed to reforms in the electoral system that have reduced the need for large coalitions. The importance of distinguishing between these two indices, compared to existing literature that tends to consider them as a unique phenomenon, lies in the fact that gridlock can be a consequence of polarization, but other factors, such as changes in the electoral system, can also induce gridlock.

various grievances including the government's handling of the COVID-19 crisis. Vox is a political party in Spain, founded in 2013, which has positioned itself on issues such as national unity, immigration, and EU integration. Vox strongly opposes separatist movements in Spain, particularly the Catalan independence movement and Basque nationalism. The party entered the Spanish parliament for the first time after winning seats in the April 2019 general election.

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Appendix

A Measuring Polarization

Polarization is measured using a range of approaches that capture different aspects of political and social division. Broadly, these measures can be categorized based on whether they focus on the public or the governing elite, the type of data they rely on, and the analytical methodology used. Table A.1 summarises the most common approaches. Among the most established legislative measures of polarization are those based on roll-call votes, which analyze how often representatives vote along party lines or break ranks. Poole and Rosenthal's DW-NOMINATE scores are a widely used example, applying dimensional scaling techniques to roll-call votes in legislatures such as the U.S. Congress to measure ideological polarization over time. By mapping representatives' positions based on their voting patterns, these measures reveal trends in party cohesion, ideological divergence, and legislative gridlock. Another approach, exemplified by Müller & Schnabl's work on EU political polarization, systematically classifies extreme parties based on parliamentary election data, allowing for cross-country comparisons of political fragmentation. Beyond voting records, Gentzkow et al. (2019) work on parliamentary speech polarization uses machine learning and textual analysis to track how political rhetoric within legislative bodies has evolved over time. These measures provide insights into polarization at the institutional level, offering a way to track partisan alignment and the increasing difficulty of bipartisan cooperation in policymaking. However, while they effectively capture elite polarization, they do not necessarily reflect how divisions manifest among the general public.

Public-oriented measures typically rely on survey data, capturing how individuals perceive ideological divisions, their attitudes toward opposing political groups, and their broader sense of social cohesion or conflict. Traditional survey-based approaches, such as ANES and Eurobarometer, directly ask respondents to place themselves on an ideological scale or rate how they feel about different political parties. Other methods employ more sophisticated techniques, such as topic modeling on political surveys, as seen in Draca's work, which extracts latent ideological themes from large-scale opinion datasets. Additionally, affective

polarization indices focus on emotional divisions between political camps, measuring the extent to which partisans distrust or dislike members of the opposing side. Beyond political surveys, economic and social measures of polarization assess structural divides within societies, including income inequality (Gini coefficient), residential segregation indices, and social network homophily measures, which quantify the extent to which people interact only within ideologically similar groups. These measures provide a more comprehensive picture of polarization by incorporating economic and social dimensions beyond purely political alignment.

Figure A.1: Typical Polarization Measures

Broad Polarization Type	Elite vs. Public	Measure Type	Data Used	Technique Used	What It Measures	Example Papers
Political	Public	Surveys	Public opinion surveys (e.g., ANES, Pew, Eurobarometer)	Direct survey analysis	Perceived ideological distance	Liliana Mason (2015)
Political	Public	Surveys	Public opinion surveys	Latent topic modeling	Latent political themes in survey responses	Draca (Political surveys)
Political	Elite	Legislative	Roll-call votes in legislative bodies	Dimensional scaling, clustering	Partisan polarization in legislative voting behavior	DW-NOMINATE, Party Unity (Pool and Rosenthal's work)
Political	Elite/Public	Elections	Parliamentary election data	Classification of party positions	Polarization based on the rise of extreme parties	Müller & Schnabl (Polarization in EU elections)
Social	Public	Economic	Income data, job market statistics	Inequality indices, distributional analysis	Economic polarization via income inequality and class divergence	Gini, Middle-Class Decline
Social	Public	Segregation	Residential location data	Dissimilarity index calculations	Segregation of social groups in urban environments	Dissimilarity Index
Social	Public	Trust & Networks	Social network interactions, survey data	Network analysis, homophily measures	Polarization in social interactions and information ecosystems	WVS, Facebook Echo Chambers (Bakshy 2015),
Social	Public	Surveys	Survey data on partisan attitudes	Direct survey analysis	Hostility, distrust, and emotional division between groups (affective polarization)	Iyengar (2012)

B Index Construction

Table B.1: Time coverage of considered newspapers

Newspapers	Availability in Factiva
Germany	
Süddeutsche Zeitung	12 January 1995
Die Welt	3 may 2004
Handelsblatt	25 February 2013
Der Tagesspiegel	3 February 2006
Die Tageszeitung	1 April 1997
Börsen-Zeitung	20 July 2013
Berliner Zeitung	30 September 1998
Frankfurter AZ	14 January 2011
France	
Le Figaro	31 October 1996
Les Echos	1 January 1997
Le Monde	19 December 1944
Liberación	16 February 1998
La Croix	13 January 2003
L'Opini3n	3 July 2014
La Tribune	2 January 1996
L'AGEFI Quotidien	14 April 2004
Spain	
El Pa3s	1 February 1995
El Mundo	2 January 1995
La Vanguardia	4 may 1997
ABC	16 may 1997
Cinco D3a	15 August 1996
Expansi3n	1 August 1995
El Economista	27 April 2007
Italy	
Corriere della Sera	27 January 1997
Il Sole 24 Or	10 March 2001
La Repubblica	9 July 2005
La Stampa	5 September 1996
Il Giornale	22 October 2002
Italia Oggi	9 September 2002
Il Fatto Quotidiano	19 July 2015

Note. Newspapers are available in Factiva repository since the date reported in the table.

Table B.2: Policy/politics dictionary

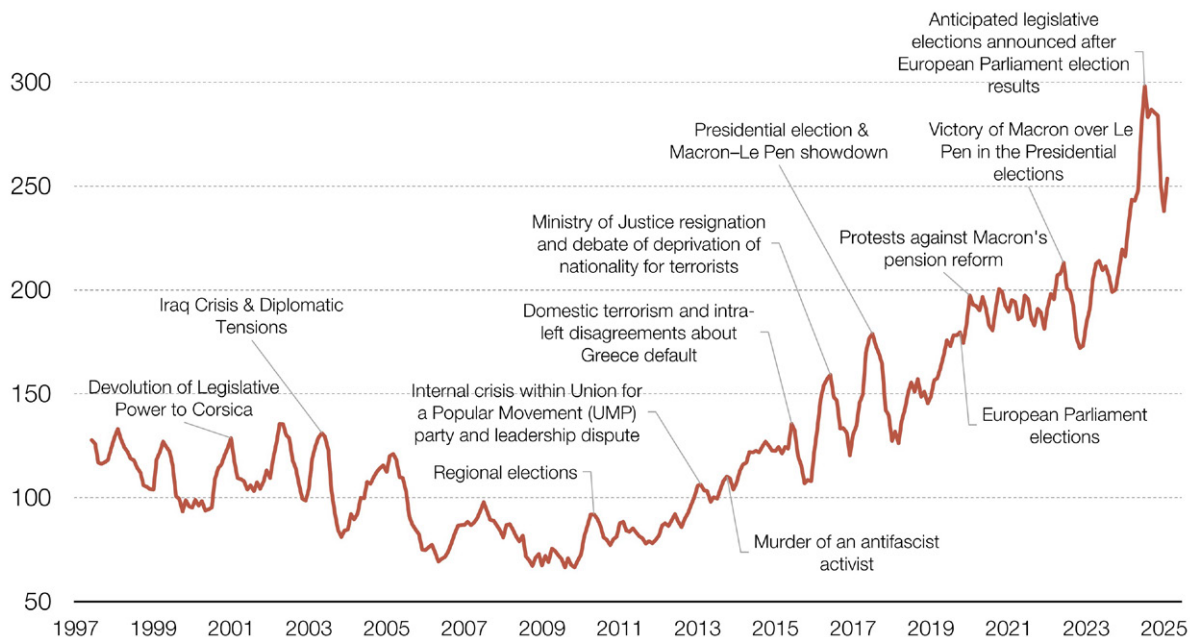
Category	France	Spain	Germany	Italy
Government	gouvernement	gobierno	regierung	governo
Seats of power	elysee or matignon	moncloa or congreso	schloss bellevue or regierungssitz	palazzo chigi or quirinale or palazzo montecitorio or palazzo madama
Positions	president or premier ministre	primer ministro	minister-präsident* or kanzleramt*	primo ministro or presidente del consiglio
Legislative bodies	assemblee or senat or parlement*	senado or parlament*	bundes* or parlament* or landes-parlament*	senato or camera or parlament*
Politics	politique* or parti* or coalition*	partido* or partidist* or politic* or coalition*	koalition* or partei* or politisch* or politik*	politic* or coalizion* or partit*
General terms	budget* or impot* or taxe* or deficit* or depense* public* or defense or dette publique or reform* or fiscale*	fiscal* or deficit* or deuda publica or defensa* or impuesto* or presupuesto or gasto* publico* or reform* or deuda nacional or regla de deuda	steuer* or staatsverschuldung* or defizit* or haushaltsdefizit* or staatsdefizit* or fiskal* or verteidig* or haushalt* or offentlig* ausgaben* or reform* or handels-defizit* or staats-ausgaben* or staats-haushalt*	riform* or legislativ* or tass* or impost* or debito pubblico or fiscal* or deficit* or difesa or bilanci* or nazionale* or spese* public* or indebitamento
Constitution	constitution*	constitucion*	verfassung* or landesverfassung*	costituzion*
Regional	conseil* departementa* or conseil* regiona* or statut* d'autonomie or conference* nationale* des territoires	comunidad* autonoma* or conferencia* de presidentes or estatuto* de autonomia	landerfinanzausgleich* or landes-politik* or minister-präsidentenkonferenz*	consigli* regional* or region* a statut* or conferenza* delle region*
Other	loi* or legisla* or legife*	ley* or legisla*	gesetzgebungsverfahren* or kompetenz-streit* or schulden-brems* or gesetz* or grundgesetz* or legisla*	legg* or legisla* or legife*
Extra			sozial-polit* or aussenpolit* or wirtschafts-polit*	

Note. For an article to contain a term from this table it needs to contain the term from either of the categories; in other words, the search query will have the elements of each category separated by an “or”. Note the presence of certain extra terms for Germany. Unlike other languages present here, where these terms would involve two separate words and would therefore be captured by the other terms in this table, in the case of German there is a possibility of missing them simply because of the structure of the language.

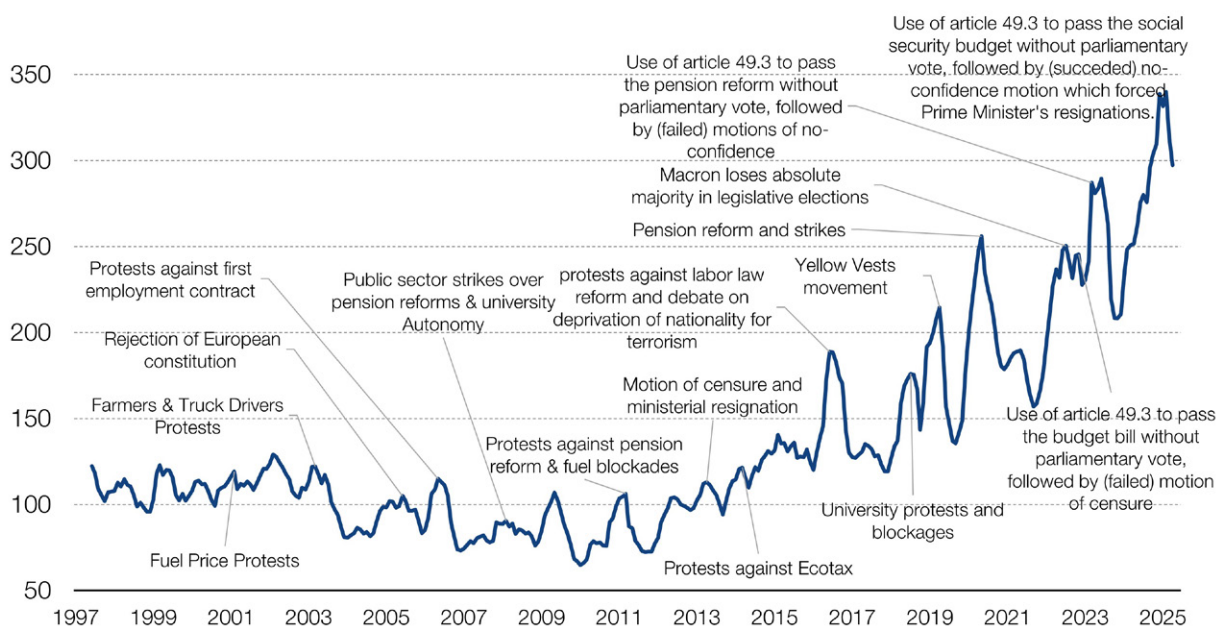
C Narratives

C.1 Narrative for France

Figure C.1: France



(a) Political Polarization



(b) Legislative Gridlock

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value. Monthly data transformed in 6-months moving average to reduce volatility.

Table C.1: Narrative for the Political Polarization Index: France

Peak	Event
08-2000	Devolution of legislative power to Corsica: disagreement between Prime Minister (Jospin) and Interior Minister (Chevènement), followed by Interior Minister's resignation; violence related to Corsican nationalist movements.
02-2003	Iraq Crisis and France's opposition to the US-led intervention in Iraq. This stance came with internal disagreements within the European Union: President Chirac coordinated with Germany and Russia to prevent NATO from planning military action in support of the invasion.
03-2010	France's regional elections turned into a quasi-referendum on Nicolas Sarkozy's presidency, and delivered a landslide victory for the Socialist-led coalitions over President Sarkozy's ruling conservatives. This mid-term electoral result exacerbated political polarization, as the opposition unified in an explicitly anti-Sarkozy front to resist Sarkozy's policies, while fractures deepened within the president's camp.
11-2012	Internal crisis within Union for a Popular Movement (UMP) party driven by the contentious election for the UMP party's presidency (between Jean-François Copé and François Fillon). This resulted in leadership disputes with intense disagreements, accusations of irregularities, and a deep division within the party.
06-2013	The killing of a young antifascist by skinheads sparked intense debates. In addition, a by-election was run (Villeneuve-sur-Lot) in which Marine Le Pen's National Front (FN) got empowered (the ruling Socialist Party was eliminated in the first round, while Marine Le Pen's National Front (FN) surged to the run-off; in the second round, many left-wing voters refused to back the liberal-conservative political (UMP) candidate, nearly handing victory to the FN).

Continued on next page

Table C.1: Narrative for the Political Polarization Index: France (Continued)

Peak	Event
06-2015	ISIS-inspired Isère terrorist attack magnified ideological divides. In addition, the escalating Greek debt crisis split the French left-of-center: while Hollande and Valls toed a firm line with Europe (insisting Athens accept budget constraints), left-wing members openly sided with Greece's defiant prime minister, Alexis Tsipras.
01-2016	Ministry of Justice (Christiane Taubira) resigned due to major political disagreement over the constitutional reform on the deprivation of nationality for terrorists.
05-2017	Presidential Election characterized by Macron-Le Pen showdown. The campaign was framed as a referendum on France's identity and direction and resulted in Macron's decisive victory.
05-2019	European Parliament elections: again, the campaign and the result were framed as a referendum on Macron's presidency vs. a nationalist challenge, consolidating a deep divide between pro- and anti-establishment camps.
01-2020	Protests against Macron's pension reform which aimed to create a universal state retirement plan, replacing the existing 42 individual retirement plans in France. It introduced a "points system" to give pensions in proportion to the contributions paid.
04-2022	The Presidential election forced a binary choice between the pro-European (Emmanuel Macron) and the nationalist challenger (Marine Le Pen). This resulted in the victory of Macron over Le Pen.
06-2024	European Parliament elections: President Macron announced the dissolution of the Parliament and new legislative elections after the substantial gains made by Marine Le Pen's party and the significant loss of seats by Macron's electoral list.

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

Table C.2: Narrative for the Legislative Gridlock Index: France

Peak	Event
09-2000	Widespread protests against fuel price hikes, which led to significant disruptions in transportation and fuel supply.
11-2002	Widespread protests and blockades by farmers protesting against the practices of large distribution companies and by truck drivers demanding better wages and working conditions, which led to significant disruptions in transportation and production chain.
06-2005	Rejection of the European Constitution and the subsequent political crisis
03-2006	Widespread protests against the first employment contract (Contrat Première Embauche).
11-2007	Widespread protests and strikes by public sector workers, including railway workers, energy sector employees, and university students.
10-2010	Widespread protests and strikes against the proposed pension reform.
03-2013	Motion of censure and resignation of Minister of the Budget Jérôme Cahuzac at the Minister of the Economy and Finance under President François Hollande.
10-2013	Suspension of the Ecotax on heavy goods vehicles and the subsequent protests and blockades by farmers and transport workers, which led to significant disruptions in transportation and supply chains.
05-2016	Protests against Minister of Labour El Khomri labor law, which aimed to reform the labor code to make it more flexible, and constitutional reform debate on deprivation of nationality for terrorism.
12-2018	Yellow Vests movement.
12-2019	Prime Minister Édouard Philippe's announcement of the pension reform, with introduction of universal points-based system, "age pivot" at 64 for full pension benefits, and minimum pension of 1000 euros. Strong opposition from unions.

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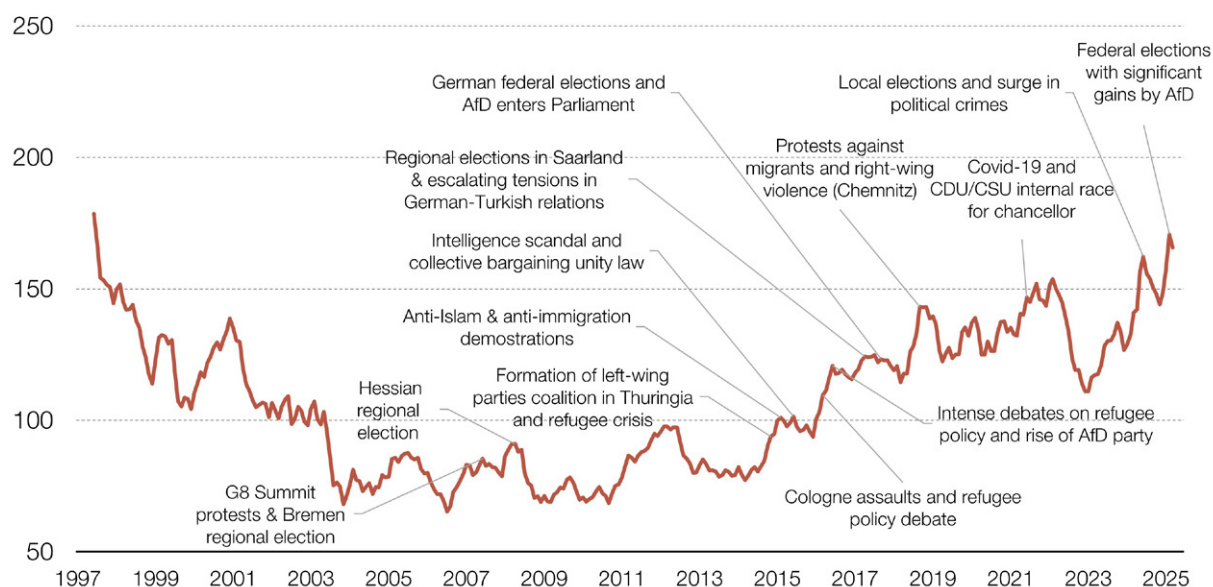
Table C.2: Narrative for the Legislative Gridlock Index: France (Continued)

Peak	Event
06-2022	Legislative elections in which the incumbent President Macron's coalition lost absolute majority, leading to political uncertainty and the need for new alliances. Discussions on forming a "government of action" led by Prime Minister Borne.
10-2022	Prime Minister Borne invoked Article 49.3 to pass the first part of the budget Bill without a parliamentary vote. Opposition filed motions of censure against the government, which failed, allowing Borne to remain in office. Also, the government responded with emergency measures to the strikes at TotalEnergies refineries.
03-2023	Prime Minister Elisabeth Borne invoked Article 49.3 to pass the pension reform without a parliamentary vote, followed by two (failed) motions of no confidence. The reform aimed to raise the retirement age from 62 to 64, sparking widespread protests and political backlash.
12-2024	Prime Minister Michel Barnier invoked Article 49.3 to push through the social security budget without a parliamentary vote. This triggered a no-confidence motion, which succeeded, leading to Barnier's removal from office.

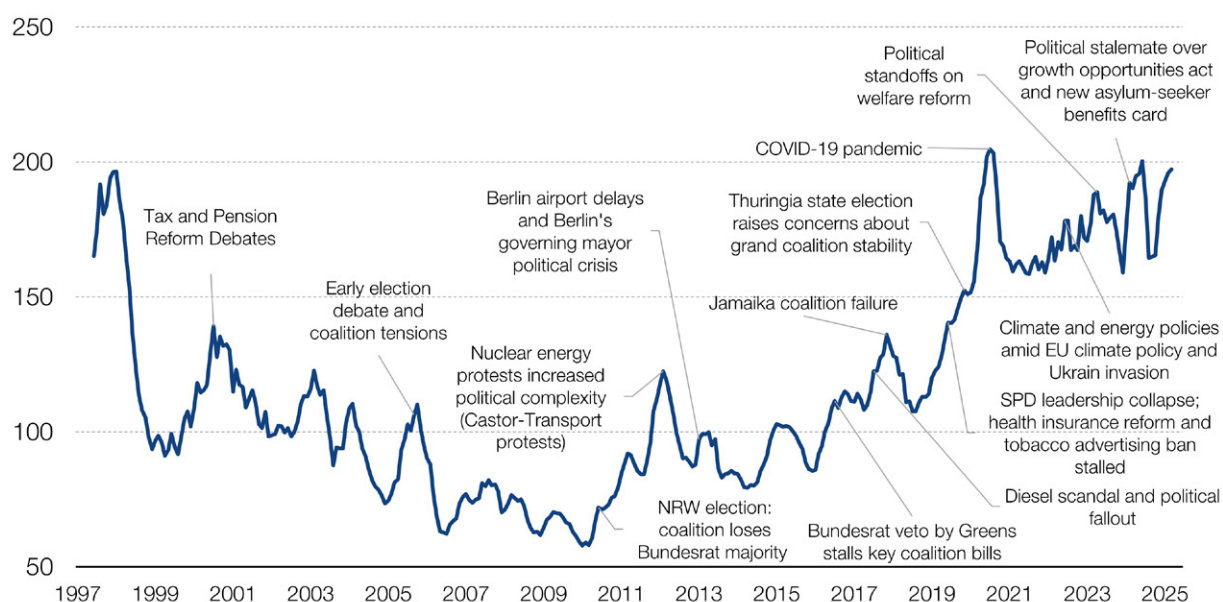
Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

C.2 Narrative for Germany

Figure C.2: Germany



(a) Political Polarization



(b) Legislative Gridlock

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value. Monthly data transformed in 6-months moving average to reduce volatility.

Table C.3: Narrative for the Political Polarization Index: Germany

Peak	Event
05-2007	G8 Summit protests (in Heiligendamm) involved widespread demonstrations and clashes (about anti-globalization sentiment, security measures and police actions, environmental concerns); Bremen regional election in May 2007.
01-2008	Hessian state election: Incumbent CDU Minister-President Roland Koch launched an aggressive campaign centered on youth crime and immigration, which caused open conflict in the ruling Grand Coalition at the national level. Koch's party plunged in the elections, losing its absolute majority. At the same time, a new parliamentary force rose that unsettled Germany's political order: Die Linke (The Left), a democratic socialist party formed from the merger of left-wing parties from East Germany and West Germany.
11-2014	In the state of Thuringia, the first "red-red-green" state-level coalition is born (Social Democratic Party, Die Linke, and Greens) with a head of government from the Left Party (Die Linke), after Thuringian state election (September 2014). Nationally, Thuringia's coalition spurred the debate about Die Linke's role. At the same time, there were anti-immigrant protests that forced politicians to take clear stances on multiculturalism and law enforcement in a context of refugee crisis and debate about asylum policies.
01-2015	Demonstrations of a new anti-Islam, anti-immigration movement called 'Pegida' (Patriotic Europeans against the Islamisation of the West) in Dresden created a stark divide among establishment parties. In addition, Alternative für Deutschland (AfD) party was involved in internal discussions over both (i) the organizational leadership structure (AfD founder Bernd Lucke, pushed to replace the AfD's three-person leadership with a single-chair model), and (ii) the party's ideology and stance toward movements like Pegida.

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Table C.3: Narrative for the Political Polarization Index: Germany (Continued)

Peak	Event
05-2015	Two major issues lead to increased political confrontations: (i) intelligence scandal (revelations emerged that Germany's foreign intelligence service had assisted the U.S. NSA in spying on European officials and firms. This led to confrontation within Chancellor Angela Merkel's governing Grand Coalition); (ii) disruptive labor strikes (train drivers' union, daycare workers) which led to debates in Parliament about limiting the power of small unions. The culmination was the passage of the Collective Bargaining Unity Law.
01-2016	Assaults in New Year's eve in Cologne served as a trigger for debates and internal clash within the governing coalition over refugee policy, which in turn contributed to the rise of Alternative für Deutschland and right-wing populism.
05-2016	Intense debates on refugee policy, public safety, security, and immigration, and rise of Alternative for Deutschland (AfD) party.
03-2017	Regional election in Saarland with CDU's victory, which served as a barometer for Merkel's party strength, escalating tensions in German-Turkish relations due to cancellations of Turkish political rallies in Germany.
09-2017	German federal elections. Chancellor Angela Merkel's center-right CDU/CSU bloc remained the largest, but both it and the center-left SPD suffered historic losses, while the far Alternative für Deutschland (AfD) became the third-strongest party in the Parliament.
09-2018	Anti-migrants unrest (Chemnitz events): tensions within the governing coalition due to declarations by the head of the domestic intelligence agency (Hans-Georg Maaßen), who publicly questioned Chancellor Merkel's stance and the challenged the authenticity of the videos recording violent facts related with these events.

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Table C.3: Narrative for the Political Polarization Index: Germany (Continued)

Peak	Event
04-2021	CDU/CSU internal race for candidacy as Chancellor (Laschet vs. Söder) for the upcoming federal elections of September of the same year split the ruling coalition leadership. In addition, there was an intense debate over National “Emergency Brake” COVID Law.
05-2024	Local elections, characterized by a surge of physical attacks and threats against politicians.
02-2025	Federal elections characterized by a wave of politically motivated violence against public officials and intense debate over the far-right AfD rise.

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

Table C.4: Narrative for the Legislative Gridlock Index: Germany

Peak	Event
07-2000	Simultaneous stalemates on two flagship reforms: (i) a sweeping tax cut plan stalled in the Bundesrat by opposition-led states, and (ii) a pension overhaul whose cross-party consensus talks collapsed. The tax bill remained effectively blocked until a last-minute deal and the pension reform was temporarily put on hold.
05-2005	2005 German federal election (originally intended for the autumn of 2006). The snap election was called after the government’s defeat in the North Rhine-Westphalia state election, which caused them to intentionally lose a motion of confidence to trigger an early federal election. The formation of a new government required careful negotiations, as no conventional arrangement could achieve a majority. Finally, a grand coalition between the CDU/CSU and SPD was formed with Angel Merkel as Chancellor.

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Table C.4: Narrative for the Legislative Gridlock Index: Germany (Continued)

Peak	Event
05-2010	North Rhine-Westphalia election: Chancellor Angela Merkel's center-right coalition lost its majority in the Bundesrat. As a consequence, Angela Merkel's center-right coalition could no longer pass key laws without opposition consent. Opposition-led states in the Bundesrat vowed to block or reshape the government's agenda, from tax cuts to nuclear energy.
11-2011	Widespread protests against the transportation of nuclear waste in "Castor" containers (Casks for Storage and Transport of Radioactive material). These protests were part of a larger, ongoing movement against nuclear power and waste storage in Germany.
01-2013	Berlin's Mayor, Klaus Wowereit, survived a vote of no confidence in the German capital's senate over repeated delays in the opening of the new airport BER Flughafen-Debakel.
06-2016	Internal disagreements within Angela Merkel's Grand Coalition slowed legislation. Two laws stalled in Bundesrat: (i) Safe Countries Asylum bill (a bill to designate Morocco, Algeria, and Tunisia as safe countries of origin for asylum purposes), and (ii) Inheritance Tax reform.
07-2017	Diesel scandal increased scrutiny of the automotive industry and fueled public distrust. This led to more stringent emission regulations and a greater focus on environmental concerns, which sometimes clashed with existing political priorities and industry interests, contributing to legislative delays.
11-2017	Failed efforts to form a "Jamaica" coalition government in Germany (consisting of the CDU/CSU, the Greens, and the Free Democratic Party (FDP)). The FDP withdrew from the talks, leaving Germany in a political crisis and raising the possibility of new elections.

Continued on next page

Table C.4: Narrative for the Legislative Gridlock Index: Germany (Continued)

Peak	Event
06-2019	SPD Chair Nahles quit and policy-making slowed down: (i) health insurance Reform (plan to merge/regionalize public insurers) was blocked (the proposal was tabled indefinitely amid partisan and state-level vetoes); (ii) tobacco advertising ban stalled despite moral suasion by the Chancellor. In addition, far-right extremism shock (Lübcke murder) monopolized debate and sharpened political tensions (particularly with the AfD).
10-2019	In Thuringia, the absence of a majority coalition led to prolonged government formation issues. Thuringia election results triggered internal CDU and SPD turmoil, with the SPD's unstable leadership and the rise of extremist influences further complicating coalition dynamics and legislative progress.
04-2020	Covid-19 outbreak: (i) covid-19 related aid and recovery measures stalled (e.g. fight over enhancing the short-time work benefits for furloughed workers); (ii) non-Covid legislative business froze, from energy to defense procurements (e.g. dispute over Tornado fighter jet replacement).
06-2022	Ruling coalition infighting: (i) EU climate policy clash about the EU proposal to end sales of combustion-engine cars by 2035; (ii) energy policy discussions (nuclear vs coal) spurred by the war in Ukraine; (iii) discussions about fiscal relief measures – Debt brake vs. inflation relief amid spiking fuel and energy costs.
11-2022	Deep rifts within the ruling coalition: (i) a Bundesrat veto by opposition-led states stalled the welfare reform until a compromise was forced; (ii) infrastructure acceleration (highways, rails, renewables) was blocked; (iii) criminal justice reform quarrel (adjusting the penal code to reduce short prison terms for unpaid fines).

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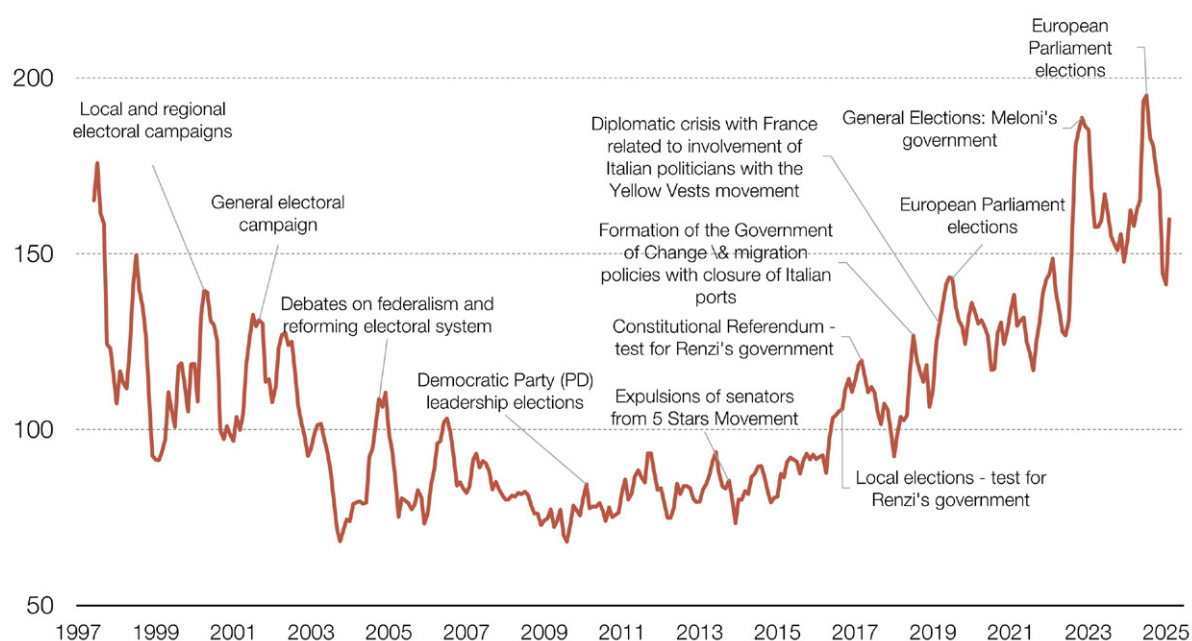
Table C.4: Narrative for the Legislative Gridlock Index: Germany (Continued)

Peak	Event
02-2024	(i) Opposition-led states vetoed the coalition's Growth Opportunities Act (a major tax relief and investment incentives package) in the Bundesrat, forcing mediation with no quick resolution; (ii) internal coalition disputes over a new asylum-seeker benefits card halted policy rollout as partners deadlocked on details.

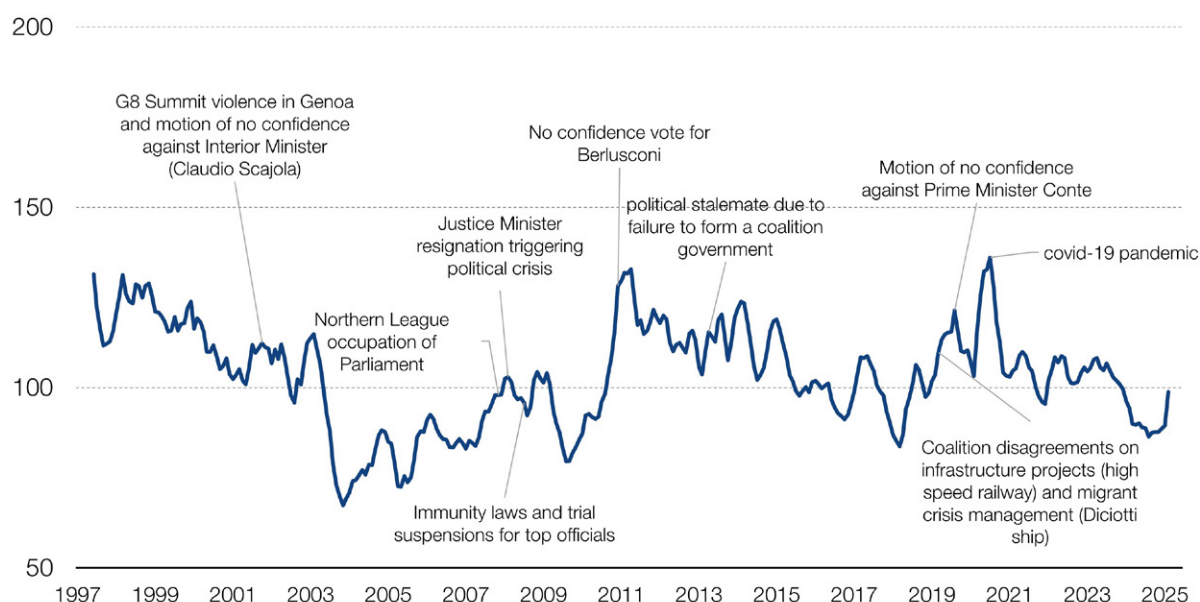
Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

C.3 Narrative for Italy

Figure C.3: Italy



(a) Political Polarization



(b) Legislative Gridlock

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value. Monthly data transformed in 6-months moving average to reduce volatility.

Table C.5: Narrative for the Political Polarization Index: Italy

Peak	Event
03-2000	Discussions about government's proposed tax cuts and a new Southern development plan. In addition, electoral campaign for upcoming local and regional elections (April 2000, most Italian regions).
05-2001	General election: Silvio Berlusconi's center-right coalition (the Casa delle Libertà) against the incumbent center-left (the Ulivo). The election resulted in a decisive center-right victory with the collapse of the Center and "Third Pole".
07-2004	Discussions about the modification of the second part of the Constitution, including federalism and electoral reform.
09-2009	Democratic Party (PD) leadership elections, culminating in the victory of Pier Luigi Bersani at the end of October 2009.
06-2013	Expulsions of senators from 5 Stars Movement (5SM) party. In late May and early June, M5S performed poorly in various local elections, especially in big cities. Some M5S members openly criticized M5S's leader Grillo for his aggressive rhetoric. As a consequence, some members were expelled from the movement and others quitted.
06-2016	Local elections, which acted as a test for Prime Minister Matteo Renzi's government: these elections were effectively perceived as a measure of public support for Renzi's leadership and his reform agenda.
11-2016	Constitutional Referendum, which acted as a test for Renzi's government stability. The proposed amendments aimed at streamlining governance, reducing costs, and enhancing efficiency. Prime Minister Matteo Renzi had promised to resign if the referendum failed.

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Table C.5: Narrative for the Political Polarization Index: Italy (Continued)

Peak	Event
06-2018	Formation of the Government of Change, a coalition between the anti-establishment Five Star Movement (M5S) and League (Lega) under Prime Minister Giuseppe Conte, after three months of hung Parliament. The political discussion was dominated by migration policies and the crisis related to the Aquarius humanitarian rescue ship: the Interior Minister Matteo Salvini (Lega) refused to allow the Aquarius to dock in Italy and disembark migrants. This incident escalated into a Europe-wide issue.
02-2019	Tensions within the coalition government and diplomatic crisis with France (involvement of Italian politicians with the Yellow Vests movement which led to the recall of the French ambassador).
05-2019	European Parliament elections: were the first major electoral test for Italy's government since the general election of 2018. The vote turned into a referendum on the two ruling parties (Five Star Movement (M5S) and League (Lega)), which ran as rivals. Official results confirmed the League's victory and the M5S' plunge. The leader of M5S Luigi Di Maio sought (and won) a confidence vote from M5S members to shore up his position. In this climate, the coalition government was plagued by almost daily quarrels and a growing lack of trust.
09-2022	The general election pitted a right-wing coalition led by Giorgia Meloni's Fratelli d'Italia (FdI) against a fragmented center-left led by Enrico Letta's Partito Democratico (PD), with the Five Star Movement (M5S) and a centrist "Third Pole" running separately. FdI became the largest party, which marked a historic political shift.

Continued on next page

Table C.5: Narrative for the Political Polarization Index: Italy (Continued)

Peak	Event
06-2024	European Parliament elections, which became a showdown between the governing right-wing bloc and the center-left opposition: Prime Minister Giorgia Meloni framed the vote as a mandate on her leadership and policies, while opposition leader Elly Schlein of the Partito Democratico (PD) positioned the PD as the only credible alternative to Meloni.

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

Table C.6: Narrative for the Legislative Gridlock Index: Italy

Peak	Event
07-2001	G8 Summit violence in Genoa and motion of no confidence against Interior Minister (Claudio Scajola).
06-2007	Northern League MPs “occupied” Parliament to demand new elections. This protest halted legislative business (stalling reforms on pensions, welfare, and budget plans).
01-2008	Minister of Justice Clemente Mastella resigned after corruption scandal. In addition, Prime Minister Romano Prodi faced a no-confidence vote in the Senate, also related to Naples waste management crisis, and consequently resigned.
07-2008	The Parliament passed laws that granted immunity and trial suspensions for high-ranking officials (Lodo Alfano and Blocca-Processi), later declared unconstitutional in October 2009.
12-2010	Prime Minister Silvio Berlusconi faced a no confidence vote, which he narrowly won.
04-2013	Failure to form a coalition government, finally resolved with the re-election of Giorgio Napolitano as President of Republic and Enrico Letta as Prime Minister.

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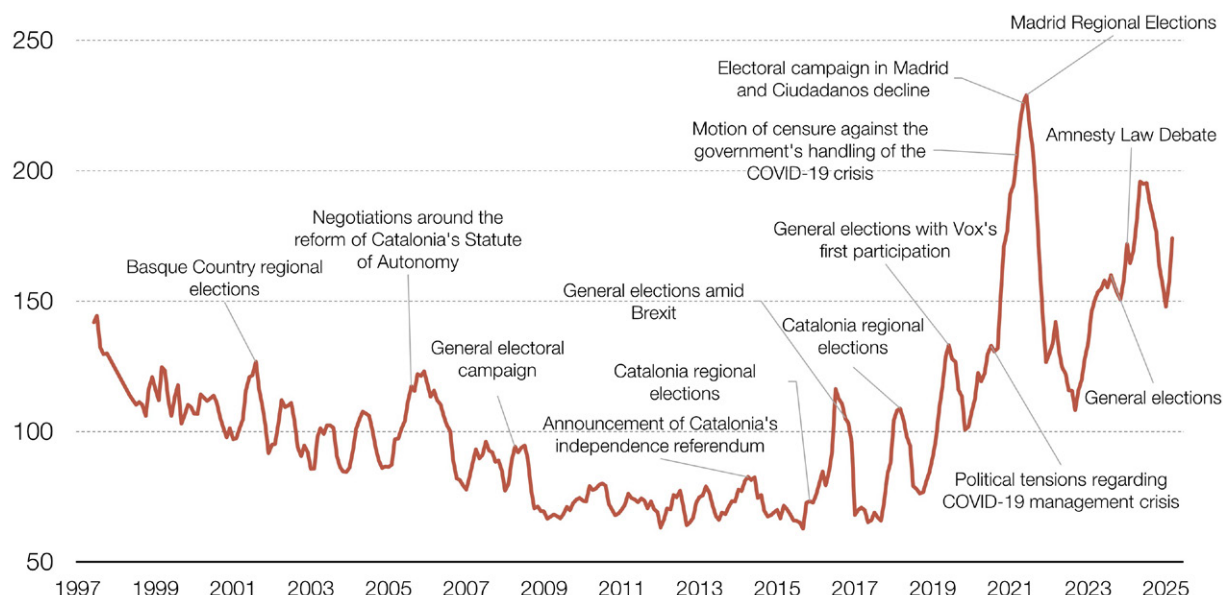
Table C.6: Narrative for the Legislative Gridlock Index: Italy (Continued)

Peak	Event
02-2019	Coalition disagreements on infrastructure projects (high speed railway). In addition, the Italian Senate's Committee on Immunities voted against authorizing a criminal investigation into Interior Minister Matteo Salvini related to the Diciotti ship crisis (In August 2018, Salvini refused to allow the disembarkation in Italy of migrants rescued by the Diciotti ship).
08-2019	Motion of no confidence against Prime Minister Conte, which offered to resign. As a consequence, it was agreed to form a new government with Conte remaining at its head, supported by M5S and the Democratic Party.
03-2020	Covid-19 pandemic: Parliament fast-tracked urgent public health measures with overwhelming support, but this came at the cost of comprehensive debate and normal checks.
02-2025	The Parliament rejected a no confidence motion filed against Tourism Minister Daniela Santanchè after she was indicted for fraude allegations.

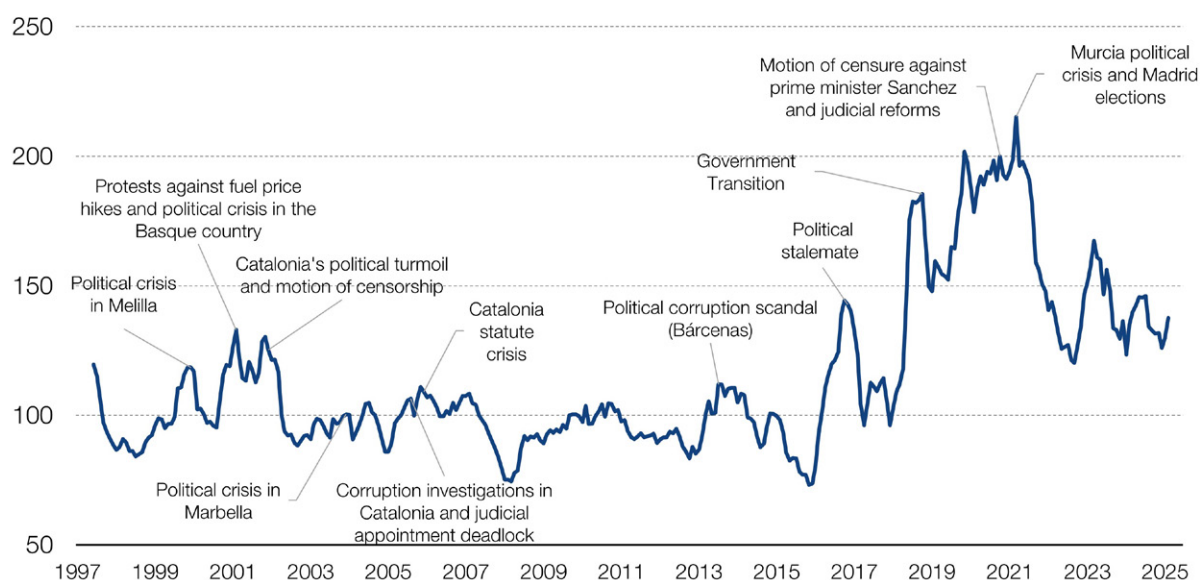
Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

C.4 Narrative for Spain

Figure C.4: Spain



(a) Political Polarization



(b) Legislative Gridlock

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value. Monthly data transformed in 6-months moving average to reduce volatility.

Table C.7: Narrative for the Political Polarization Index: Spain

Peak	Event
05-2001	Basque Country regional elections marked by extreme rhetoric and mutual accusations between regional (nationalist) and nation-wide parties.
06-2005	Statute of Autonomy of Catalonia: the majority of Catalan parties, except the People's Party (PP), agreed to include the term "nation" in the new Statute. This created significant tension and disagreement.
02-2008	General electoral campaign, with intense rivalry between Mariano Rajoy (secretary of PP) and José Luis Zapatero (secretary of Spanish Socialist Workers' Party - PSOE) amid economic crisis.
12-2013	Catalonia pro-independence parties strike a deal to hold an independence referendum in November 2014. This provokes a clash with the national government, which vows to block the illegal vote. In addition, the ruling party (PP) approves a bill to roll back abortion rights: the entire opposition (and even some PP voices) condemn the reform as regressive.
09-2015	Catalonia regional elections were framed as a plebiscite on independence: the nationalist coalition achieves absolute majority in seats but falls short of 50% of votes
06-2016	General elections with participation of new parties (Ciudadanos and Podemos) amid Brexit, which heightened political tensions.
12-2017	Catalonia regional elections: heightened political tensions across the country amid independence debate.
04-2019	General elections campaign: the old PP-PSOE political duopoly gave way to fragmented "blocks": a left-leaning bloc (PSOE with Podemos) versus a right-leaning bloc (PP with Ciudadanos, and the newcomer Vox). In addition, the Catalan pro-independence parties used the campaign to push their agenda.

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Table C.7: Narrative for the Political Polarization Index: Spain (Continued)

Peak	Event
05-2020	Political tensions regarding COVID-19 management crisis: e.g. parliamentary showdown over renewing Spain's "state of alarm" (emergency lockdown) and the controversy of a secret deal with Basque party EH Bildu, in exchange for Bildu's abstention.
10-2020	Vox party presented a motion of censure against the government's handling of the COVID-19 crisis. However, the main opposition party (PP) publicly rejected it. This led to divisions among opposition parties.
03-2021	Madrid's regional president Isabel Díaz Ayuso (PP) dissolved the regional assembly and called a snap election for 4 May. Deputy Prime Minister Pablo Iglesias (leader of Podemos party) announced he would quit the national government to run against Ayuso.
04-2021	The Madrid Regional Elections were marked by intense political polarization and aggressive rhetoric, including a disturbing wave of death threat letters containing bullets sent to prominent public figures. The discussion focused on the COVID-19 crisis management at the national and regional levels.
07-2023	The general elections were announced by surprise in May by the Prime Minister and leader of the PSOE, Pedro Sánchez, six months earlier than anticipated, in response to the results of the local and regional elections held in May, in which the main opposition party (PP) gained access to a majority of mayors' offices and regional governments (although in many cases necessarily through government pacts with the Vox party).
12-2023	The debate over Spain's proposed 'Amnesty Law' —intended to pardon individuals involved in actions linked to the Catalan independence movement— sparked intense political and public controversy, with critics arguing it undermined the rule of law and supporters framing it as a step toward reconciliation.

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window

preceding the value.

Table C.8: Narrative for the Legislative Gridlock Index: Spain

Peak	Event
08-1999	Coalition meltdown in Melilla: first Muslim mayor (Mustafá Aberchán) took power in Melilla by allying with the controversial GIL party, bypassing both national ruling party (PP).
09-2000	Nationwide protests against rising fuel prices and the political turmoil in the Basque Country.
10-2001	Motion of censorship to the President of Catalanian Parliament (Jordi Pujol).
08-2003	Motions of censure against the mayor of Marbella (Julián Muñoz) after accusations of corruption and misconduct.
03-2005	Catalan President Pasqual Maragall faced a scandal related to the public housing company Adigsa, which was under investigation for alleged corruption. Moreover, new law's supermajority requirement left 12 Supreme Court seats vacant when members of the judicial council belonging to the major parties (PP and PSOE) refused to compromise.
10-2005	Catalonia Statute Crisis unleashed debates about Spain's constitutional framework and strained the governing coalition; this was coupled with strikes in transport and fisheries, which diverted government attention and required executive actions.
07-2013	Bárcenas corruption scandal that affected the ruling party (PP). Prime Minister Rajoy was forced to address the parliament by the threat of a motion of censure.
09-2016	Electoral setbacks for the PSOE party in the Basque and Galician regional elections (September 2016), which led to Pedro Sánchez's ouster as leader after the inconclusive previous general elections (June 2016). As a consequence, incumbent Mariano Rajoy (leader of PP party) was re-elected as Prime Minister with the support of PSOE's abstention.

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Table C.8: Narrative for the Legislative Gridlock Index: Spain (Continued)

Peak	Event
06-2018	Prime Minister Mariano Rajoy (head of PP party) resigned after losing a motion of no confidence, and Pedro Sánchez (head of PSOE party) was appointed as the new Prime Minister.
10-2020	Vox's motion of censure against Prime Minister Pedro Sánchez related to the management of COVID-19 crisis.
03-2021	Murcia political crisis and Madrid elections.

Note. A peak is defined as a value that is more than two standard deviations from the mean, where both the mean and the standard deviations are computed in a two-year window preceding the value.

D Robustness

In this section we show that the main properties of our indices are robust to variations in our methodology. We focus on two methodological choices: the selection of sources, and the particular dictionary considered.

Sources We carry out two distinct exercises. First, we check whether our strategy of computing the index by summing the contributions of all the sources indiscriminately is robust to computing the index source by source, and then aggregating the resulting subindices in the manner proposed by Baker et al. (2016). A substantial difference between the methods would imply that our index is being dominated by a few sources only, which can be a problem if they experience drastic changes in coverage. However, we find that the correlation between the normalised versions are always no less 0.93, with a strong visual coincidence of peaks. We therefore conclude that there are no significant structural breaks in our index, and no single source is biasing the outcome. The second exercise that we do is checking whether the index is robust to the random removal of sources. We compare the index to the index with one source removed, and two sources removed, and compute the correlation in all cases. High correlation (which implies little change) means that the weight of the signal is not carried by a few sources only, but rather that it is present in a number of newspapers. Table D.1 shows that the index is significantly robust even to the removal of two random sources, the correlation never decreasing below 0.71. This number refers to the exercise done for Italy, where the biggest outlier is the financial periodical “Il Sole 24 Ore”. Because of its subject matter it is fundamentally different to the remainder of Italian sources, which we believe is the reason behind its somewhat distinct behaviour. Nevertheless, we underline the fact that the *average* correlations will be higher than the minimum numbers, and that we can therefore conclude that the general index behaviour is representative of the medio ecosystem as a whole.

Dictionary choice The idea behind testing the dictionary choice is to ensure that the majority of the articles selecting using that criterion treat the topic in question (type I error). Given enough resources that could be done using manual inspection of a random selection of articles; however, in our case this check is effectively achieved by checking the

Table D.1: Robustness of indices to the removal of sources

	FR	DE	IT	ES
PPI	0.94 (0.90)	0.91 (0.83)	0.88 (0.79)	0.94 (0.87)
LGI	0.99 (0.97)	0.93 (0.88)	0.80 (0.71)	0.94 (0.91)

Note: The lowest correlation between the original index and the index obtained when removing one (two) sources. Correlations are computed within the time period window when the select source (two sources) are defined.

soundness of index peaks - that is, by the narrative validation. Given that all the identified peaks correspond to relevant events, we can conclude that the noise that will inevitably get picked up by the dictionary methodology is not systematic enough to pick up other phenomena and its respective peaks.

We also test robustness of our indices to the specific words used. In principle, we cannot test the removal of crucial terms simply because they are critical to the intended meaning of the index. We therefore focus on seeing the effect of removing words with a possibly tangential meaning - the “Regional”, and “Other” categories from the Policy/politics dictionary of Table B.2. For each country we compute the correlation of both indexes to the corresponding index constructed when removing both sets of terms. The resulting indices remain almost identical, and in none of the cases does the correlation drop below 0.99. We therefore conclude that the regional and legislative terms do not distort the index.

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