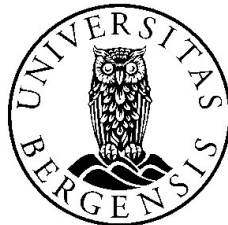


Regionalist Party Spillover from Regional into  
National and European Elections:  
The Impact of the Multilevel Electoral System on  
Vertical Bottom-up Spillover

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## **Abstract**

This thesis explores how the permissiveness of the electoral system impacts regionalist parties' vertical bottom-up electoral spillover effects from the regional electoral arena into the national and European electoral arenas in Western Europe. Over the last decades, regionalist parties have gained importance at the regional level and sought to enhance and protect regional autonomy in various regions across Europe. Additionally, this party family competes in national and European elections to voice their territorial demands. This thesis seeks to explain the extent to which the electoral system impacts regionalist parties' spillover from the regional electoral arena. Previous research has indicated that the electoral system is a contributing factor in explaining spillover effects, however, the electoral system has mostly been used as a control variable distinguishing between majoritarian, proportional, and mixed systems. The issue with such crude measurements is that one may overlook how the electoral system plays out in different regions.

The main argument of the thesis is that the permissiveness of the electoral system as measured through the number of additional votes needed to win a seat in a national or European parliament compared to a regional parliament, can explain the extent to which regionalist parties spill over their regional electoral strength into national and European elections. Multilevel mixed-effects linear regression models were applied to a new dataset of regionalist parties' electoral strength in regional, national, and European elections from 1950 until 2019. The results indicate that the number of additional votes needed to win a national or European arena impact the extent to which regionalist parties' regional electoral strength spill over into national and European elections. Whilst the effects are more robust for spillover into European elections than national elections, the results indicate that the more additional votes regionalist parties need to win a national or European seat, the less likely they are to have a strong regional vote share at the national or European level. Overall, the thesis demonstrates how the permissiveness of the electoral system matters in explaining vertical bottom-up electoral spillover.

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## Abbreviations

EP	European Parliament
ER	Regional vote share in European elections
ICC	Intra-Class Correlation
NR	Regional vote share in national elections
PR	Proportional representation
RR	Regional vote share in regional elections
RED	Regional Electoral Democracy
SMD	Single-member district
SOE	Second-order election
VIF	Variance Inflation Factor

# 1 Introduction

Scholars, voters, and the media have for a long time concentrated on the importance of national elections. However, in Europe, political authority is dispersed across several levels of government. Voters go to the ballots to elect mandates in regional, national, and European Parliament (EP) elections. The distribution of power to different levels of government in the multilevel election system involves the presence of several electoral arenas where representatives are elected. As election scholars have focused extensively on national elections they have underestimated the link between voters, policymakers, and policy outcomes in other electoral arenas (Golder et al. 2017), including the potential interaction and electoral spillover between electoral arenas over time.

The influence of the regional and European electoral arenas has been rising in most European countries since the 1950s. At the regional level, this can be observed through the devolution of political authority from the central state to subnational levels of government. The decentralisation of autonomy to regions has significantly increased, where Western-European countries have undergone substantial regional reforms (Hooghe, Marks, and Schakel 2010). The most important driver of this increased regional autonomy has been the proliferation of regionally elected assemblies in Western European countries from 1945 until the 1990s (Dandoy and Schakel 2013). Simultaneously, at the supranational level, political and economic power is shared between national and European Union institutions (Geys and Konrad 2010; Golder et al. 2017). Over time, the European Parliament has become a significant electoral institution including a growing number of member states, representing a rising number of European inhabitants.

The presence of regional, national, and European electoral arenas suggests that researchers should not study these levels in isolation, but rather focus on the interaction between the electoral levels (Golder et al. 2017). In fact, the assumption that the electoral arenas operate independently of one another, is arguably baseless. Some research has been conducted in relation to the electoral spillover between the three arenas, yet the starting point of these studies has often been the second-order election (SOE) model (Reif and Schmitt 1980). The SOE-model claims that voters and parties do not view all elections as equally important and depending on what is at stake, elections can be divided into first-order and second-order elections. Typically, national elections are perceived to be the most important, as this is the



level where areas such as foreign policy, economic policy, and welfare policies are decided upon (Zürn, Wälti, and Enderlein 2010). Meanwhile, all other elections, including regional and European elections are assumed to be second-order (Golder et al. 2017). However, research has indicated that subnational elections may in certain instances be more salient than national elections (Cutler 2008).

The knowledge generated within the election literature has therefore been mainly limited to the bottom-up electoral spillover from the national to the European level, or the top-down electoral spillover from the national to the regional arena (Bechtel 2012). Hence there is a lack of knowledge regarding the impact of the regional arena on the national and European electoral arenas. Additionally, few have studied what drives the magnitude of electoral spillover effects (Bechtel 2012; Guinjoan 2014). Factors relating to the timing of elections and subnational authority have been pointed out as important predictors of regional spillover (Schakel 2018, 2021). The election literature has pointed out that the electoral system is a contributing factor in explaining electoral contamination between electoral arenas, however this has been done through more crude measurements of the electoral system, distinguishing between proportional, majoritarian, and mixed systems (Herron and Nishikawa 2001; Prosser 2016).

I argue that the permissiveness of the electoral system can explain the extent to which regionalist parties' regional vote share spill over into their vote share at the national and European levels. The legal threshold, district magnitude, and majoritarian, proportional, and mixed systems are all elements that reflect the permissiveness of the electoral system. My argument is that these elements can be effectively captured by the number of votes needed to win a regional, national, or European seat. Specifically, the additional number of votes needed to win a seat in national and European elections compared to a regional election can explain the extent to which regionalist parties spill over from the regional arena.

Regionalist parties are useful when examining vertical bottom-up electoral spillover from the regional arena in the multilevel electoral system. These parties strive for increased decentralisation of power from the central state to a territorial area within a country and seek to mainly appeal to the voters based within that region. Despite the regional arena being their main base of electoral competition, these parties also compete in national and European elections to promote their regionalist agenda. The benefit of using regionalist parties as a case

is that they use the vertical bottom-up spillover mechanism within the European multilevel election system, unlike other state-wide parties. Regionalist parties concentrate their electoral competition in a region which allows us to trace the electoral spillover in a given region in regional elections, into the same region in national and European elections, hence controlling for horizontal spillover from one region into another region.

The purpose of this thesis is to explore how the multilevel electoral system impacts the extent to which regionalist parties' electoral strength in the regional arena spillover into their regional electoral strength in the national and European electoral arenas. This leads to the following research question:

*To what extent does the vote threshold ratio impact regionalist parties' abilities to spill over from regional elections into national and European elections?*

To analyse the vertical bottom-up electoral spillover effects, I developed a regionalist party dataset consisting of eleven countries in Western Europe which held regional, national and European Parliament elections from 1945 until 2019. The data covers the electoral strength of 211 regionalist parties in 58 regions in Belgium, Finland, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom. To study the regional spillover into both national and European elections, two different datasets were constructed. For the dataset analysing spillover from the regional to the national level, national elections are compared previous regional and European elections (NR-RR-ER). For the dataset measuring spillover to the European level, European elections is compared previous regional and national elections (ER-RR-NR). Essentially, I will compare regional vote shares between regional, national, and European elections, where all vote shares are disaggregated to the region and the number of voters remains largely the same despite the type of election. The dataset advances existing regionalist party datasets by collecting detailed electoral data from European, national, and regional elections, disaggregated to the regional level. The dataset is valuable for future studies of regionalist parties' electoral strength in the multilevel election system and for scholarly attempts to examine the role of the electoral system on electoral spillover.

The research question is investigated through multilevel mixed-effects linear regression models to account for the clustering of regionalist parties' vote shares in elections within

regions over time. The analysis conducted is a region-level analysis, where regionalist parties' vote shares are aggregated at each election year at the region level, to examine how the vote threshold ratio impacts regionalist parties as a party family.

The results reveal that the permissiveness of the electoral system, namely the number of additional votes needed to win a national or European seat compared to a regional seat, is an obstacle when regionalist parties seek to spill over their regional electoral strength into national and European elections. The more additional votes regionalist parties need to obtain a seat in the European Parliament compared to a regional parliament, the less probable they are to have a strong regional vote share at the European level. When it comes to electoral spillover into national elections, the findings are somewhat less robust. The results indicate that the higher number of additional votes needed to obtain a national seat, the less likely regionalist parties are to spill over their regional electoral strength to the national level.

This thesis is one of the first pieces of research to investigate the impact of the multilevel electoral system on electoral spillover effects and is therefore an important contribution to the election literature. Moreover, the thesis applies the vote threshold concept in a European multilevel electoral setting, which has not been done before, consequently showing that the permissiveness of the electoral system matters in explaining vertical bottom-up spillover from the regional level and that elections ought not to be studied in isolation.

The thesis is structured as follows. Chapter 2 explains the theoretical predictions regarding electoral spillover in the European multilevel election system and the impact of the electoral system on the vertical bottom-up electoral spillover. In Chapter 3, the regionalist party dataset is presented, along with the variables used to examine the research question. The 4<sup>th</sup> chapter discusses the theoretical and statistical reasons for employing multilevel mixed-effects linear regression method in the analysis. Chapter 5 is devoted to the analysis of the vertical bottom-up spillover effects. In chapter 6, I discuss the findings and results of the analysis in relation to the research question and the theoretical expectations. Chapter 7 concludes with the results and the further implications of the research.

## **2 Background and theoretical framework**

In this chapter, I aim to show how there has been a lack of scholarly work concerning bottom-up spillover in the multilevel electoral system, as well as explain which factors may impact spillover effects. Given the limited research on the factors impacting electoral spillover, it is necessary to develop new hypotheses regarding the impact of the permissiveness of the electoral system on regionalist parties' spillover from the regional to the national and European electoral arenas. Before elaborating on the theoretical argument in detail, I give an overview of the literature regarding the European multilevel election system, spillover effects, and regionalist parties' electoral success. I argue that the easiness to win a seat, specifically the number of additional seats needed to win a national or European seat compared to a regional seat, is important in explaining regionalist party spillover into national and European elections.

### **2.1 Regional and European electoral democracy**

In Europe, the progress toward a multilevel electoral democracy and the growth of regional and European elections has piqued the interest of election scholars. An increasingly larger body of evidence has made clear how regions have become a highly significant part of social and political life in Europe since the 1980s. Regions in Europe have experienced a rise over the last few decades (Keating 2013; Lidström, Loughlin, and Hendriks 2010). The Regional Authority index provides a highly convincing account and reveals that subnational authority has increased in 13 out of 19 EU member states which hold regional elections and only decreased in two from 1970 until 2018 (Hooghe et al. 2016). In addition, both the number of EU member states and the number of eligible voters in European elections have grown significantly since 1979, where over 400 million European citizens were eligible to vote in the 2019 European Parliament elections (Treib 2021).

The increase in regional authority and the expansion of multilevel governance have significant implications for European citizens but also political parties. Multilevel governance allows for a more efficient allocation of power to the most suitable level of government, whilst bringing the government closer to the citizens (León, Jurado, and Garmendia Madariaga 2018, 660). Holding elections at regional, national, and European levels allows voters to express their policy preferences at varying levels of government. Powerful regional governments and strong regional interests have led to a multilevel system in which important

matters of policy are at stake for voters. Additionally, Europe has observed a resurgence of separatist and regionalist parties demanding regional independence, which ultimately led to two crucial independence referendums in Scotland in 2014 and Catalonia in 2017 (Cetrà and Harvey 2019). These developments clearly show how issues at the regional level have become increasingly important for a significant group of voters wanting increased regional autonomy.

Multilevel electoral democracy has been on the rise, yet scholarly attention on how the regional, national, and European arenas interact has so far been scarce. Researchers have often used the second-order election model as a leading approach in explaining electoral outcomes (Hix and Marsh 2007; Reif and Schmitt 1980). The foundation of the SOE-model implies that European and regional voters are mainly influenced by factors stemming from the national electoral arena when casting their votes. Voters and parties tend to consider national elections to be first-order, whereas European elections and regional elections are often deemed to be second-order (Golder et al. 2017, 3). Thus, voters use these elections as means to indicate their discontent with parties in the national government, by voting for opposition parties as well as small or new parties (Reif and Schmitt 1980, 10). Such voting behaviour occurs because European and regional elections are viewed as less important by voters, parties, and the media, given that national governments decide upon important matters such as the welfare state, taxes, the economy as well as foreign policies (Geys and Konrad 2010). As a result, turnout is lower in less significant elections, parties in national governments tend to be punished and smaller parties perform better (Golder et al. 2017, 3).

The SOE-model can only explain some of the electoral dynamics occurring in multilevel election systems. Despite providing some valuable insights, the SOE-model integrates the assumption that both regional and European elections are subordinate to national politics. Within the research field of elections, there has been an eminence of national politics, which has led to a national outlook on all types of elections (Liñeira 2011, 283). Jeffery and Wincott (2010) have criticized this as ‘methodological nationalism’, which implies that the nation-state is the only political scale of real importance (Keating 2008, 65). Thus, the nation-state tends to be considered the main unit of analysis; however, this assumption may lead researchers to perceive every political phenomenon as subordinate to national politics. The innate methodological nationalism in the second-order election model may lead researchers to overlook other interactions between the regional, national, and European electoral arenas. The

next section defines the concept of spillover between the electoral arenas and gives examples of other significant kinds of spillover than previously highlighted by the SOE-model.

## **2.2 Vertical electoral spillover effects**

A multilevel election perspective implies that researchers need to acknowledge that election outcomes at the regional level cannot be fully understood without considering the possibility of vertical and horizontal electoral spillover from other electoral arenas. Within the election literature, spillover effects are also commonly referred to as ‘contamination effects’ or ‘interaction effects’ (Guinjoan 2014). Researchers have been aware that these effects were at play, but they have defined the concept somewhat differently over the last decades. Ferrara, Herron, and Nishikawa (2005, 8-9) defined the phenomenon as the contamination when a particular election outcome produced in one tier is affected by the institutional rules employed in the other tiers, in particular in mixed electoral systems. Later Gschwend (2008, 230) defined spillover as the interaction effect when one electoral arena contaminates the results in a different electoral arena, which occurs if the null hypothesis of independence between the electoral arenas cannot be maintained. Guinjoan (2014, 20-21) criticises the former two definitions of failing to explain what contamination effects are. Therefore, he proposes a new definition in which he understands contaminations as “*the situation in which the viability of a political party in a given arena shapes party elites’ entry decisions in another arena where non-viable*” (2014, 21). This signifies that party elites alter their strategic behaviour in one electoral arena, because of its overlap with another electoral level (Guinjoan 2014, 22). Spillover has been understood and conceptualised very differently by election scholars, which also indicates that this is a phenomenon which has not been studied frequently, especially not in the multilevel electoral system in Europe.

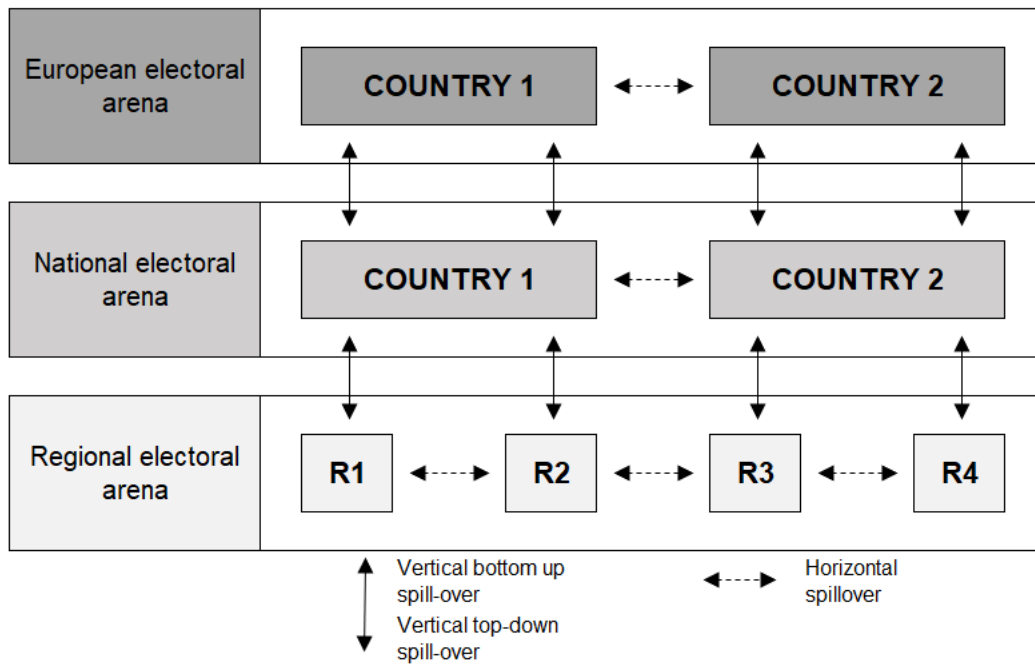
This thesis follows the definition where electoral vertical spillover is defined as the effect where “*developments in one electoral arena at a higher/lower territorial arena impact electoral outcomes in another electoral arena at a lower/higher territorial level*” (Schakel and Romanova 2021, 305). This definition is beneficial to my research objectives as it implies that vote shares in one electoral arena diffuse over into other electoral arenas because electoral arenas are not independent of each other. The purpose of the thesis is to investigate how the electoral system impacts electoral spillover from the regional to the national and European arenas. This is done by examining how regionalist parties’ regional vote share strength diffuses over into their subsequent regional vote share strength in national and

European elections. Therefore, this definition proves the most beneficial for my research objectives, as the focus lies on election results rather than the strategic behaviour of political parties.

Within vertical spillover effects, one can differentiate between two types of spillover, top-down, and bottom-up. Top-down spillover effects imply that events or electoral outcomes in the national electoral arena affect electoral outcomes and preferences in a lower territorial arena, for instance, the regional arena (Bechtel 2012, 172). Bottom-up spillover happens when electoral results at a subnational level affect electoral outcomes at a higher level, for instance from the national to the European level or from the regional to the national level (Bechtel 2012, 172). It is necessary to mention that bottom-up vertical spillover can only be said to be existent when there was a regional electoral arena present within a country in the first place from which parties could spill over from.

Further, it is useful to distinguish vertical spillover from horizontal spillover effects. Horizontal spillover effects imply developments in the electoral results in one electoral arena are due to the changes in another electoral arena, within the same tier of governance (Bechtel 2012, 172; Schakel and Romanova 2021, 301). For instance, a state-wide party's electoral result in one regional election can diffuse over into their electoral result in a different regional election. Similarly, there might be horizontal interactions between countries in national elections and even European elections.

This European multilevel election system is portrayed in figure 2.1 and demonstrates how vertical and horizontal interactions occur between regions and countries concurrently. Within this system, there might be vertical bottom-up or top-down interactions between the three electoral arenas. Simultaneously, horizontal interactions might take place either between regions in a regional election, but also between different countries in national and European elections. This reveals how electoral arenas are not independent of each other and might influence electoral results both between countries but also between regions within countries.



**Figure 2.1** Illustration of the multilevel electoral system and potential spillover effects

Overall, we have scarce knowledge regarding how vertical interaction effects occur and which factors drive the magnitude of the contaminations between the three electoral arenas. Of the knowledge generated in the literature, top-down vertical spillover is far more researched compared to bottom-up vertical spillover (Schakel and Romanova 2021, 300). The SOE-model explains a vertical top-down interaction, where developments in the national arena affect regional election outcomes. Certain studies have shown a top-down interaction effect where an electoral change in Swiss national elections tends to lead to a similar change in subsequent cantonal elections (Bochsler 2019, 401). Vertical spillover can also happen bottom-up where developments at the regional electoral level can initiate changes in the national and European electoral arenas. The SOE-model does emphasise bottom-up spillover, but only from the national electoral arena to the European. As acknowledged by Bechtel (2012, 3), “*We know virtually nothing about whether and how subnational elections influence vote intentions at the national-level*”.

Fortunately, there are studies which go beyond the second-order election model and examine spillover from the regional electoral arena (Chan 2022; Dinas and Foos 2017). Importantly, research has demonstrated that there is significant electoral spillover from the regional to the European arena (Schakel 2018, 2021; Dinas and Foos 2017). Schakel (2021, 16) has found that factors arising from the regional arena, namely regional authority, governmental status at



the regional level as well as electoral timing impacts European election outcomes. Parties seem to increase their vote share in EP elections when the party is in opposition in regional and national parliaments or when the party is in government at the regional level, but in opposition at the national. The vote share strength in European elections also seems to increase as the regional authority in the region increases and also when a regional election has taken place prior to an EP election (Schakel 2021, 2).

With regards to regional electoral spillover into national elections, research by Bochsler (2019) shows that there are bottom-up interactions at play in Switzerland, where electoral swings in cantonal elections influenced national elections at a later point, providing evidence that the regional electoral arena can have an impact on election outcomes at the national level. Dinas and Foos (2017) have shown in Germany that the vote shares of small parties increase in national elections if the party manages to cross the regional electoral threshold. Likewise, research by Chan (2022, 1-2) has revealed that for radical right parties in Germany, crossing the regional electoral threshold substantially improves these parties' electoral performance in the subsequent national election. In particular passing the regional threshold can boost parties' vote share strength in the upcoming national elections. Further, these pieces of research also give evidence that the electoral system can play an essential role in explaining bottom-up vertical electoral spillover.

The importance of the regional arena on contamination effects is also highlighted by Massetti and Schakel (2017, 433) who emphasise a 'springboard effect' in which election outcomes at the regional level can result in electoral success at the national level. They reveal how regionalist parties use the regional electoral arena as a 'springboard' into the national electoral arena. This means that parties' vote share in a regional election may spill over into successive national elections and having a strong election result in one arena has a positive effect on the electoral outcome in the other arena (Brancati 2008, 139). Research by Lucardi (2016) reveals that even in autocracies with multilevel electoral systems, political parties use subnational levels of government to gain resources, visibility and governmental experience and thereupon use the subnational arena as a "springboard" to increase their electoral strength at higher levels of government. Amat, Jurado, and León (2020, 275) have found that in Spain and Italy, the contamination of regional elections on national elections is lower in regions where decentralisation is more extensive and where state-wide parties encounter strong electoral competition from regionalist parties.

The fact that elections do not take place in isolation and therefore may result in contamination effects between different electoral arenas has also been noticed by other researchers such as Golder et al. (2017) and Guinjoan (2014). Golder points out that only if electoral arenas are independent of each other, a researcher can securely ignore the impact of multiple other arenas (Golder et al. 2017, 3). The claim of independence between the electoral arenas is not feasible, as political parties compete in complex political systems where the electoral arenas and districts<sup>1</sup> in many instances tend to overlap (Guinjoan 2014, 2). The evidence that regional politics flow into and contaminate the European arena (Schakel 2021), may imply that regional elections are perceived to be more important than European elections for certain types of voters. Thus, voters may use signals from the regional electoral arena alone or in addition to the national arena, as a basis for their vote choice in EP elections.

Ultimately, there are interesting results regarding electoral spillover from the regional level. Yet, there is a clear deficiency in the literature because it is very likely that electoral spillover happens between electoral arenas, but few studies have investigated the vertical bottom-up spillover effects from the regional electoral arena. Therefore, this thesis seeks to contribute to the literature by examining how regionalist parties use the vertical bottom-up electoral spillover effects and the following section explains why regionalist parties are particularly useful cases.

### **2.2.1 Regionalist parties and multilevel elections**

To understand the extent to which vertical bottom-up spillover from the regional level takes place, it is necessary to explain how regionalist parties can help illuminate the vertical whilst controlling for the horizontal spillover. European integration has enabled a multilevel political system in which parties can advance their territorial claims and represent their political demands at various levels of government (De Winter, Gómez-Reino, and Lynch 2018, 139). Regionalist parties are useful to study vertical bottom-up spillover for two reasons. Firstly, regionalist parties' voter base is located in one region. Second, regionalist parties prioritise only competing in elections in one region. Because of the focus on regionalist parties, the horizontal spillover is minimised with enables one to highlight the vertical spillover.

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<sup>1</sup> District and constituency are used interchangeably throughout the thesis.

Because regionalist party competition is restricted to one or a few institutional regions within a country, they help us to focus on vertical spillover because it may be assumed that these parties are the least affected by horizontal spillover effects, as they rarely field lists outside of their region. Their support and votes can be found in one or a few regions (Brancati 2005, 143) and in instances when they put forwards lists in other regions it is evident that they gain only a few additional votes. For example, in Spain, Extremadura Unida (EXU) concentrates its electoral competition in the region of Extremadura; however, the party did obtain 0.12 of the regional votes in Madrid in the 1993 general election. This reveals that on some occasions, regionalist parties do field lists in other regions and do gain some votes, despite the vote shares being very low. With regionalist parties, one can control for the potential horizontal effects by only focusing on the party's main region for electoral competition. The Green Party in Germany is an example where vertical and horizontal interactions are more intertwined. This party first achieved electoral success and representation in some Länder at the regional level, which later led to their electoral achievements and a role in the federal government at the state-wide level (Swenden and Maddens 2009, 8). With non-regionalist parties, it is more challenging to disentangle the horizontal from the vertical spillover effects.

The reason to focus on vertical bottom-up electoral spillover effects, as opposed to top-down vertical spillover or horizontal spillover effects is because regionalist parties use the vertical bottom-up spillover mechanism, unlike other types of political parties. Regionalist parties begin at the regional level and seek to enhance the territorial autonomy of a given territorial area. However, they are also interested in voicing their demands at both the national and supranational level, which makes them distinctive compared to other types of political parties.

Along with an increase in subnational autonomy, we have observed a steady increase of regionalist parties throughout Western Europe. In over 50 percent of the regions in the EU, regionalist parties are represented in regional parliaments and have been successful in entering regional governments (De Winter, Gómez-Reino, and Lynch 2018, 140). Regionalist parties are crucial because they challenge the political system structure in terms of organization as well as the distribution of territorial power between the centre and periphery (De Winter, Gómez-Reino, and Lynch 2018, 140). These actors aim to attain, develop or defend the territorial self-government of their territory (De Winter 1998, 208). Over the last decades, regionalist parties have taken the role of leading players in numerous regional political systems throughout Europe (Tronconi 2015). In many decentralised countries, these

parties have led regional governments, for example the Scottish National Party (SNP) in Scotland, the Christlich-Soziale Union (CSU) in Bayern and the Convergència i Unió (CiU) in Catalonia.

As rightfully acknowledged by Jeffery (2009, 639), regionalist parties are not niche players anymore, but rather part of mainstream party politics in Western Europe. Nonetheless, their importance need further studying within the scholarship on elections and parties. The earliest research on the strength of regionalist parties was put forward by Lipset and Rokkan (1967) and Rokkan and Urwin (1983), and they used an historical-sociological approach, which stated that unequal economic development, as well as certain cultural identity factors such as religion and language led certain regions to diverge from the rest of the nation-state. Regionalist parties are assumed to originate from regionally based social cleavages, where specific regions within a state may have distinctive interests and preferences that are not adequately addressed by existing political parties (Brancati 2008, 135). The defining characteristic of this party family is the centre-periphery cleavage, typified by territorial claims and demands for regional autonomy (De Winter, Gómez-Reino, and Lynch 2018, 141).

Regionalist parties are defined as “*self-contained political organizations that focus on the protection/enhancement of regional identities and interests, challenging the central state with their requests for some kind of territorial self-government*” (Heinisch, Massetti, and Mazzoleni 2018, 927). These actors are only organizationally present in and/or field candidates within a specific sub territory or region within a state (Massetti and Schakel 2015, 868). Due to these parties’ precise purpose of defending the interests and identities of ‘their’ region, it often limits their political and electoral activity to a given territory, rather than the country as a whole. The core aim of regionalist parties is therefore to enhance, achieve or protect “*some kind of [territorial] self-government*” for their territory (De Winter 1998, 204). This territorial reform, involves a reallocation of political authority between the regional levels of government and the nation-state, in favour of the regional level (Elias and Tronconi 2011, 507-508).

Interestingly, research shows that regionalist parties often seek to compete in national and European elections, despite their regional focal point (De Winter, Gómez-Reino, and Lynch 2018, 140). Political parties in general compete in elections for three reasons, to seek votes, seek office or to seek policy (Strøm 1990, 566). Regionalist parties compete in regional

elections, as this is the arena where they can attempt to influence politics, gain governmental status and work to enhance the regional interests and identities and the amount of autonomy of a given territorial area. In regions with distinctive territorial identities, research shows that voters use regional elections to convey a kind of political community, either defined instrumentally as interest, or culturally as identity (Jeffery 2010, 141).

The regional level is inherently the most crucial electoral level for this party family, however office and representation at the national level is not irrelevant, as this arena is where decisions concerning the territorial organization of political authority is decided upon (Elias and Tronconi 2011, 506). Regionalist parties compete in national elections for various reasons. One motivation is to influence policies in the regionalist parties' direction. The government at the national level decides upon how much autonomy should be devolved to subnational levels of government. Regionalist parties' claim that national governments are not addressing the interests of the region sufficiently and that sub-national governments can address these issues more sufficiently (Brancati 2005, 145). Therefore, the party's purpose of taking part in national elections is to achieve a higher vote share so that they can gain more power in the national legislature to fight for the devolution of autonomy to the subnational level.

Another reason to compete in national elections is to get resources and funding. Parties may seek increased resources from the central government to improve the economic performance of the region (Hepburn 2009, 484). These actors are also present in national elections to work for, shape the direction of and promote regional reforms. Moreover, regionalist parties often tend to pursue other policy objectives alongside their territorial goal (Elias and Tronconi 2011, 506-508). The territorial goals of regionalist parties tend to be influenced by their socio-economic programmes, in which they shape their idea for the type of society they would like to create for their territorial area (Hepburn 2009, 479). According to Lublin (2012, 1080), decentralisation encourages regionalist parties because the costs of participating in the national electoral arena are reduced, as these parties already have a position in the party apparatus. The competition of regionalist parties in national elections, may push state-wide parties to co-opt their agenda and grant more powers to regions (Lublin 2012, 1080).

Regional actors' participation and involvement at the European level and in EP elections revolves around the support of various territorial projects within Europe. Regionalist parties may have constitutional goals, which can be linked to independence, devolution, and

federalism (Hepburn 2008, 552). The reason for participating in European elections may be that regionalist parties see Europe as offering new opportunities for achieving greater territorial autonomy (Elias 2008b, 484). Secondly, there are socio-economic goals, which regionalist parties may want to achieve (Hepburn 2008, 552). By participating at the European arena, regional actors can secure financial aid and access institutional arenas beyond the state (Elias 2008b, 484). Prior to the changes in the EU structural funds in the 1980s, regionalist parties only perceived the EU as a bureaucratic and distant structure that provided a source of external funding, rather than an opportunity structure in which they could advance their political demands (Hepburn 2008, 544). Through the Maastricht Treaty, the Committee of the Regions were established, which gave parties access to regional representatives in the Council of Ministers (Elias 2008a). By attempting to gain representation at the European level, regionalist parties had a platform where they could represent and campaign for regionalist issues. Regionalist parties may also participate at the EU level for protectionist causes, meaning that they want to push back European competences (Hepburn 2008, 552). European directives have an impact on an increasing number of regional competences, including social rights, environment, and economic development. Regionalist parties are therefore obligated to respond with policy positions on these developments at the regional arena (Hepburn 2008, 539). Given that regionalist parties want to ensure the self-government of their territory, they have emphasised the importance of preserving regional industries and exports in the face of competition, to make sure that the EU does not tap into the region's competencies (Hepburn 2008, 550-551).

Due to regionalist parties' participation and engagement at the national and European level, they may help shed light on the vertical bottom-up interactions from the regional level. All things considered, there is a gap in the literature where there is insufficient knowledge about what in fact drives or impacts the magnitude and direction of the vertical spillover effects. The purpose of the next section is therefore to examine how elements of the multilevel electoral system may play a role in influencing vertical bottom-up interactions.

### **2.3 The impact of the multilevel electoral system on bottom-up spillover**

The multilevel electoral system perspective highlights the dependency of electoral outcomes in one electoral arena on the characteristics of the electoral system another electoral arena. Electoral systems are defined as *“the set of rules for taking votes in any given election and*

*determining the seats in the representative assembly or other elected institutions*” (Herron, Pekkanen, and Shugart 2018, 2). A multilevel perspective implies that the interaction of electoral systems at various governmental tiers must be considered to understand the effects of electoral systems as a whole. According to Schakel and Romanova (2020, 324), the multilevel electoral system is defined as “*the set of rules employed in the regions and at the national level to conduct elections and to translate the number of votes into a number of seats in an assembly or parliament*”. As shown through these definitions there are various elements of the electoral system which may have an influence on election outcomes in different elections.

The reason why its relevant to discuss different electoral system’s impact on election outcomes and spillover effects is because the ideas developed by Herron and Nishikawa (2001) on contamination effects between two tiers in a mixed system can also be applied when discussing the effects of the electoral system on electoral spillover effects in the multilevel electoral system. Research has indicated that electoral systems have a major impact on elections outcomes (Riker 1982). Duverger’s well-known law posits that proportional electoral systems helps small or single-issue parties emerge, which tends to lead to a multi-party system. Whereas majoritarian systems tend to facilitate the dominance the two-party system (Duverger 1951). More specifically, majoritarian electoral systems may discourage voters from supporting small or new parties, because the electoral system discriminates against parties that do not tend to achieve high vote shares in elections (Lublin 2014, 9). Proportional systems on the other hand lowers the barriers to entry for small parties, hence increasing the chances of small parties winning a mandate. Small parties are also more likely to succeed under proportional systems, as average constituency magnitude increases because the vote share required to win a mandate decline. Similarly, in countries with lower legal thresholds, small parties increase their chances in participating in the distribution of mandates (Lublin 2014, 9). However as importantly pointed out by Lijphart (1994) to comprehend the effects of the various electoral systems, researchers are required to go beyond the distinction between proportional representation (PR) and majoritarian systems.

It is widely known that electoral rules matter because of their mechanical and psychological effects on election outcomes (Duverger 1951; Golder and Ferland 2018, 9). Mechanical effects occurs after a vote is cast and explains how votes are transformed into seats. Psychological effects take place before or simultaneously as a vote is cast and impacts which

party or candidate a voter will support, based on their view of the chance that their vote will count (Blais et al. 2011; Cox 1997). In majoritarian systems, there is one winning member per district, thus limiting mechanically the number of parties able to win seats in the parliament. Proportional representation, however, tends to produce more proportional results and thus more parties can compete for several seats within a district (Gallagher and Mitchell 2005). Concerning the psychological effects, voters are often reluctant to vote for parties with little to no chance of obtaining a seat. Instead, voters may cast a sincere or a strategic vote. Sincere voting refers to a vote for their most preferred party. Strategic voting implies that voters form expectations about the outcome of an election and may deviate from their most preferred party in order to risk casting a wasted vote (Golder et al. 2017). In more proportional systems, voters preferring small parties can support those parties, because they know that small parties are able to win seats and gain representation. Under national and European electoral arrangements which give small parties low probabilities of obtaining seats, voters may refrain from voting for these parties in fear of casting a wasted vote (Benoit 2006).

Electoral rules provide motivations for parties and voters to participate in strategic behaviour, which includes strategic voting and strategic entry (Golder et al. 2017, 5). The mechanical effects of the electoral system creates incentives for voters to engage in strategic voting and for strategic entry or withdrawal on the part of party elites (Clark and Golder 2006, 683). The strategic entry implies that parties with no change of gaining representation are encouraged to withdraw from participating. If the parties refrain from withdrawing, voters are then incentivised to vote strategically in favour of more viable and preferred parties (Clark and Golder 2006, 694). The majority of voters are motivated by a desire to influence policy, and therefore elect the party or candidate making the proposals they most prefer to end up being governed in the manner they find most suitable (Crisp, Potter, and Lee 2012, 573).

According to Lago and Montero (2009, 182), the nature and the reductive effect of electoral coordination in multilevel electoral systems does not differ to a large extent from the strategic entry assumed by Duverger (1951). Decisions by subnational parties to either coordinate at their district level with state-wide parties in national elections or run on their own relies on three incentives. These include the electoral rules which govern elections in national and regional parliaments, the strength of the cleavage that impacts the electoral competition among regional and state-wide parties, as well as the expectations that they all have about the electoral fortunes of their competitors (Lago and Montero 2009, 182).



Concerning the impact of electoral systems of spillover effects, Herron and Nishikawa (2001, 65) give evidence of contamination effects between the two tiers in mixed electoral systems. The proposal is that contamination is powerful enough to make voters and parties behave in one tier or arena based on their considerations and expected results in another electoral arena or tier (Gómez Díaz 2020, 504). Ferrara, Herron, and Nishikawa (2005, 13) found that by nominating a candidate in a single-member district (SMD), a party can attract greater attention to its policy aims and hence receive a substantial vote share increase in the proportional component of the election by drawing the support of voters who would have otherwise voted for other lists. In turn, the boost that parties may expect to receive by running their own SMD candidates provides them with an incentive to participate in majoritarian elections regardless of their chances of winning a district. Most importantly, multiparty competition associated with PR typically spill over into the majoritarian part of the election (Ferrara, Herron, and Nishikawa 2005, 13).

By fielding a candidate in the SMD tier, a small party may heighten voter awareness and possibly gain more votes and seats for the PR part of the election (Lago and Montero 2009, 179). As such, they can field candidates in single-member districts regardless of their electoral strength. This decision can create a centrifugal tendency. Therefore, one should not expect that the number of parties in SMD elections should be closer to two parties in mixed systems (Herron and Nishikawa 2001, 69). Within a similar line of argumentation, Lago and Montero (2009, 177-178) contend that in multilevel systems there is contamination effects between national and regional electoral arenas, that generate, like most mixed-member electoral system, a centrifugal force which pulls up the number of electoral parties in national elections.

Parties' vote share changes may differ according to the varying proportionality of regional, national, and European electoral systems. In instances where there is a proportional system at the national level and a majoritarian system in regional elections, one may expect that some national parties would gain vote share in the regional elections (Schakel and Jeffery 2013, 331) as a majoritarian system reduces the number of parties competing leading to larger vote shares for those competing. At the EP level, all seats are distributed on a proportional basis (Hix and Hagemann 2009, 39). As pointed out by Prosser (2016, 371), European elections may weaken the effects of a less permissive national electoral system in a similar way as the contamination effects that the proportional tier of a mixed electoral system has on the voting at the plurality level as proved by Herron and Nishikawa (2001). If European elections are

held under more permissive electoral rules than national elections, it might allow for the entry of new parties into the national arena, because European elections is an arena where the potential supporters of such parties can coordinate their preferences at a lower cost in national elections (Prosser 2016, 371).

The timing on an election relative to another election has also been shown to influence spillover between elections. Research indicates that small, opposition and new parties win vote share and large national governing parties lose vote share, if a European election is not held immediately after the national election (Hix and Marsh 2007, 503). Electoral cycles is an important indicator in how and to what extent the three electoral levels interact (Deschouwer 2003, 223). The largest difference in election results between first and second-order elections is observed when the later are held around the midterm of the national election cycle (Golder et al. 2017, 5). Research indicates that simultaneous elections may reduce the cost for voters to cast a vote, as the costs of turning out in an election can be dispersed across multiple different elections. Conversely, stakes for parties increase when elections are held on the same date. This may lead to more campaigning work and increased attention in the media, which ultimately makes it easier for voters to access information (Schakel 2018, 692). Voters are more likely to turnout if elections are held concurrently with other elections (Cancela and Geys 2016, 265). Holding regional and national elections simultaneously is thought to weaken second-order effects (Schakel and Jeffery 2013), in which the national arena is considered the most important for the majority of voters. There is a cyclical effect at play, where the vote share gain of governmental parties decreases along the national electoral cycle, where losses are at their maximum at the midterm of the four-year election cycle. Contrary, opposition parties increase their spillover between the elections up to the midterm of the election cycle (Schakel and Jeffery 2013, 335).

Despite the number of studies on electoral systems at the national level, our knowledge of regional electoral systems and their effects on parties' electoral results is limited. This scarcity of knowledge can perhaps be explained by the lack of data that is available on regional electoral systems (Taagepera 2007, 282). Methodological nationalism can be linked to this issue, as scholars have tended to focus on national electoral systems, whilst disregarding the subnational level. Hence, there was no need to collect data on electoral systems at the regional level.

The literature on electoral spillover and electoral systems, has not neglected the electoral system as a significant predictor but rather treated it as a control variable. Researchers have for instance not been able to completely expose the effect of electoral systems on spillover. In many instances, crude variables measuring the electoral system have been included as dummy variables, indicating majoritarian, proportional, or mixed systems, or as ordinal variables setting majoritarian and proportional systems at each end of the continuum, with mixed systems in the middle (Herron and Nishikawa 2001). Thus, we know that the electoral system may impact spillover, yet we need to understand how regionalist parties in particular have been affected by various types of electoral systems, before continuing with elaborating on how the permissiveness of the electoral system may impact bottom-up vertical interactions.

### **2.3.1 The effect of the electoral system on regionalist party election outcomes**

To understand how the multilevel electoral system may impact regionalist parties' spillover, it is necessary to obtain an overview of previous research on the effect of the electoral system on regionalist parties' electoral strength. Levi and Hechter (1985) claim that the electoral system is a major contributing factor in ethnoregionalist party success. Likewise, scholars who have explained regionalist parties' electoral success have sought to include institutional variables, including the party system, electoral system, European integration and the degree of decentralization (De Winter, Gómez-Reino, and Lynch 2018, 144). Other party system measurements such as fragmentation, competition and distinctiveness do not appear to affect these parties' electoral success (De Winter, Gómez-Reino, and Lynch 2018, 144-145). As pointed out by De Winter, Gómez-Reino, and Lynch (2018, 145), one flaw within this research field, is the fact that there is rarely pointed out a clear hypothesis between the electoral system features and regionalist party electoral success.

Thus far, the literature seems to be somewhat divided on the impact of electoral systems on ethnoregionalist parties' electoral outcomes. Some scholars argue that regionalist parties perform better in elections held under proportional systems than plurality systems, as proportional systems may appear more open to small parties (Lublin 2014, 9). Gerring (2005, 98) contends that in countries with single-member plurality elections, small parties tend to succeed. Bochsler (2010) has revealed how it might be easier for minority groups concentrated regionally to obtain seats under majoritarian systems with single-member districts than in systems characterised by proportionally and national legal thresholds.

Nevertheless, De Winter (1998, 220) has found that the impact of the electoral system on the electoral strength of ethnoregionalist parties is quite weak.

Previous research has not been able to fully comprehend the various elements of the electoral system and its impact on regionalist parties' electoral performance in the multilevel electoral system. It is not sufficient to only distinguish between majoritarian, proportional, and mixed electoral systems when studying the effect of the electoral system on party performance. The electoral rules vary significantly both across and within countries, including majoritarian, proportional systems and mixed systems (Golder et al. 2017). For instance, Spain has a proportional system with closed lists in regional, national, and European elections. France on the other hand uses both proportional representation and two-round majoritarian elections. Whereas in Germany, there is a mixed-member system in regional and national elections, but a proportional system in European elections. One needs to bear in mind that national and European electoral systems may produce different results depending on the regions within a country. An example of this is in Åland in Finland, where the national and European proportional electoral system, in practice, produces a one or two-party system. In the electoral district of Åland, one representative is elected by proportional vote (Arter 2022, 3). Since there is only one seat available, it leads to a system where fewer larger parties or alliances are competing. Likewise, voters are more likely to vote for the larger parties to avoid casting a wasted vote, hence reducing the number of parties competing, making it highly challenging for regionalist parties to obtain representation at the national level.

Subnational and supranational electoral systems seem to be somewhat more permissive than national electoral systems in Western-European countries. In EP elections, all member countries employ electoral districts that are larger than in their national elections (Golder et al. 2017). For smaller parties, which regionalist parties often tend to be, they might be less likely to succeed electorally in national elections, and may therefore try to mobilise voters in European elections, as the electoral rules may be more permissive (Golder et al. 2017).

The literature has not neglected the effect of the electoral system on electoral spillover and the strength of regionalist parties but rather treated the electoral system as a control variable. As a result, the following section develops new hypotheses regarding how the electoral system, i.e., the easiness to win a seat in the various arenas, impacts regionalist parties' spillover from the regional electoral arena.

## **2.4 The electoral system and vertical bottom-up spillover effects**

In order to understand the extent to which regionalist parties spill over, I build on arguments of existing theories of electoral spillover, as well as explanations found in the literature on regionalist parties. Given that bottom-up spillover from the regional level has largely been understudied in the literature, there are no specific theories of spillover to rely on, which underlines the need to develop new hypotheses in this thesis. By using existing knowledge about the effect of electoral systems on electoral performance as a baseline, new hypotheses can be tested.

I argue that the various elements of the electoral system in relation to its permissiveness can be summarised in the concept of the vote threshold, which measures the number of votes needed to obtain a seat in a parliament in an electoral arena. This concept takes among other things into account whether the system is majoritarian, proportional, or mixed, the legal threshold, the number of seats, as well as the number of districts within a region. The main argument of the thesis is that regionalist parties' electoral spillover from the regional electoral arena is highly dependent on the number of additional votes required to win a national or European seat, compared to a regional seat.

### **2.4.1 The easiness to win a seat in national and European parliaments**

The election literature has for a long time been occupied with how the mechanical performance of an electoral system can be measured as a whole (Ruiz-Rufino 2007, 492). All electoral systems have thresholds of representation, that is the minimum level of support that a party needs to gain representation. Such thresholds can either be *formal* thresholds which are legally imposed, or they can be *effective*, meaning that they exist as the mathematical by-product of the features of the electoral system (Gallagher and Mitchell 2005). In single-member plurality systems, gaining many votes is not beneficial for parties if it does not come first in any of the constituencies. Likewise, passing the national threshold in a country with proportional representation is not beneficial unless the party also passes the individual threshold in each electoral district (Lublin 2014, 78).

A general question within the election literature has been to figure out the threshold of votes that each electoral system requires to win a seat in a parliament. Most of the work has been concerned with these thresholds at the district level. Theoretically, Rokkan (1968) has been

one of the influential scholars examining this theoretical concept. He was concerned with “*how little support can possibly earn a party its first parliamentary seat?*” (Rokkan 1968, 6-21) and this idea was then referred to as the threshold or representation. Rae, Hanby, and Loosemore (1971, 480) were more interested in the threshold of exclusion, namely the maximum number of votes a party could obtain, but still not be able to win a seat in a parliament. Up until now, researchers had measured the electoral system as the mean between the threshold of representation and the threshold of exclusion (Ruiz-Rufino 2007, 494). The concept of effective threshold was driven forward by Lijphart (1994) and measures the vote share with which parties have a 50-50 chance of winning their first seat. The effective threshold is widely known as the intermediate between the threshold of representation (the lowest level of support with which a party could win a seat) and the threshold of exclusion (the highest level of support with which a party could fail to win a seat) (Gallagher and Mitchell 2005, 607). Taagepera (2002, 384) later criticised the validity of the effective threshold and claimed that the measurement was flawed in considering the impact of vote share concentrations across electoral constituencies on the threshold values at the national level. Taagepera, therefore, presented an altered indicator, the nationwide threshold of representation, which captures the number of votes needed within a country to win a seat in the national parliament by taking into account the number and size of the electoral districts.

As these concepts successfully captures the mechanical effects of the easiness to win a seat in a given electoral arena, I believe that these concepts can be employed in a multilevel electoral setting, to examine how easy it for regionalist parties to spill over from the regional into the national and European electoral arenas. By examining the number of votes needed to win a seat in the regional arena, we can further explore the number of extra votes parties need to subsequently win a seat in national and European parliaments. I contend that the concept of the easiness to win a seat manages to capture two important elements of the multilevel electoral system, which has not been considered in a multilevel electoral perspective before. The first concerns the number of additional votes needed to jump from the regional into the national or European arenas. The second concerns where the party needs to win those votes. This element relates to the number of electoral districts there are within a region, or whether the region is part of a larger electoral district.

This concept of the easiness to win a seat can effectively be captured by the concept of the nationwide (regionwide) threshold of representation as developed by Taagepera (2002, 390).

Given that this thesis adopts a sub-national election perspective and focuses on regionwide election outcomes, the idea of the national threshold of representation can also be disaggregated down to the region level. The nationwide threshold of representation is based on two elements of the electoral system: the first is the number of districts ( $E$ ) and the second is the average district size/magnitude ( $M$ ), which is calculated as the total number of seats divided by the number of districts ( $E$ ). The inclusion of the number of districts is crucial because it allows one to move from the effective district threshold to a regionwide threshold. This is essential because the votes of a party are not typically distributed equally among the districts and one can therefore correct for the number of constituencies within a region. As pointed out by Taagepera (2002, 387), “*the key lies in taking into account not only the magnitude, but also the number of electoral districts and hence the total number of seats in the assembly*”. The regionwide threshold of representation is calculated as follows:

$$T = \frac{75 \%}{[(M + 1)E^{0.5}]}$$

The formula implies that once the number of districts within a region increases, whilst keeping the average district magnitude constant, it increases the likelihood that a party exceeds the effective threshold in one of the districts and obtains a seat. The formula shows how it becomes easier for a party to obtain seats, not only when the mean district magnitude increases, but also as the number of districts increases (Lublin 2014, 77). Lago and Montero (2009, 183) posit that the higher difference in district magnitude between regional and national elections, the less likely subnational parties are to enter the national electoral arena on their own.

A strength with this measurement is the consideration of the number of districts within a region. The number of votes required to win a seat is necessary in itself to explain vertical bottom-up spillover, but it is also vital whether these votes need to be gathered within several districts within the region or only one district. The number of districts impacts the district magnitude which consequently affects the easiness to obtain representation and varies significantly between regions in West-Europe. The reason for why there is large variances in regard to the number of votes needed to win within a region to obtain a seat at the national or European level is because of the way the electoral system plays out in the region. In very small regions such as Åland and Valle d’Aosta there is only one seat up for election within a

quite small electorate, often leading to a party system where only a few parties or alliances are able to compete for the mandate. Whereas in other regions the electorate is larger, there are more seats available in an election and often also several constituencies within a region, which all in all results in a system where it is easier to win a seat.

To provide some examples of the large regional variances in the number of votes needed to win a seat, in Spanish general elections, Madrid consists of one constituency and has 37 seats. The district magnitude is 37 and the calculated effective regional threshold is therefore 1.97 percent<sup>2</sup>. However, there is a three percent legal threshold in national elections. This means that theoretically a party needs to win 1.97 percent of the valid votes within the region to win a seat in the national parliament. However, due to the legal threshold, a party needs in practice win three percent of the votes in the region to obtain a national seat. In French general elections, the region of Alsace consists of 15 districts and 15 seats, creating a district magnitude of one. The regional effective threshold of representation is hence 9.68 percent<sup>3</sup> and requires 66 065 votes in the region to win a national seat. In other regions, it is far more difficult for a party to win a seat in national elections. In Åland, there is one national seat in one region-wide constituency, hence creating a high effective threshold of 37.5 percent<sup>4</sup>. As such, parties need to obtain 4903 votes in the region to win a seat in the national parliament.

The easiness to win a seat also varies significantly at the European level. In Vlaams Gewest in Belgium, there were twelve seats up for election in the region in 2019, and region had an effective threshold of 5.76 percent<sup>5</sup>, meaning that a party needs 244 211 votes to win an EP mandate within an electorate of 8 056 947 voters. In Valle d’Aosta the effective regional threshold is 2139 percent and the number of votes needed to win a seat is 1 094 869 as the electorate consists of 102 417 voters, making it impossible for a regionalist party to win an EP seat on their own. The large difference in number of votes needed to win a seat is because in EP elections in Italy 76 seats are distributed based on the nationwide results with a four percent legal threshold, making it impossible for the small electorate of voters in Valle d’Aosta to gather enough votes nationwide to win a mandate to represent the region. Whereas

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<sup>2</sup> Calculation of the regionwide effective threshold in Madrid:  $\frac{75\%}{[(37+1)*1^{0.5}]} = 1.974 \%$

<sup>3</sup> Calculation of the regionwide effective threshold in Alsace:  $\frac{75\%}{[(1+1)*15^{0.5}]} = 9.68 \%$

<sup>4</sup> Calculation of the regionwide effective threshold in Åland:  $\frac{75\%}{[(1+1)*1^{0.5}]} = 37.5 \%$

<sup>5</sup> Calculation of the regionwide effective threshold in Vlaams Gewest:  $\frac{75\%}{[(12+1)*1^{0.5}]} = 5.76 \%$



in Vlaams Gewest twelve seats were distributed within the region based on the regionwide results, significantly decreasing the number of votes needed to be able to win an EP seat. Where regionalist parties in Valle d'Aosta have to compete for a total of 76 EP seats nationwide in Italy, regionalist parties in Vlaams Gewest can compete for twelve seats within their own region, considerably increasing their chances of being able to win a European seat.

These regional variations should significantly impact the electoral results of regionalist parties in regional, national, and European elections, as well as the extent to which they manage to spill over from the regional arena. For instance, if a party receives ten percent of the regional votes in the regional election (RR), does it spill over within the party's own region into their regional election result in national (NR) and European elections (EUR)? The vote threshold should pick up on this and clearly impact how 'easy' it is for regionalist parties' regional vote share in a regional election to contaminate their regional vote share at a higher electoral arena.

The absolute vote threshold indicates how difficult it is to win a seat in the first place, either in a regional, national, or European election. It describes how many regional votes a party needs to obtain to win a seat in a parliament. The strength with the vote threshold is that it takes into account the number of valid votes and size of the region when determining the number of votes required to obtain a seat. When wanting to explain the jump from the regional electoral arena, the vote threshold ratio says something about how much harder it is to win a seat in a national or European election compared to a regional election within the same region and with approximately the same electorate and number of voters. A ratio of five, means that parties are required to win five times more votes than they needed to win a regional seat in order to be able to win a seat in the national parliament. If parties need 10 000 votes to win a regional seat, they suddenly need 50 000 votes from the same regional electorate to be able to win a seat in a national parliament. Then if the vote threshold ratio of 20, parties need to win 20 times as many votes as they needed to win a regional seat, to be able to win a national seat. If a regional seat requires 10 000 regional votes, a national seat suddenly requires 200 000 regional votes from the same regional electorate.

There are certain issues related to the threshold of representation that is crucial to take notice of. As pointed out by Gallagher and Mitchell (2005, 607), one cannot expect to find a formula that works in all circumstances. The regionwide threshold of representation considers the number of districts within a region; however, it does not consider the concentration and

distribution of voters between the districts within a region. As acknowledged by Lublin (2014), knowing where a party's supporters are located is important to assess the impact of the electoral system on a party's electoral success. When the population is not evenly distributed between the districts within a region, it may affect how easy it is for a party to win a seat. When a larger electorate is in a district, it is increasingly harder to win a seat there than in a district with a smaller electorate. A caveat of the measurement and the data, lies in the fact that we do not know how the supporters and voters of regionalist parties are concentrated within their region or the given territorial area<sup>6</sup>. Fortunately, this issue can be circumvented by focusing on regionalist parties, as they are perceived to compete in all districts within a region and compete for the region as a whole. The purpose of these parties is to represent the whole region, not a specific part of the region. Therefore, it is highly likely that if there are several districts within a region, regionalist parties seek to field lists in all districts which decreases the issue of the distribution of voters. Nevertheless, by knowing how supporters are distributed within a region, one could have been even more precise about how the number of districts within a region would affect the easiness to win a seat.

Overall, the vote threshold ratio is the most optimal concept to measure the jump or spillover from the regional electoral arena into the national and European arenas. As far as I am aware, the impact of vote thresholds at different electoral arenas has not been explored properly in the multilevel election literature before. Despite national election scholars focusing on the number of districts when calculating the threshold of representation, hence somewhat considering the sub-national perspective, this research has been limited to national elections, overlooking regional elections. My argument is therefore that the concept of a regionwide threshold of representation can be applied to a multilevel setting and allow us to explore how the number of votes needed to win a seat can impact regionalist parties' chances of spilling over into national and European elections. I believe that the 'easiness' to win a seat can vary significantly depending on the electoral constituencies as well as between the three electoral arenas. Consequently, the 'vote threshold' in the multilevel electoral system is an original concept which seeks to measure the total number of votes a candidate or party needs to obtain to win a seat in a regional, national, or European parliament.

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<sup>6</sup> The Minority at Risk (MAR) dataset does capture how ethnic groups are dispersed within a region; however, and although regionalist parties occasionally overlap with ethnic parties, regionalist parties do not encompass ethnic groups as such and therefore there is no data available on the location and dispersion of regionalist voters within a specific region or territorial area.

The more difficult it is for a regionalist party to obtain a seat in the regional parliament, the more challenging it is for parties to use the regional electoral arena as a springboard to enter the national and European level (Brancati 2008; Massetti and Schakel 2017). In most instances, it will be easier for parties to win a seat in regional parliaments than in the national or European parliament. Nevertheless, in certain instances, it might be easier to win an EP seat than a national seat. The hypothesis laid out in this thesis relates to the ratio between the absolute vote thresholds at the regional, national, and European electoral arenas and specifically focuses on the additional votes needed to be able to spill over into national and European elections. Parties need fewer resources to gain less than a thousand votes, compared to several hundreds of thousands of votes to win a seat in an election. When wanting to compete in national or European elections, parties must mobilise a larger mass of their voters within the same region to obtain a seat. On the basis of this, the following hypotheses are deducted.

**H1a:** *The larger the ratio between the regional and European vote threshold, the less likely regionalist parties are to spill over from the regional to the European arena*

**H1b:** *The larger the ratio between the regional and national vote threshold, the less likely regionalist parties are to spill over from the regional to the national arena*

The reason to focus on regional spillover into both the national and the European electoral arenas is because I assume that the impact of the vote threshold ratio might be different at the national and European level. It is reasonable to assume that the jump from the regional to the European arena is more difficult than the jump from the regional to the national. The average number of votes needed to win a seat in a national parliament is 198 323 votes, whereas the average number of votes required to obtain a seat in the European Parliament is 271 088 votes. On average, parties need to gather 73 000 more votes within the region to be able to win a European seat compared to a national which suggests that on average it is harder to gain representation at the European level. This can also be exemplified through the relative different parliament size between national and European elections. In the 2017 national elections in Schleswig-Holstein in Germany, parties could compete for 709 seats, whereas in the European Parliament there are only 99 seats up for election in the country. The regional electorate size stays largely unchanged between national and European elections, however the

number of seats decreases drastically, rendering the European arena for the most part the least permissive arena, although this may vary between regions over time.

#### **2.4.2 The interaction between previous regional vote share and the vote threshold ratio**

Given that elections in the multilevel electoral arena are dependent on or affected by each other and not isolated, one vote share in one electoral arena is likely to be related to another vote share in another electoral arena. Hence, regionalist parties' regional vote share in the previous regional election is assumed to be highly correlated with their regional vote share in the subsequent national or European election. Along this line of reasoning, one may assume that the higher the vote threshold ratio will have different effects depending on regionalist parties' total vote share in the previous regional election. Specifically, one would expect that the vote threshold ratio has a smaller effect on regionalist parties with a larger regional vote share in the previous regional election. This is because these parties are assumed to spill over their regional vote share from the regional arena into their regional vote share at the national or European arenas more easily, simply because they are larger in the first place. Regionalist parties with a smaller regional vote share in the previous regional election are assumed to a larger extent to be affected by the number of additional votes needed to win a national or European seat, as it is more difficult for them to spill over from the regional arena in the first place. This logic yields the following hypotheses:

**H2a:** *The higher regionalist vote share in the previous regional election, the smaller effect the vote threshold ratio has on regionalist parties' regional vote share in the subsequent European election*

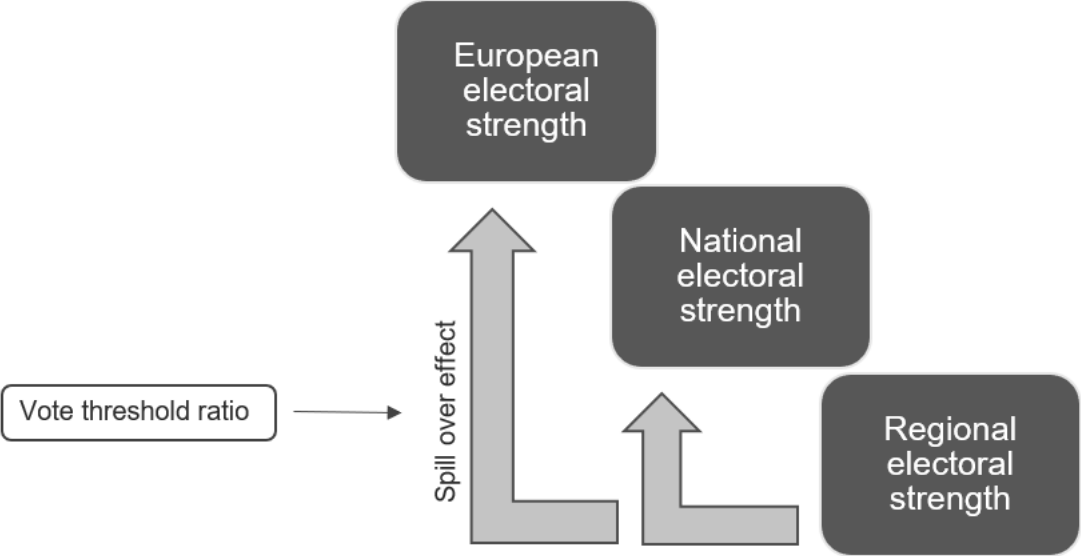
**H2b:** *The higher regionalist vote share in the previous regional election, the smaller effect the vote threshold ratio has on regionalist parties' regional vote share in the subsequent national election*

### **2.5 Summary of theoretical expectations**

The main argument of the thesis is how vote thresholds in relation to how more difficult it is to get from the regional into the national and European electoral arena affects spillover. The purpose of this chapter was to highlight the need to single out the electoral system as an important predictor in explaining vertical bottom-up spillover from the regional electoral arena. As demonstrated in the literature review, there is a gap in the literature, where

researchers have not looked at the spillover from the regional arena as an important element of the multilevel electoral system in Western Europe. Additionally, the literature has refrained from studying how the peculiarities of the electoral system impact regionalist parties' abilities to spill over into the national and European arenas but rather focused on the more general electoral system categories. There is of empirical interest to study how the number of seats required to win a seat impact how easy it is for a party to spillover from the regional electoral arena to arenas at a higher level and gain representation.

This task at hand serves to be well exemplified by regionalist parties, who concentrate their electoral competition to a given region or territorial area, thus highlighting the vertical interaction effect between the electoral arenas. In this manner, one can trace how the vote share in the regional election is impacted by the vote threshold ratio thus contaminates the party's electoral result within the region in a subsequent national and European elections, as shown in figure 2.2.



**Figure 2.2** Overview of theoretical argument

Before delving into the dataset being used to examine the research question, it is worthwhile to mention some elements related to the possible scope conditions under which the developed hypotheses apply. The hypotheses developed may not be as efficient in explaining instances where the electoral system creates very large differences between the ‘easiness to win a seat’. For instance, in the regions of Valle d’Aosta and Åland, the electoral system creates different results between the national and regional elections. Because there only being one seat

available in the national parliaments for these regions, it in practice creates a two-party system in which regionalist parties have to form coalitions in the national elections to even be able to win a majority of the votes and consequently the seat, despite there being a proportional system. Meanwhile in the regional election, there are more seats in the regional parliament, which creates more dispersed election results with several parties competing. In these instances, the number of additional votes needed to win a seat may not be able to capture how difficult it is to spill over from the regional arena and win a seat at the national level through the number of votes needed to win a seat. The following chapter presents the dataset used in the analyses and the measurements of the variables of interest.

### **3 Data and measurement**

The purpose of this chapter is to present the regionalist party dataset used in the analysis including the operationalizations of the variables of interest. I use an original dataset that I developed consisting of regionalist parties' regional electoral strength in regional, national, and European elections in Western Europe, where election results are disaggregated to the regional level. The chapter begins with a conceptualisation of regionalist parties then the content of the dataset including how the dataset was constructed is explained. The chapter then gives an overview of the dependent variables, the main independent variable as well as the control variables used in the analyses.

#### **3.1 Conceptualising regionalist parties**

The main defining criteria of regionalist parties as mentioned in the theory section is that they have a position on the centre-periphery dimension and their position may range from protectionist to secessionist (Massetti and Schakel 2016). A moderately autonomist or protectionist regionalist party demands regional autonomy to preserve regional culture and language, whereas secessionist regionalist parties seek to challenge the unity of the state.

The definition of regionalist excludes several types of political parties that may share certain similarities with regionalist parties. Firstly, it excludes regional parties that formally or de facto serve as state-wide parties' regional branches (Massetti and Schakel 2015, 868). Secondly, the definition eliminates state-wide parties that campaign for federalisation and decentralization of the state. Thirdly, parties that are only temporarily present in one or a few regions, but have state-wide aspirations, are also excluded from the definition. Lastly, ethnic parties are also excluded from the definition, as these actors are not concerned with self-government rights for their region, but rather rights for their ethnic community (Massetti and Schakel 2015, 868).

When defining regionalist parties, some conceptual distinctions are necessary. Firstly, the difference between regionalist parties and ethno-regionalist parties implies the distinction between group rights and territory rights. Regionalist parties tend to demand certain territorial self-government rights, for instance, the protection of territorial or regional identities (De Winter 1998, 204-205). Whereas parties that are focused on national or ascriptive issues, such as ethnicity, religion and language are labelled ethnic (Lublin 2012, 1080). It is also necessary

to distinguish regionalist parties from state-wide parties. Parties which organise themselves at the state level, and field candidates in all or almost all constituencies in national elections are denominated state-wide parties (Alonso 2012, 28). These parties also attempt to attract voters throughout the country and advocate policies that favour voters in the whole country, which is a characteristic which does not apply to regionalist parties (Brancati 2005, 143).

When examining electoral spillover effects, it was necessary to determine which region was the regionalist party's primary region for which they compete and voice their territorial demands. When determining regionalist parties' core region, I primarily relied on existing data and sources, including work by Massetti and Schakel (2016). For newly identified regionalist parties, that have not been coded before and existing sources were not available, I examined the region or regions in which the party focused its electoral competition on. If a party competed in several regions, with no indication of which region was its main place of competition, I used the name of the party as an indicator of its territorial engagement. Lastly, if none of the above methods were successful, I used secondary sources including the party's websites to determine the party's core region.

Certain regionalist parties are pan-regionalist, meaning that they compete in more than one 'institutional' region. Pan-regionalist parties do not have one 'institutional' region as their primary region of competition, but rather an invented territorial area made up of several different regions. For instance, in Italy, Lega Nord campaigned for the territorial autonomy of the Padania region, and in Germany Partei des Demokratischen Sozialismus compete for the enhanced autonomy of Eastern Germany<sup>7</sup>, despite neither Padania nor Eastern Germany being institutional regions (Massetti and Schakel 2015, 870). Therefore pan-regions are introduced into the dataset to make sure that the regionalist parties only have one core region, where the vote shares and independent variables are weighted averages of the constituent regions, based on the population size.

When calculating the vote shares and independent variables for these pan-regions, I took the population size as a basis for weighting rather than the electorate size. The reason for this is

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<sup>7</sup> The dataset consists of six cases of pan-regionalist parties and pan regions. These include Partit Occitan and Partit de la Nacion Occitania in 'Occitanie' in France, Partei des Demokratischen Sozialismus in 'Eastern Germany' in Germany, Lega Nord in 'Padania' in Italy, Partij voor het Noorden in 'Noorden' in the Netherlands, Tierra Comunera in 'Castilla' in Spain, and English Democrats in 'England' in the UK (see Appendix A for a complete list of regionalist parties and their core region).



that a more distant measure is preferred to ensure that the electoral system is not taken into account at this point. If one were to use the electorate size, it introduces certain limits as to whom can or cannot vote which will vary between regional, national, and European elections and this is tied to the characteristics of the electoral system. Additionally, the population has been used as a weight for the calculation of the regional authority scores (Hooghe, Schakel, and Marks 2016). Lastly, using the population means that I do not have to choose which type of election as the basis of the electorate size, given that the population remains the same in all regions despite which election one focuses on, which overall makes the calculations more straightforward and reliable.

### **3.2 Regionalist party dataset**

In order to examine the impact of the electoral system on vertical bottom-up spillover, I use a regionalist party dataset I constructed within the Strengthening Regional Democracy Project at the University of Bergen (2019). The dataset consists of eleven EU member states in Western Europe which hold regional, national and European Parliament elections from 1945 until 2019. The data covers the electoral strength of 211 regionalist parties (see Appendix A) in 58 regions in Belgium, Finland, Denmark, France, Italy, the Netherlands, Spain, Sweden, and the United Kingdom. The countries differ regarding some key independent and control variables, namely the electoral system, electoral timing, regional authority, and regional identity. Belgium and Germany are federal countries; the United Kingdom, Italy and Spain are regionalized states, and the Netherlands, Sweden, Denmark and France are unitary and to some extent decentralised states (Loughlin, Hendriks, and Lidström 2011). These countries also vary in the amount of regional authority that is dispersed. In Denmark, Germany, the Netherlands, Sweden, and France (not including Corsica), regional authority is symmetrical. Meanwhile, regional authority is dispersed asymmetrically in Spain, Italy, Belgium, and the UK (Hooghe, Marks, and Schakel 2008). EU member states in Eastern Europe are not included in the dataset due to difficulties in data collection, in particular, because there is a lack of information and sources which would help the breakdown of alliances.

The dataset is characterized by a time-series cross-sectional structure (TCSC) which implies that repeated observations are on fixed units such as regions (Beck and Katz 1995, 634). The thesis will further elaborate on the underlying assumptions related to the data structure and how that will affect the analysis method of choice. By using time-series cross-sectional data, researchers can increase statistical leverage, as the combination of time and unites multiples

the number of observations the researcher can employ (Fortin-Rittberger 2014). Importantly, TSCS solves issues of having too many independent variables for too few cases and expands the degrees of freedom needed to model complex relationships. By increasing the number of data points, the degrees of freedom increase, which ultimately may reduce collinearity among independent variables (Fortin-Rittberger 2014). Analyses of TSCS data allow one to capture variation both over time and space, specifically how electoral systems affect regionalist parties' abilities to spill over from the regional arena to the national and European arena over time and between regions within a country.

To analyse spillover effects as accurately as possible, I have created datasets both at the party level as well as at the regional level. In the party-level dataset, regionalist parties are the unit of analysis, whereas, in the region-level dataset, regionalist parties' vote shares are summed by election year, hence the unit of analysis is the election. The party-level and region-level datasets include all countries, regions, and elections in which a regionalist party competed. For regional, national, and European elections, a region-election is compared to the two other elections which were previously held. For the dataset containing spillover from the regional to the national level, a national election is compared to a previous regional and European election (NR-RR-EUR). For the dataset measuring spillover to the European level, a European election is compared to a previous regional and national election (EUR-RR-NR). The reason to include the two other elections which were previously held is to make sure we measure the spillover from one arena to the other, as elections are not held in isolation. For instance, when examining bottom-up spillover from the regional to the national electoral arena, one needs to include the previous European election as well, to control the effects of the European election. Table 3.1 gives an overview of the number of countries, regions and parties that the dataset consists of, as well as the time frame of the regional, national, and European elections.

**Table 3.1** Overview of countries, parties, regions, and elections

Country	Regionalist parties	Regions	Regional elections		National elections		European elections		
			First	Last	First	Last	First	Last	
Belgium	14	Communities and regions	4	1974	2019	1949	2019	1979	2019
Denmark	6	Regions	2	1946	2018	1945	2019	1979	2019
Finland	3	County	1	1975	2015	1979	2019	1996	2019
France	30	Régions	7	1986	2015	1986	2017	1989	2019
Germany	5	Länder (West)	10	1946	2017	1953	2017	1979	2019
		Länder (East)	6	1990	2016	1990	2017	1994	2019
Italy	37	Regioni ordinarie	15	1985	2018	1987	2018	1989	2019
		Regioni speciale	4	1949	2018	1953	2018	1979	2019
Netherlands	3	Provinces		1966	2017	1967	2017	1979	2019
Spain	83	Comunidades	15	1982	2019	1977	2019	1987	2019
Sweden	1	Landstinge	2	1985	2018	1985	2018	1995	2019
Switzerland	3	Cantons	2	1991	2019	1991	2019	NA	NA
United Kingdom	30	Devolved entities	4	1949	2017	1945	2019	1979	2019

The aggregate-level datasets used in the analyses are based on the party-level datasets. The aggregate-level dataset was constructed by summing regionalist parties' vote shares at the regional level for each election year in regional, national, and European elections. The party-level dataset was necessary to make sure that vote shares were aggregated at the regional level as detailed as possible. The reason to analyse spillover effects at the aggregate level and not the party level is because it will allow us to observe how the electoral system impacts regionalist parties as a party family. By focusing on regionalist parties as a group there is less need to control for the variations between the different regionalist parties which may give them greater abilities to spill over from the regional arena, for instance, their alliance formations and strategies or their ideological positions and so forth.

It is important to underline that I am comparing regional vote shares no matter the type of election. Specifically, regional vote shares in regional elections (RR), regional vote shares in national elections (NR) and regional vote shares in European elections (ER) are compared. Hence, what I am doing is breaking down each regionalist party's vote share to the region, where the electorate or number of voters is practically the same despite which election one is

focusing upon. There might be small differences due to eligibility, and somewhat larger differences in relation to the turnout in elections. The idea is that a one percent RR should directly translate into a one percent NR and one percent ER vote share because the voters remain largely the same within the region and regionalist parties are still appealing to the same voters no matter the election. Very importantly, this does not mean that a one percent regional vote share in a regional election translates into a given percentage vote share in national elections at the national level, but rather a one percent regional vote share in the national election. This is important to make clear as the focus in the thesis is on regionalist parties' vote shares disaggregated to the regional level in regional, national, and European elections.

In many instances, regionalist parties have to form alliances in national and European elections to be able to surpass the legal or effective thresholds of representation. These alliances can either be with state-wide parties or with other regionalist or regional parties. Hence, to study regionalist parties' electoral strength in national and European elections, the meticulous administration and dissection of vote shares are crucial to be able to analyse regionalist parties' total regional vote share strength at the national and European level.

Table 3.2 depicts an overview of the number of alliances regionalist parties are part of in national and European elections, to show how important coalition formation is for this party family. The table only shows alliances regionalist parties formed in their core regions. In the dataset measuring spillover into national elections, there are 496 alliances included, where 117 of these elections had at least one regionalist party alliance. Concerning the dataset of spillover into European elections, there are 309 elections included, where 128 of these elections had at least one alliance. These numbers reveal that without administering and breaking down these alliances in the party-level dataset one would not have been able to accurately measure regionalist parties' vote share strength at the aggregate level.

**Table 3.2** Overview of number of alliances regionalist parties are part of

	<b>National elections</b>	<b>European elections</b>
Number of elections	496 elections	309 elections
Number of alliances	187 alliances	193 alliances
Number of elections with alliances	117 elections	128 elections

To my knowledge, this dataset is the first proper attempt to explain regionalist party spillover in a multilevel electoral system, with detailed election data disaggregated at the regional level. What makes the dataset original yet also reliable, is in particular the breakdown of electoral alliances and the careful notation of alliance strategies. At the party-level vote shares were either broken down based on seat shares or when seat shares were not available, votes share were distributed to the senior<sup>8</sup> party of the alliance. The work also included the notation of whether the partners of the alliance were junior<sup>9</sup> or senior, whether the alliance partners were state-wide or regionalist as well as coding the comparison of elections indicating whether comparisons are deflated or inflated (a 50-page codebook with more detail is available upon request). Accordingly, this work is an improvement within the research field of regionalist parties and sub-national election data, which previously did not manage to break down the alliances that regionalist parties often tend to form in regional, national, and European elections.

What needs to be noted is that how the electoral system plays out has effects on the way the dataset was constructed and how vote shares were compared across elections over time. By focusing on aggregate level results, one can somewhat circumvent issues of alliances, because the focus is on regionalist parties' total vote share strength in an election. However, there is an issue when there is only one seat available in the region in national or European elections, this has major consequences for how parties compete in the elections but also for the impossibility to break down the vote share based on seat share. When there is only one seat available and an alliance obtained the seat, there is no way of breaking down the vote share based on seat share, hence the total vote share is given to the senior party in the alliance.

When a regionalist party is the junior party in the alliance, they receive zero percent vote shares, which is an underestimation of the realistic vote share. This is especially apparent when they form alliances with state-wide parties rather than regionalist parties. When regionalist parties are deemed the senior party in the alliance, they receive the total vote share which is then an overestimation of the vote share they obtained. However, there is no way of disaggregating the vote share, which then leads to large vote share swings when comparing vote shares over time, which cannot be circumvented by using the aggregate level dataset.

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<sup>8</sup> The senior party in an alliance is the party which received the largest vote share in a previous election.

<sup>9</sup> The junior party in an alliance is the party which is not the senior and did not receive the largest vote share in a previous election.

Of the many election datasets, some suffer from methodological nationalism, which is a tendency among political scientists to take the national level as the unit of analysis when collecting data, and election outcomes are analysed at the national level. For instance, the Comparative Study of Electoral Systems (CSES 2019) and the European Election Database (NSD). Consequently, political scientists have overlooked significant variation at the subnational level. Opposing methodological nationalism should however not culminate in methodological regionalism, where researchers focus on the regional level without taking the other levels of government into consideration. These points illuminate a need for a regionalist party dataset that captures the interaction between the regional, national, and European electoral arenas over time, which this dataset does. The next section describes the dependent variable, the main independent variable as well as the control variables used in the analysis.

### **3.3 Sample, variables, and operationalisation**

The sample consists of over 211 regionalist parties' vote shares which are clustered within 489 national elections and 302 European elections, held within 58 regions which are clustered within eleven countries from 1945 until 2019. I follow the definition of a region as proposed by Hooghe, Marks, and Schakel (2010, 4), "*a regional government is the government of a coherent territorial entity situated between the local and national levels with a capacity for authoritative decision making*". This is the first level of government directly below the national government, which holds elections and has an average population of more than 150 000 inhabitants.

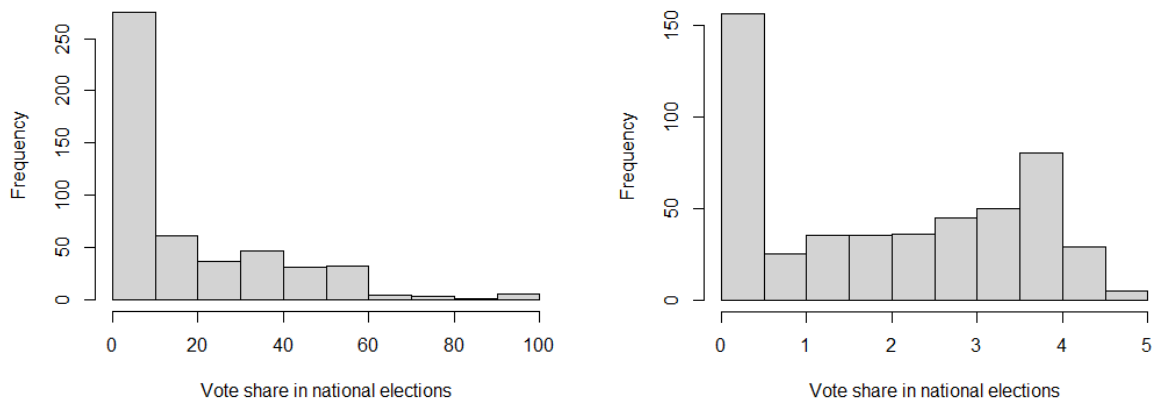
### **3.4 Dependent variables**

There are two main dependent variables used to examine the research question. Given that this thesis explores vertical bottom-up spillover from the regional to the national level and from the regional to the European level, there are two dependent variables. The first dependent variable measures regionalist parties' regional vote share in a national election compared to their regional vote share in a previously held regional election. The second dependent variable measures regionalist parties' regional vote share in a European election compared to their regional vote share in a previously held regional election. The national and European vote shares are disaggregated to the regional level.

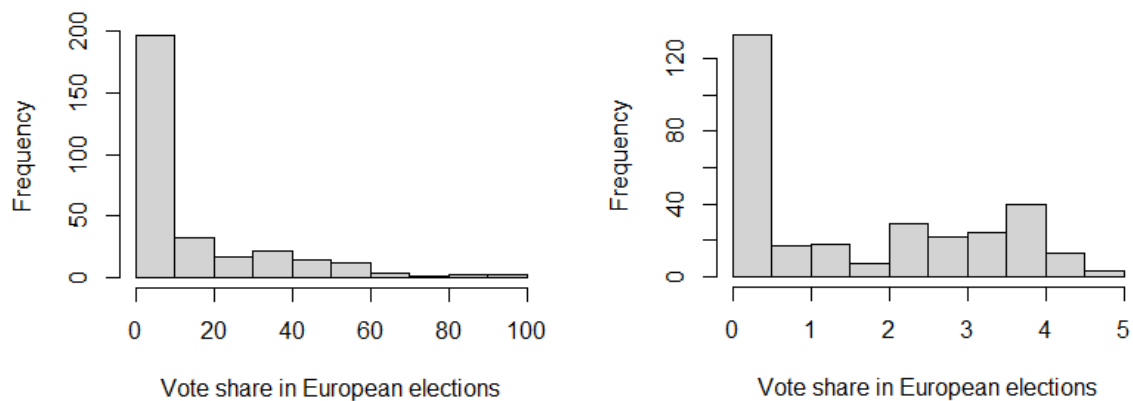
To model the change level between a vote share in one electoral arena and a vote share in a previous election in another electoral arena, it is most comprehensive to model the level effect

and not the vote share swing. This is because if one model the vote share swing by subtracting vote share A from vote share B, one does not take into account whether the vote shares in either election are high or low. There is a level effect present in relation to the parties' vote shares, where vote shares are positively correlated with the ability to spill over. If a regionalist party achieves 50 percent of the votes in a regional election, it is reasonable to assume that the party is more likely to spill over into the national and European arena. For instance, it is much harder for Tierra Comunera to increase their national or European vote share from one percent to two percent in Castilla, compared to Bayernpartei increasing their national or European vote share from 47 percent to 48 percent in Bayern, because the increase in votes from one to two percent is a 100 percent increase. Thus, by modelling the level effect, one can consider the difference between high and low vote shares. The level effect is modelled by using the regionalist parties' national or European vote share as the dependent variable whilst controlling for the regional vote share in the previous regional election.

Given that the dataset has a structure where a national or European election is compared to a previous regional and national or European election, there will in several instances be parties who have participated in a national election or EU election, but not in a regional election and hence got a zero-vote share. Similarly, there are cases where a party participates in a regional election but not in a subsequent national or European election. Therefore, there will often be several zero vote shares when we are examining the spillover, which makes it important to be aware of the distribution of the variables. The distribution of vote shares in regional, national, and European elections are positively skewed with many zero values and a long 'tail' of positive vote shares, as shown on the left in Figures 3.3 and 3.4. A possible solution to this issue is either to take the natural logarithm or the square root of the variable. The preferred method is taking the natural logarithm of the variable, as taking the square root of a value of zero risks giving more weight to some numbers than others (Jason 2013, 173). The logarithm transformation should only be used for variables which are greater than zero, as the logarithm of a number equal to zero is undefined (Jason 2013, 174), however by taking the natural logarithm of the variable, one adds the value one. The histograms on the right in the figures show that the transformed dependent still is somewhat positively skewed with many zero values, however, the distribution is more equally distributed, which indicates that the transformation of the variable was more beneficial than not transforming the variable at all.



**Figure 3.3** Distribution of the dependent variable (national vote share) in its original (left) and transformed version (right)



**Figure 3.4** Distribution of the dependent variable (European vote share) in its original (left) and transformed version (right)

To model the level effect when looking at electoral spillover into either national or European elections, regionalist parties' previous regional vote share is included as a control. The distributions of the previous regional vote shares are shown in figures B1 and B2 in Appendix B. As with the national and European vote share variables, to account for the left-skewed distribution of the regional vote shares, I take the natural logarithm transformation of the variable to produce a more normally distributed sample.

### 3.5 Explanatory variables

There are various factors that might affect the electoral spillover from a regional to either a national or a European Parliament election. The hypothesis section posited that the electoral system, namely the number of additional votes needed to win a national or European a seat



compared to a regional seat is essential in explaining vertical bottom-up spillover effects. The explanatory and control variables are derived from the Regional Electoral Democracy dataset on electoral systems (RED-ES) in the Strengthening Regional Democracy project (University of Bergen 2019), and it provides detail on the design and rules such as thresholds, rounds, seats and constituencies, the timing of elections, as well as how the national and European electoral systems play in the regions (Schakel and Verdoes 2022 Forthcoming).

### 3.5.1 Vote threshold ratio

To test the hypothesis as to whether the larger number of extra votes needed to win a seat in a national and European parliament compared to the regional parliament makes it more challenging for regionalist parties to spill over from the regional arena, I use a variable measuring the vote threshold ratio between the regional arena and the national or European arena. The vote threshold ratio is based on two elements, the absolute vote threshold in a regional election and the absolute vote threshold in either a national or a European election.

The absolute vote threshold measures the total number of valid votes a political party or candidate is required to win within a region to obtain a seat in a given electoral arena. This measurement relies on the nationwide (regionwide) effective threshold of representation as developed by Taagepera (2002) as explained in the theory section. Because the dataset consists of election results which are disaggregated at the regional level, I can analyse the regionwide election results, and not the constituency level, and therefore focus on the regionwide threshold of representation. The effective regionwide electoral threshold measures the percentage of regional votes needed within a region to obtain at least one seat in a given election. The regionwide effective threshold contains two crucial elements, the average district magnitude ( $M$ ) and the number of districts ( $E$ ) and is measured as such:

$$T = \frac{75 \%}{[(M + 1)E^{0.5}]}$$

In order to obtain the absolute vote threshold (i.e., the number of votes needed to obtain at least one seat), the regionwide effective threshold is multiplied by the number of valid votes in the region. Accordingly, the absolute vote threshold number is adjusted for the turnout in the region and reflects the absolute number of votes needed to obtain one seat in that particular regional, national or European elections in that specific region. The measurement is

therefore sensitive to differences between regions, as the number of votes required is likely to vary significantly between regions and over time.

In certain instances, there might be electoral systems in regions which also have legal thresholds for the entry into national and European parliaments. For instance, in Germany, there is a five percent legal threshold. Therefore, it is necessary to emphasise that the absolute vote threshold (which is based on the formula) does not apply when there is a legal threshold which requires a higher percentage of regional votes to win a seat than the absolute vote threshold does. If the regionwide threshold is lower than the regional legal threshold, then the legal threshold is used as the absolute vote threshold. If there is a legal threshold and this threshold has a lower threshold than the regionwide threshold, the vote threshold is employed. For instance, in Spain, there is a regionwide legal threshold of three percent, meaning that parties have to reach this threshold to gain representation, despite the effective regionwide threshold being lower. This case applies to Madrid, where the effective threshold is 1.97 percent, due to there being 37 seats within one regionwide district (see page 25).

In the case of mixed electoral systems, such as in Germany and Italy, the seat distribution tier is used for the calculation of the regionwide effective threshold and consequently the vote threshold. However, there are some limitations regarding this way of calculating the absolute vote threshold. The calculations do lead to high vote threshold numbers indicating that is very challenging to win a seat in national elections, however, in practice, it is not as challenging. For instance, in Germany, due to their overhang seats or balance seats, candidates or parties can enter parliament despite not managing to reach either the effective or legal threshold.

In some instances, seats in national elections are based on the nationwide election outcomes, rather than the region or district election outcome, and this somewhat complicates the calculation of the regionwide effective threshold and hence absolute vote threshold. In the Netherlands, there is a nationwide electoral district, and in Germany, the Netherlands and Italy (since 1994), there is a legal threshold nationwide. If the effective threshold between national and regional elections are compared without considering how the seats are allocated, the electoral system could have been perceived equally permissive on the national level as on the regional level, or that the national level is more permissive than the regional level. For instance, in the region of Groningen in the Netherlands, a party needs 1.7 percent of the regional votes to obtain a seat in the regional parliament, whereas a party needs 0.67 percent

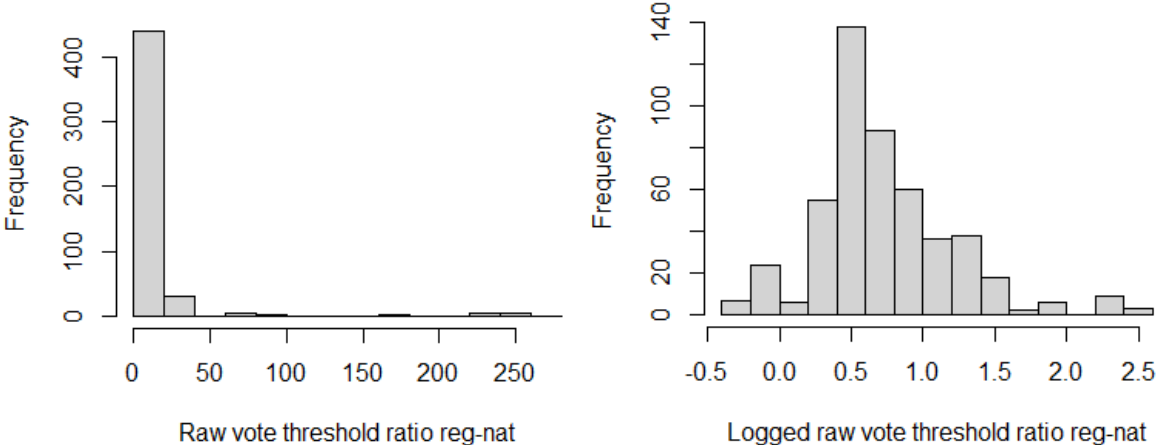
of the national votes to win a national seat. In the 2019 regional elections, the electorate consisted of 457 753 voters and 43 seats were distributed in a single constituency without a legal threshold. Parties therefore required 4 352 votes to win a seat. Meanwhile, in the national election in 2017, the total national electorate consisted of 13 million voters and required 70 000 votes to win a national seat, which is 16 times as many votes. This example illustrates how it is misleading to claim that the national level is more permissive than the regional. In such instances where the seats are allocated based on the nationwide results, the effective regional threshold is calculated indirectly. First, the effective national threshold is calculated. Then, it is determined how many valid votes are required to pass the effective threshold. The number of valid votes cast in the region is subsequently divided by the number of votes needed to obtain a seat and multiplied by 100. This percentage is utilised as the effective national regionwide threshold.

The main independent variable used to examine the hypothesis is the ratio between the absolute vote thresholds at the regional level and the national or European level. The hypothesis posited in the theory chapter states, that the higher the vote threshold ratio between regional and national or European elections, the less likely regionalist parties are to spill over from the regional electoral arena. The ratio is measured by dividing the absolute regional vote threshold by the national or European absolute vote threshold and then taking the common logarithm ( $\log_{10}$ ) of the quotient. The reason for this is that the logarithm of the ratio of two quantities is the same as the logarithm of the numerator minus the logarithm of the denominator. When measuring the ratio, one wants to capture the number of additional votes needed to win a seat in an electoral arena higher than the regional. To capture a ratio that most resembles the untransformed thresholds being divided by one another, it is most useful to log the ratio and not the thresholds separately. This is shown in the following calculations, with a providing example.

$$Ratio = \log_{10} \frac{vote\ threshold\ nat/EU}{vote\ threshold\ reg} = \log_{10} \frac{14378}{1131} = 1.104$$

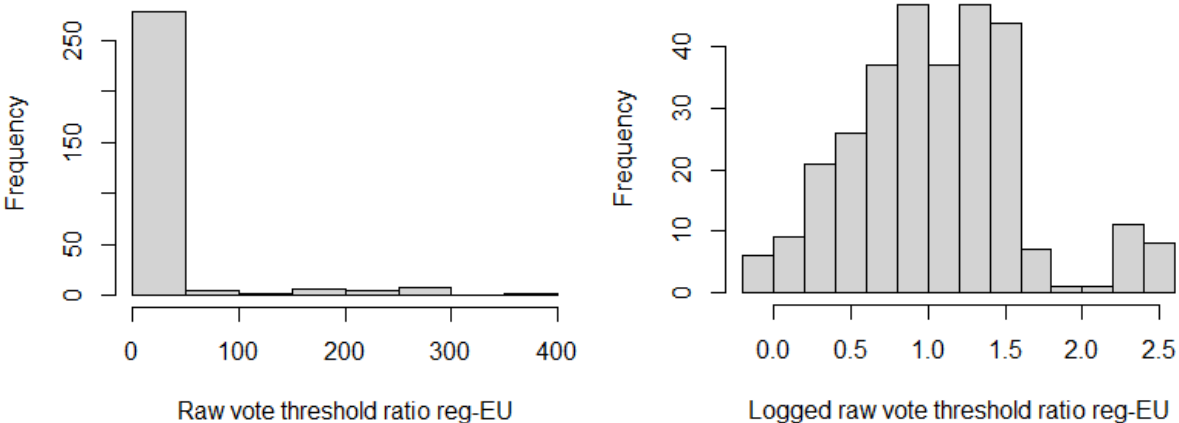
The example depicts an example where 14 378 regional votes are required to win a national seat and 1131 regional votes equal a regional seat, hence the log of the ratio results in a ratio of 1.104. By taking the logarithm of the ratio, it corrects the skewness of the variable, and also keeps the level effect of the ratio, as opposed to dividing the log thresholds by each other. It is

also worth noting that the vote threshold ratio does take into account the size of the electorate and the number of valid votes. The non-transformed and transformed vote threshold ratios are shown between national and regional elections are shown in Figure 3.5 and between European and regional elections are shown in Figure 3.6.



**Figure 3.5** Distribution of the non-transformed (left) and transformed (right) vote threshold ratio between regional and national elections

*Notes:* Shown is the distribution of the vote threshold ratio between national and regional elections in its non-transformed values on the left and the logarithm transformed values on the right.



**Figure 3.6** Distribution of the non-transformed (left) and transformed (right) vote threshold ratio between regional and European elections

*Notes:* Shown is the distribution of the vote threshold ratio between national and regional elections in its non-transformed values on the left and the logarithm transformed values on the right.

### **3.6 Control variables**

Although the vote threshold ratio is presumed to be the main contributing factor in explaining regionalist parties' abilities to spill over from the regional electoral arena, it is necessary to assure the robustness of the findings, by controlling for other factors which have been highlighted by previous studies. These include regional vote shares in national or European elections, regional authority, regional identity, presence in the regional parliament and the electoral timing of elections.

#### **3.6.1 Regional vote share in the previous national or European elections**

Given that the electoral arenas are not independent of each other in the multilevel election system, election outcomes from the third arena might influence the vertical spillover effects. When examining spillover from the regional to the national electoral arena, it is necessary to control for regionalist parties' regional vote share in European elections. Vice versa when examining spillover from regional to the European electoral arena, it is necessary to control for regionalist parties' regional vote share in national elections. With these vote shares, the distributions of the variables are heavily skewed to the left with many zero values. This is also taken care of by taking the natural logarithm of the variable.

#### **3.6.2 Regional authority**

Research has shown that regional authority impacts how the regional arena contaminates the European arena. Parties' vote share strength tends to increase in European elections in regions with stronger subnational authority (Schakel 2021). The amount of regional autonomy a region has might impact how relevant politics at the regional level is perceived by a voter. It is assumed that the amount of authority that a region possesses, influences how important voters find regionalist issues to be, which then might influence their votes in the various elections. For instance, the stronger the region is, the more authority a region is devolved, the less likely regionalist parties are to spill over from the regional arena to the national or European arena. The reason for this may be that in strong regions, regionalist parties have more autonomy and are able to exert their influence on regional policy decisions and therefore feel less inclined to compete at the national and European levels to campaign for resources and a role in policymaking. Conversely, the less authority a region has, the more regionalist parties have to gain from competing in national and European elections. As such, this is an

important variable to control for, to examine the impact of the electoral system on spillover effects more clearly.

The Regional Authority Index (RAI) measures regional authority in regard to self-rule and shared rule, which each contain five subdimensions<sup>10</sup> (Hooghe et al. 2016). Self-rule implies the authority exercised by a regional government over those who live in the region. Shared rule implies the authority exercised by a region or its representatives in the country as a whole. RAI scores range from 1 to a maximum of 30. Self-rule scores range from 0-18, and shared rule scores range from 0-12.

### **3.6.3 Regional identity**

Secondly, it may also be argued that regional identity affects electoral spillover, by increasing the overall importance of regional issues, which in turn might influence regionalist parties' vote share (Schakel 2018). The stronger the regional identity in the region, the more incentives regionalist parties have to participate in national and European elections, as they can potentially mobilise regional voters by evoking their feelings toward their regional identity (Schakel 2018, 695). To measure regional identity, the Rokkan region variable indicates whether a region has a distinct regional identity (Shair-Rosenfield et al. 2021). The variable ranges between zero and three and consist of several subdimensions. The variable captures whether a majority of regional citizens speak a different language compared to the dominant language in the country. It also depicts whether the region is an island region, meaning that the region is at least 30 km away from any other region within the country. Lastly, the variable measures whether the region was a former state core, which happens first if the region was part of a prior independent state or empire over a period of thirty years since AD1200, and secondly when the region encompasses the capital or core of the prior state or third when at least half of the region's territory was part of a prior state (Shair-Rosenfield et al. 2021).

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<sup>10</sup> The five subdimensions of self-rule are institutional depth, policy scope, fiscal autonomy, borrowing autonomy and representations. The five subdimensions of shared rule include legislative control, fiscal control, borrowing control, executive control, and constitutional reform.

#### **3.6.4 Electoral timing**

Electoral timing has also been shown to influence spillover effects, in particular the electoral cycle and electoral simultaneity. Concerning the electoral cycle, the largest divergence in election results between first and second order elections tend to be found when the second-order election is held at the midterm of the national election cycle (Golder et al. 2017, 5). Regarding electoral simultaneity, turnout seems to increase when elections are held simultaneously, as the costs of casting a vote are reduced (Cancela and Geys 2016, 265). Moreover, simultaneous elections are perceived to weaken second-order election effects (Schakel and Jeffery 2013). This proves that to assess the impact of the electoral system on vertical bottom-up spillover effects, it is crucial to control for the potential impacts of the timing of elections, this is done through two variables electoral timing and vertical simultaneity.

The vertical simultaneity variable measures the extent to which regional elections are held simultaneously with national and European elections (Schakel and Dandoy 2014, 5). Full simultaneity implies that regional, national and European elections take place on the same day, and can for instance be found in Sweden (Schakel and Dandoy 2014, 7). No simultaneity indicates that none of the three elections takes place at the same time (Schakel and Dandoy 2014, 7). As the aim is to examine spillover from the regional arena, I constructed a dummy variable scoring one whether national or European elections were held simultaneously with regional and local elections. The variables score zero when elections are held non-concurrently.

The second important indicator of electoral timing is the placement of a regional election in either the national or European Union electoral calendar, known as the cycle variable. A value of 0 indicates that regional and national or regional and European elections were held on the same day, and 0.99 is that a regional election is held immediately before the national or European election.

#### **3.6.5 Presence in regional parliament**

As already established, the higher regionalist parties' vote shares in the previous regional election, the more likely regionalist parties are to have a stronger vote share in the next national or European election. Related to this element is the fact that being part of the regional parliament can make the party more visible to voters and make it easier for them to enter the

national or European electoral arena. The idea implies that once a regionalist party has won a seat in a previous regional election, how much of this seat share translates into regional vote shares in a subsequent national and European election. Research by Lucardi (2016, 1855) showed that subnational executive offices provided parties with access to resources and increased their visibility among voters, which in turn allowed them to use the subnational parliament as a springboard from which to increase their electoral support in subsequent elections at higher levels of government. Given that the thesis focuses on the number of additional votes needed to win a seat in a national or European parliament once they have already won a seat in a regional parliament in the previous regional election, it does make sense theoretically to control for regionalist parties' regional seat share. To measure this, I created a dummy variable which scores 1 if regionalist parties were present in the regional parliament in the previous regional election and 0 if the regionalist parties were not present in the regional parliament. An overview of the descriptive statistics of all variables used in the analysis of spillover into national and European elections are summarised in Tables 3.7 and 3.8.



**Table 3.7 Descriptive statistics – regional spill over to the national level**

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Median</b>	<b>St.D</b>	<b>N</b>
<i>Dependent variable</i>						
% National vote share	0.00	97.96	16.60	6.26	20.97	497
Natural logarithm	0.00	4.59	1.92	1.98	1.55	497
<i>Independent variables</i>						
Regional vote threshold	225.94	310616.45	38252.56	16915.80	57738.61	491
Logarithm base 10	2.35	5.49	4.13	4.23	0.73	491
National vote threshold	841.75	2465425.60	323009.09	63333.34	635470.78	496
Logarithm base 10	2.93	6.39	4.86	4.80	0.73	496
Vote threshold ratio	0.94	1.65	1.19	1.15	0.14	490
<i>Control variables</i>						
% Regional vote share	0.00	97.96	20.87	13.02	21.09	497
Natural logarithm	0.00	4.56	2.43	2.64	1.33	497
% European vote share	0.00	99.85	10.01	0.00	18.35	497
Natural logarithm	0.00	4.61	1.16	0.00	1.51	497
Cycle	0	1.02	0.44	0.40	0.31	496
Vertical simultaneity	0	1	0.05	0.00	0.22	496
Regional authority	0.00	27.00	20.01	21.50	5.58	496
Regional identity	0.00	3.00	1.09	1.00	1.02	496
Regional parliament	0.00	1.00	0.78	1.00	0.41	497

**Table 3.8 Descriptive statistics – regional spill over to the European level**

<b>Variables</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Median</b>	<b>St.D</b>	<b>N</b>
<i>Dependent variable</i>						
% European vote share	0.00	97.73	13.36	1.80	19.95	305
Natural logarithm	0.00	4.59	1.56	1.03	1.56	305
<i>Independent variables</i>						
Regional vote threshold	271.55	342601.80	45516.61	22037.91	61713.94	302
Logarithm base 10	2.43	5.53	4.32	4.34	0.60	302
European vote threshold	3424.88	1770571	337661.5	211901.5	365832.6	305
Logarithm base 10	3.53	6.25	5.37	5.33	0.37	305
Vote threshold ratio	-0.16	2.56	1.05	1.05	0.55	302
<i>Control variables</i>						
% Regional vote share	0.00	93.73	18.73	21.42	21.42	305
Natural logarithm	0.00	4.55	2.52	2.42	1.36	305
% National vote share	0.00	99.74	13.76	2.80	20.29	305
Natural logarithm	0.00	4.60	1.64	1.34	1.52	305
Cycle	-0.23	1.18	0.37	0.31	0.31	305
Vertical simultaneity	0	1	0.19	0.00	0.39	305
Regional authority	0.00	27.00	19.13	21.50	5.73	305
Regional identity	0.00	3.00	0.90	1.00	0.92	305
Regional parliament	0.00	1.00	0.73	1.00	0.44	305

## **4 Methodological approach**

In this section, I outline how I analyse the regionalist party dataset to assess the hypotheses displayed in chapter 2. The thesis adopts a quantitative research design to examine the impact of the electoral system on regionalist parties' spillover effects from the regional into national, and European elections. I adopt multilevel mixed-effects linear regression models and describe the theoretical and statistical reasons for employing such models, as well as the advantages and disadvantages of the method.

Multilevel linear regression models hold many of the same assumptions as linear regression models. These assumptions include independent observations, the normality of residuals, that residuals are homoscedastic and the absence of multicollinearity between predictor variables (Hox 2013, 9). There are in particular five methodological issues in relation to the dataset which need to be illuminated in relation to the method, these involve the multilevel structure of the dataset, the clustering of observations, multicollinearity, autocorrelation, and outliers.

### **4.1 Multilevel mixed-effects linear regression models**

The model of choice is a multilevel mixed-effects linear regression model using the 'nlme' package in R (Pinheiro et al. 2022). Mixed-effects models refer to the combination of fixed and random effects. The reason for using such models comes from the structure of the dataset, which entail multiple sources of clustering and a hierarchical structure in which elections are nested within regions, which are nested within countries. As the dependent variables are continuous, due to its natural zero point, the distance between the values on the scale is equal, it may be used in a multilevel mixed linear regression model.

Mixed-effects linear regression models allow one to test the effect of several explanatory variables simultaneously, while controlling for the effect of all the explanatory variables. Whilst fixed effects models only assume that data points are independent of each other and only use a single intercept, mixed-effects models incorporate intercepts for each level of a random effect. Fixed effects are the typical main effect as one would observe in linear regression, namely the non-random component of the mixed model. Random effects are the effects specific to an observational unit (Clark 2019).

A random intercept model combines the within-cluster and between-cluster effects and allows one to analyse both the within-cluster and the between-cluster effects of the independent variable. The essential element of a random intercept model is that the intercept is allowed to vary for each cluster (Christophersen 2018, 114), in this instance elections and regions. The regression coefficients are fixed across the clusters, presuming that the impact of the independent variable will be the same for all units. The chosen model do not allow for the slope of the coefficient to vary between the clusters, known as a random slope model, because the hypotheses does not suggest any reasons for why the effects of the vote threshold should vary across clusters. Mixed multilevel regression models can be run with the default restricted (or residual) maximum likelihood (REML) or with maximum likelihood (ML). REML is generally preferred to ML because it can provide unbiased estimates of the variance parameters, however when comparing different model fits, models have to be fitted using maximum likelihood (Maindonald and Braun 2007, 329).

The interpretation of coefficients in a mixed-effects linear regression model is not straightforward when many of the explanatory variables and the dependent variables are transformed by logarithms. A solution to interpret the results is through marginal effects. With continuous independent variables, marginal effects measure the amount of change in the dependent variable  $Y$ , when the continuous independent variable changes by one unit, whilst keeping all other variables at their mean (Williams 2020, 1). Marginal effects provide an informative way to summarize how change in a response is related to change in a covariate (Williams 2020, 4).

#### **4.1.1 Explained variance in multilevel models**

The measurement of the explained variation is far less straightforward in multilevel models than in OLS regression models which use the adjusted  $R^2$ . The two most common estimates of the explained variation in multilevel models are through Akaike's Information Criterion (AIC) and the Schwarz's Bayesian Information Criterion (BIC) (Christophersen 2018, 112). The AIC compares the fit of statistical models which usually are non-nested and by adjusting for the number of parameters estimated. A similar fit index is the BIC, which tends to punish more complex models, which leads to a preference for smaller and less complex models (Hox 2010, 51). Common for both is that smaller values of the AIC and BIC reflect an overall better model fit (Finch, Bolin, and Kelley 2019, 58). When the number of estimated parameters increases, the values of the AIC and BIC tend to increase as well. Despite both

information criteria being suitable to estimate the explained model variance, Hox (2010, 51) claims that AIC is to be recommended for multilevel models.

## **4.2 Theoretical and statistical reasons for multilevel modelling**

The main theoretical reason for using multilevel analyses is presented in the theory chapter (chapter 2) and assumes that regionalist parties' electoral spillover from the regional electoral arena into the national and European arena is a multilevel phenomenon: it may be explained both by region- and country-level characteristics, related to the electoral system. Additionally, I am examining the spillover from the regional arena in a given region, to the same region in national and European elections, resulting in a hierarchically structured dataset. In other words, I assume that the number of additional votes required to win a seat in national and European elections will vary across regions within countries over time. Hence, there is both between-country variation and within-country between-region variation over time. To take these hierarchical levels into account when conducting the analyses, multilevel models are the most suitable.

Multilevel modelling allows for the simultaneous modelling of both intraparty change, namely how a regionalist party changes over time, and the interparty change, which says something about the temporal change across parties (Finch, Bolin, and Kelley 2019, 82). Ignoring the regional level may likely lead us to overstate the importance of countries as a source of variation in regional electoral strength in the national and European arenas. Multilevel models can function as a test of the generalisability of findings. Meaning that findings obtained in one particular context or time period may also apply to other contexts and time periods (Steenbergen and Bradford 2002, 219).

### **4.2.1 Clustering**

The first important element related to the dataset and the multilevel modelling is the clustering of observations. As shown in Table 4.1, the hierarchy of the data can be observed since regionalist parties' vote shares are nested within elections held within regions, which are clustered within countries. A common characteristic of multilevel data is that these clusters share the same cluster-specific influences (Skrondal and Rabe-Hesketh 2004, 49). Accordingly, there is cluster-level unobserved heterogeneity leading to dependence between the units within the same group. This unobserved discrepancy can be modelled by including random effects, either as random coefficient or random intercepts. The former represent

unobserved heterogeneity in the effects of predictor variables on the response variable, whereas the latter represents unobserved heterogeneity in the overall response (Skrondal and Rabe-Hesketh 2004, 50).

**Table 4.1** Overview of levels of the data hierarchy in the datasets

Level number	Level
3	Countries
2	Regions
1	Elections

The assumption of independent observations as required in ordinary least regression models, cannot be sustained when dealing with multilevel data. Since regionalist parties are nested in regions within countries, regionalist parties’ vote share in regional, national, or European elections are likely to be related to their vote share in the previous election and are therefore not independent across time (Finch, Bolin, and Kelley 2019, 29). Assuming that observations are independent, it could result in less precise standard errors and spuriously significant results (Hox 2010, 4-5). Ignoring the multilevel data structure can lead to the underestimation of standard errors, but it can also lead researchers to overlook important correlations involving each level in the data (Finch, Bolin, and Kelley 2019, 29).

By using mixed regression models, we can control for the clustering of the data and produce more reliable estimates and standard errors, than standard OLS regression models. Concerning dependent observations, the benefit of multilevel models with random intercepts (regions and elections), is that the design takes into account dependent observations such as regionalist parties’ vote shares in elections over time.

Since the models consider clustering by region, clustering by country should also be captured as all the countries in the sample are composed of those regions. Given that there are only eleven countries in total, it means that the third level has very few observations. According to Christophersen (2018, 109), there should be at least 30 level 2-units and at least 30 level 1-units within each level 2-unit to account for multilevel models. Others claim that this requirement is misguided because multilevel regression models will perform better than OLS regression models which would disregard the intra-class correlation present in the hierarchical data (Gelman and Hill 2007, 275). Given that 302 European elections are clustered in 58

regions and 496 national elections are clustered in 58 regions, it is sufficient to assume that this exceeded the number of units required to proceed with multilevel linear regression models. However, there are too few countries in the sample to also consider clustering by country.

The most common way of testing the homogeneity of the level-1 units, is by measuring the Intra-Class Correlation (ICC). How large part of the variance to the dependent variable which can be attributed to the level 2-units and level 3-units, indicates whether a multilevel analysis is relevant (Christophersen 2018, 109). Level 2- and 3-variance implies that the constant term (the average of the dependent variable) varies between the level 2- and 3- units, which is also known as between-group variance. The variance which cannot be attributed to the elections and regions, constitutes the residual variance. Christophersen (2018, 111) claims that the ICC value should exceed a certain level and sets the threshold at 0.05, to rationalize the use of multilevel regression models. Nezlek (2011, 53-54) on the other hand claims that the ICC shows little or nothing about how relationships between two variables might vary between groups, and that multilevel data implies the use of multilevel models no matter the coefficient of the ICC. The ICC can show the extent to which regionalist parties' vote shares vary within regions in countries. Each level-3 unit (country) and level-2 unit (region) may have a specific culture or environment which have a homogenising effect on the level-1 units (elections). Level-1 units within the same level 2-unit or 3-unit are more similar than level 1-unit from different level 2- and 3 units. This homogenisation contributes to making the observations dependent on each other (Christophersen 2018, 107).

The ICC is an indicator of the degree to which the multilevel data structure might impact the outcome variable of interest (Finch, Bolin, and Kelley 2019, 28). Since regions are nested in countries, it is possible to estimate the correlation among regions vote share within the cluster using the intraclass correlation. Given that there are two aggregate-level datasets used for the analyses, there are two estimates, one for the regional spillover into national elections, and one into European elections. The empty model contains one constant term, and variance at the regional level. To examine whether the grouping variable at the regional level significantly affects the intercept mean of the dependent variable, the national or European vote share at the regional level. This is an empty model containing only random intercepts (Finch, Bolin, and Kelley 2019, 44).

The European empty model (shown in table 4.2) reveals an ICC value of 0.873 indicating the importance of the hierarchical data structure when examining spillover from the regional to the European level. The value indicates that 82.6 percent of the variation in vote share strength in European elections is between regions within countries, whilst 17.4 percent is within regions within countries. The model shows that the results violate the independence assumption as required by the OLS regression and therefore indicate the need for multilevel modelling.

**Table 4.2** Estimates for empty model

	European vote share strength	
	Estimate	Std. Error
Constant	1.320***	0.195
ICC	.826	
AIC	785.772	
BIC	796.933	
N (elections)	305	
N (regions)	56	
N (countries)	10	

*Note:* \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 4.3 shows the correlation of regionalist parties’ vote shares in national elections in regions within countries is approximately 0.759. This value suggests that 76 percent of variation can be found at the regional level and thus indicates that multilevel modelling needs to be employed further in the analysis. Both estimates show that there is substantial variation present at the region- and country-level suggesting that regionalist parties vote share strengths vary significantly between regions in countries. It also underlines the need to continue to study the correlation between the electoral system and spillover effects using multilevel linear regression models.



**Table 4.3** Estimates for empty model

	National vote share	
	Estimate	Std. Error
Constant	1.584***	0.179
ICC	.759	
AIC	1298.338	
BIC	1310.964	
N (elections/vote shares)	496	
N (regions)	58	
N (countries)	11	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**4.2.3 Autocorrelation**

Autocorrelation is another element to be aware of in relation to the independence of observations. According to Christophersen (2018, 77), the values of the unit at one specific point in time are often conditioned by the values of the corresponding unit at an earlier point in time. Concerning longitudinal multilevel data, it is useful to differentiate between repeated measures that are collected on fixed or varying occasions (Hox 2011, 85). In this instance we are dealing with varying instances as election results are collected at different points in time for different parties, as countries and regions hold elections at different times and with different cycles. It is necessary that a model takes into account that a party’s vote share in a 2015 election is related to their vote share won in the 2011 election. Additionally, one party’s vote share in a given region and election is influenced by the vote shares obtained by other parties within the same region and election. For such repeated measures, we may assume that there will be autocorrelation in the data. However we may assume that vote shares in elections held closer together in time have a higher correlation than in elections held further apart (Hox 2010, 101).

The potential autocorrelation between data points does not alter the direction of the regression coefficients, however, the coefficient variance may increase which may result in biased p-values and standard errors. A Durbin-Watson was executed to check for autocorrelated residuals and revealed a p-value < 0.05 for spillover into national and European elections, which indicates that residuals are autocorrelated. However, this is to be expected as vote shares and elections are correlated. To resolve the issue of autocorrelation, I run linear mixed-

effects models with an autoregressive error structure, with elections as the timing variable and regions as the grouping variable, as elections are nested in regions. This model allows for nested random effects, whilst also handling temporal correlation structures in the data.

I also included a lagged dependent variable (t-1) to control for the spatial correlation. A lagged dependent variable will contribute to control for the autocorrelation however, it might make the explanatory effect of the electoral system much smaller, as a majority of the parties vote share in national or European elections is influenced by their previous national or European vote share. A limitation of a lagged dependent variable is that it alters the interpretation of the results and may suppress the effect of the explanatory variables in the model, in this case the vote threshold ratio.

#### **4.2.4 Multicollinearity**

An assumption which applies to analysing multilevel data is the claim of the absence of multicollinearity, namely that explanatory variables are not correlated with each other. This can be checked by estimating the variance inflation factors (VIF) between the independent variables, which tells something about the percentage of the variance is inflated for each coefficient. The VIF has a minimum value of 1, and there is disagreement regarding which limit value of the VIF scores, some argue that ten is the limit whereas others claim that values as low as four are the limit (O'Brien 2007, 674). For both spillover into national and European elections, there is low levels of multicollinearity between the variables. The VIF scores of the main independent and control variables can be found in Table B1 in Appendix B.

The Pearson's correlation coefficient tells us the strength and direction of the association between the independent and control variables in the analysis, as shown in Tables B2 and B3 in Appendix B. The closer a value is to one, the stronger the correlation between the two variables, whereas the closer a value comes to zero, the less correlation there is between the variables. In table B2, the regional vote share is moderately correlated to the previous regional vote share in a European election. Regional parliament is also moderately correlated to the regional vote share. In table B3, regionalist parties' previous regional vote share and national vote share are quite highly correlated with a coefficient of 0.80. Yet, none of these correlations are worrying, as we know that vote shares in different electoral arenas impact each other, and the seat shares and vote shares are parts of the same dynamics. Overall, the

coefficients between the independent and control variables do not indicate significant correlation in either of the datasets.

#### **4.2.5 Outliers**

Multilevel linear mixed effects models also require normality of residuals and that residuals are homoscedastic. However, when outliers are present, data may become skewed rather than normally distributed and may therefore impact the accuracy of the parameters estimated including coefficients and standard errors (Finch, Bolin, and Kelley 2019, 190). Outliers are a particular issue when the data comes from heavy-tailed distributions as was shown with the dependent variables in Chapter 3. To test for heteroscedasticity of residuals, a Breusch-Pagan test was run to test whether the model errors have constant variance. The test revealed that the error variance is homoscedastic, hence the assumption of homoscedasticity is upheld, as shown in Figure B4 in appendix B.

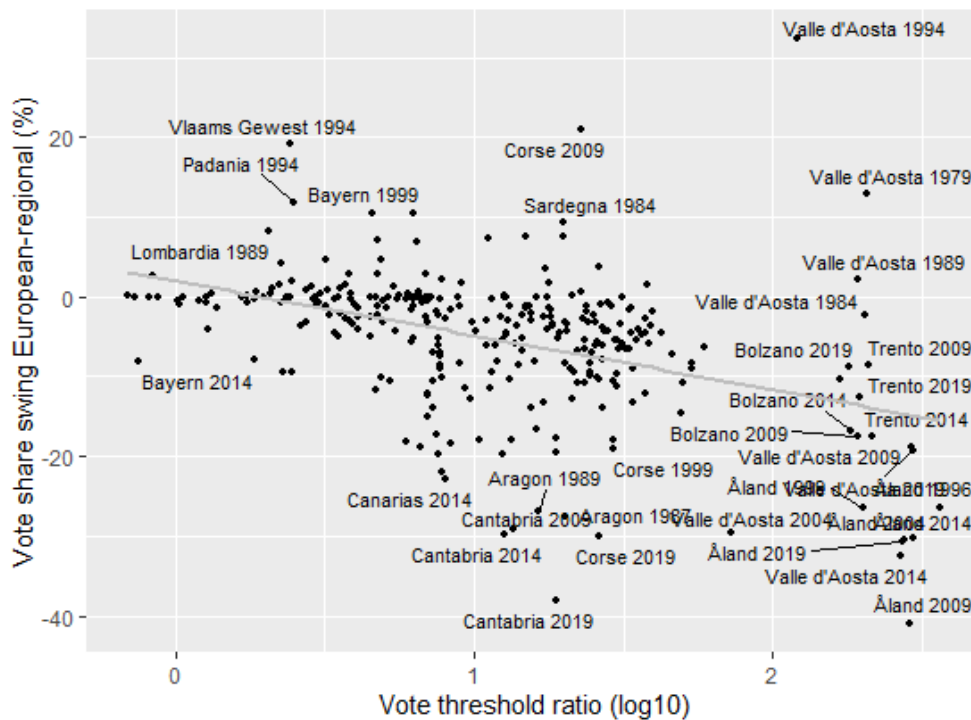
The Shapiro test checks the studentized residuals for normal distribution and can be visualised through a QQ-plot (see Figure B5 in Appendix B). The plot revealed a distribution with somewhat heavy tails, which indicates that the data may have more extreme values than would be expected if the sample came from a completely normal distribution, which may indicate that the data is somewhat overdispersed (Meuleman, Loosveldt, and Emonds 2014, 99-100). One way of dealing with the treating the distribution has been by transforming the vote share variables by taking the natural logarithm plus one to create a more equally distributed sample. The fact that these variables are not completely normally distributed despite the logarithm transformations, maybe because more extreme values are causing the non-normality of the residuals. This may lead to standard errors being underestimated and as a result, a variable may appear to be a significant factor when it is not.

The next step then involves identifying potential outliers in the dataset. Outlying observations are observations in the dataset which seems to be inconsistent with the remaining of the observations in the data, relative to the assumed model (Langford and Lewis 1998, 121). Failing to identify outliers may lead to wrong results and a lower model performance. Outliers may be caused by measurement errors, faulty data collection or wrong data entries, or they might be due to the natural variation of the data points. Nevertheless, excluding an outlier from the dataset should be a very careful decision as it in many instances can be difficult to

distinguish between noise and outliers. Some argue that one should not remove an outlier whether one is completely sure it is a measurement error. Hence, keeping the outliers may also provide a better understanding of the dataset. The process of identifying and deleting outliers should be a very cautious action, which requires a great deal of thought.

In hierarchical and time-series cross-sectional data structures which are more complex, the concept of an outlying observation becomes less clear (Langford and Lewis 1998, 122). In a multilevel model, one may want to know at what levels a particular observation is outlying. In this instance, regions nested within countries, and either regions or countries may be considered as being an outlier at their particular levels in the model. If a country is found to be an outlier, one needs to figure out whether it is incongruous due to a systematic difference affecting all regions measured within the country, or because one or two regions are responsible for the discrepancy. At the region level, a group of regionalist parties may be outlying due to a general relationship found across all regions or be an outlying observation only in the context of the regionalist parties' particular region.

There are several approaches available to examine which observations are deemed to be influential data points. One approach involves using Cook's distance to identify and remove outliers from the dataset. The Cook's distance is a standardised average squared difference between two sets of coefficients (Berk 2004, 160). Observations reported by the Cook's distance need to be evaluated as to whether they should be included or not in the analysis. Instead of excluding certain outliers right away, which is a cautious process, my approach is more subjective, where a data point is considered to be an outlier, when its value clearly differs from the rest of the data points. This is done through the visualisation of scatterplots of the vote share swings between a national and a regional election or a European and a previous regional election. The reason to look at the vote share swing, despite it not being the dependent variable in the analysis, is because it more clearly shows which cases where regionalist parties win a larger vote share in one of the elections compared to the other. The vote share swing is calculated by subtracting the regional vote share percentage from the regional vote share percentage in a national or European election.



**Figure 4.1** Scatterplot of the vote share swing and the vote threshold ratio

*Notes:* Shown is a scatterplot of the relationship between the vote share swing between a European and previous regional election (y-axis) and the vote threshold ratio (x-axis). The vote share swing is shown in percentages and the vote threshold ratio is shown in the logarithm transformed version.

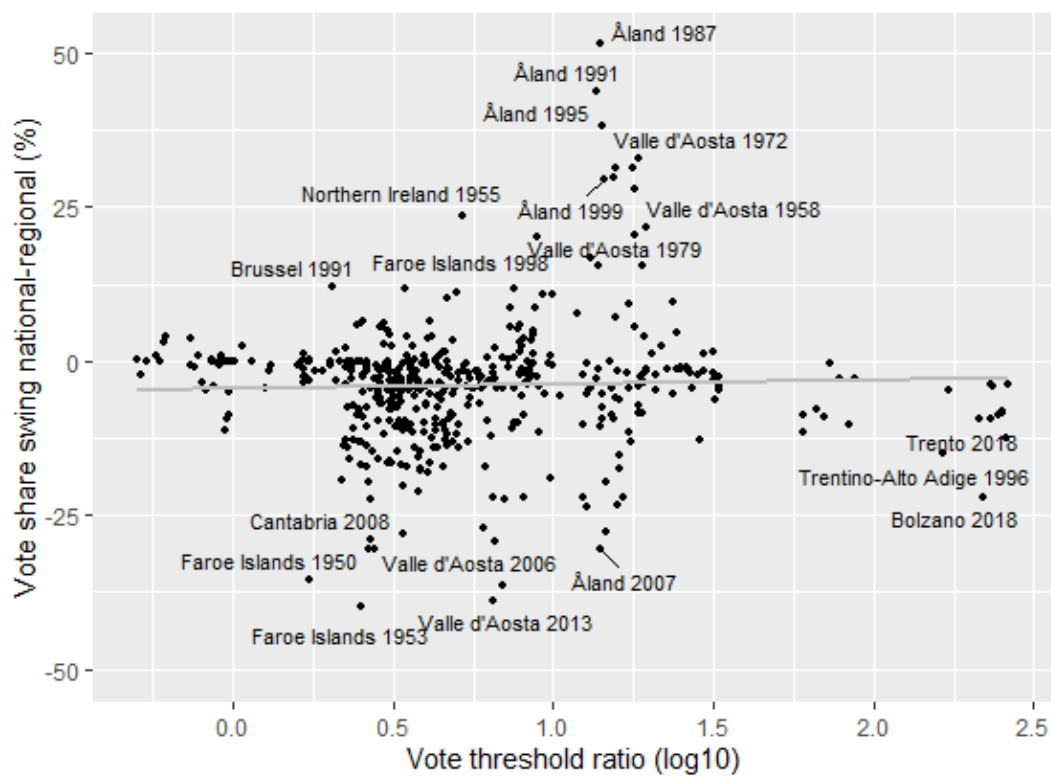
Figure 4.1 shows a scatterplot of the relationship between the vote share swing in a European and previously held regional election and the main independent variable, the vote threshold ratio. The plot indicates some observations which may be outliers such as elections in Valle d’Aosta in Italy, Åland in Finland, Cantabria in Spain, and Corsica in France. The boundaries for the outliers were therefore set at vote share swings that are larger than minus 20 percent, and above plus 15 percent, as these observations stand out compared to the majority. This reduces the number of observations from 302 observations to 283, and seven percent or 22 observations are removed from the dataset. The observations are shown in table 4.4. What is interesting is to understand why these observations are outliers in the first place, and I use the information from the party-level dataset to get more information on which vote shares were summed which may create the large vote share swings. The party-level dataset reveals that a majority of these outliers are caused by the way vote shares are administered in relation to alliances, but also due to the competition pattern of regionalist parties in European elections.

**Table 4.4** Overview of outliers removed from the European dataset

Vote share swing European-regional	Observations removed
Positive vote share swing > 15 %	Valle d'Aosta 1994, Corse 2009, Vlaams Gewest 1994
Negative vote share swing > 20 %	Åland 2009, Cantabria 2019, Valle d'Aosta 2014, Åland 2019, Åland 2004, Åland 2014, Deutsche Gemeinschaft 1979, Corse 2019, Cantabria 2014, Valle d'Aosta 2014, Deutsche Gemeinschaft 1984, Cantabria 2009, Aragon 1987, Aragon 1989, Åland, 1996, Åland 1999, Canarias 2014, Canarias 2004, Deutsche Gemeinschaft 1989

The positive vote share swing in Corsica in 2009 is caused by a regionalist party winning a large vote share at the European level as the vote share cannot be broken down to each individual party, whilst winning a much smaller vote share in the previous regional election. Partidu di a Naziune Corsa (PNC) was part of an alliance with Europe Ecology and the Greens in the EP election, and the total regional vote share of 24 percent was given to the regionalist party as the party obtained a seat in the European Parliament. However, in the previous regional election, the party only obtained three percent of the regional votes, which then in comparison creates a large positive vote share swing.

The reason for the negative vote share swings in Åland is because regionalist parties did not participate in the European elections whilst competing in all previous regional elections. By excluding these outliers, Åland is removed from the sample completely. In Valle d'Aosta, Corsica, Cantabria, and Aragon these vote share swing discrepancies are caused by regionalist parties winning a much larger vote share in regional elections than they are able to at the European level. These are regions with many strong regionalist parties, so in regional elections they often win between 30 and 50 percent of the votes. Whereas in European elections they have to form alliances or not all regionalist parties compete at the European level, so the vote share is much lower in comparison either because a party did not compete or the vote share cannot be broken down due to there not being any seat shares available. The party-level dataset thus shows that these observations are outliers, but it also shows that there often are alliances at the European which can or cannot be broken down whilst in regional elections alliances can which then in comparison can create large vote shares comparisons. The next section evaluates possible outliers in the dataset of spillover into national elections.



**Figure 4.2** Scatterplot of the vote share swing and the vote threshold ratio

*Notes:* Shown is a scatterplot of the relationship between the vote share swing between a national and previous regional election (y-axis) and the vote threshold ratio (x-axis). The vote share swing is shown in percentages and the vote threshold ratio is shown in the logarithm transformed version.

As figure 4.2 illustrates, there are some clear outlying observations, therefore the boundaries for the vote share swings between national and regional elections were set at minus 23 percent and plus 15 percent. This reduces the number of observations from 497 to 466, as such 31 observations were removed, which is six percent of the sample. The observations are shown in table 4.5.

**Table 4.5** Overview of outliers removed from the national dataset

<b>Vote share swing national-regional</b>	<b>Observations removed</b>
Positive vote share swing > 13 %	Åland 1987, Åland 1991, Åland 1995, Valle d'Aosta 1972, Åland 1979, Åland 1999, Valle d'Aosta 1987, Northern Ireland 1955, Valle d, Aosta 1958, Valle d'Aosta 1979, Faroe Islands 1998, Valle d'Aosta 1994, Padania 1994, Valle d'Aosta 1992
Negative vote share swing > 23 %	Faroe Island 1953A, Faroe Island 1953B, Valle d'Aosta 2013, Valle d'Aosta 2006, Faroe Islands 1950, Åland 2007, Cantabria 2015, Cantabria 2016, Valle d'Aosta 2008, Cantabria 2008, Euskadi 2008, Åland 2019, Valle d'Aosta 2018, Åland 2011, Deutsche Gemeinschaft 2019

Some regions stand out quite clearly, namely the very small regions of Faroe Islands in Denmark, Valle d'Aosta and Åland. When looking closer at these observations in the party-level dataset, it becomes apparent that these observations have large vote share swings because the party either won a very large vote share in the national election or the regional election. These instances can mostly be explained by how the electoral system plays out in the region as well as alliance formations. Both Åland and Valle d'Aosta are regions there is a proportional system in national elections, however due to there being only one seat up for election, it produces a two-party system, where parties are strongly pressured to participate in alliances to be able to win a majority of the votes in the region and consequently the seat. This two-party system with one seat at the national level might make voters come together and either vote for a regionalist or non-regionalist party in national elections. Hence regionalist parties may gain either a large vote share or a much smaller one. In regional elections, there is no need for such mobilisation of the voters because more parties can compete for several seats, which leads to less coalition formation and the seats and votes are more dispersed between the parties. These comparisons can then reveal large vote share swings.

When administering such election data with only one seat, there is no way of breaking up this vote share to the parties participating in the alliance. The whole vote share percentage is given to one of the parties partaking in the alliance and is not a realistic estimate of the parties' vote share. However, given that elections are secret and there are no post-election surveys which ask voters which party within the alliance they voted for, there is no way of breaking down the vote share. This will in many cases result in large vote share swings between the national



election and the previously held regional election, which ultimately become outliers in the dataset. This is also an issue when no seats were obtained, the vote share cannot be broken down, but rather given to the senior party of the alliance, which may create vote share swings.

Regarding the negative vote share swings, there are some potential outliers as well, such as Faroe Islands, Cantabria, and Valle d'Aosta. The main reason for these large discrepancies in vote shares is because of regionalist parties' competition in various elections. These discrepancies are caused when a regionalist party competes in a regional election, but not in a national election. Hence the comparison between the election reveals a large difference in vote share. For instance, in the national elections in Cantabria in 2015 and 2016, PRC won 30 percent of the regional votes in the previous regional election in 2015, however the party did not compete in the 2015 and 2016 general elections, but in the 2019 elections. This causes a large vote share swing as a 30 percent vote share is compared to a zero. This party is the only regionalist party in the Cantabria, and the party seems to compete in all regional elections, but not in all national elections.

Despite the large vote share swings in many instances not being caused by coding issues, but rather by the electoral system and the coalition formations, one might argue as to whether one should exclude these outliers. However, these observations differ from the majority of observations, hence they can create noise in the estimations. Therefore, I decided to fit two models, one with the outliers and one without the outliers, to examine how the models compare. This approach allows the evaluation of the differences between the models, rather than relying merely on the statistical measures of influence. The reduced dataset is the preferred dataset as this provides a more realistic picture of the spillover effects as observations in very small regions and regions with inconsistent party competition are removed due to these observations creating large vote share swings potentially disturbing the model estimations. However, as shown with information from the party-level dataset, the electoral system impacts regionalist parties' spillover through parties being forced to form alliances at the national and European level to be able to obtain representation.

### **4.3 Robustness analyses**

This section has pointed out some issues concerning the dataset and the methods which further can be investigated through different robustness analyses. Robustness analyses are tests made to test whether the results found in the analyses are reliable. Hence, it involves checking whether the findings are robust to the possibility that any of the assumptions underlying the models might not be true. To account for the fact that one can also operationalise electoral spillover as the vote share swing between a national or a European election and a regional election, I run robustness analyses with the vote share swing as the dependent variable. The benefit of running such analyses is because it allows us whether the results remain robust when applying different operationalisations of the dependent variable.

To acknowledge the low number of country-level units in the sample, I run robustness models with country-dummies to control for the between-country variance through fixed effects. The fixed effects control for characteristics of countries that remain stable over time and therefore allow for the focus on variation within and between regions over time. However, a drawback of such models is that by controlling for the variation between countries the model estimates may underestimate the effect of the independent variable especially if the vote threshold ratios do not change drastically over time.

Next, I also run robustness models with the non-logarithm transformed values of the vote share variables. This means that the model includes the percentage of the vote shares rather than the transformed, for the dependent vote share variables, but also the vote shares being controlled for in the model. The benefit is that this allows one to compare the models with the transformed vote shares and discuss the potential difference. A drawback with this type of model is that the vote share percentages are not normally distributed which may then alter the estimations of the model, which is necessary to be aware of when examining the results.

A robustness model with a lagged dependent variable is introduced to further control for the autocorrelation between the observations in the dataset. By including a lagged dependent variable, one can take into account the over-time dependencies of regionalist parties' vote shares. It makes sense to include a lagged dependent variable, because one can expect that regionalist parties' current vote share in a national or European election is heavily determined by its past vote share in the previous election. However, the lagged dependent variable may take out a lot of model variance and suppress the explanatory power of the independent

variables included, for instance the vote thresholds (Frank and Martínez i Coma 2021). It will allow one to say that those independent variables that still influence the outcome have an effect controlling for the past value of the dependent variable.

Given that regionalist parties are a party family which shares many similarities to probably regionalist and regional parties. I run models with these parties' vote shares to examine whether the results remain the same for similar types of parties. These parties include probably regionalist and regional parties. As mentioned, the defining criteria for regionalist parties are that they have a position on the centre-periphery dimension, where their position may range from autonomist to secessionist (Masseti and Schakel 2016). However, with probably regionalist parties, one assumes that they are regionalist, but there is no information to confirm what position they have on the centre-periphery dimension, hence they are coded as probably regionalist. The definition of regional parties is parties that only compete in one region in a regional election. The difference between regional and regionalist is that regionalist parties have a position on the centre-periphery dimension and may compete in more than one institutional region.

What needs to be noted is that the election data for probably regionalist and regional parties were only collected at the aggregate level meaning that their vote shares were summed by election year. As the dataset developed for this thesis focused on regionalist parties, the data on regional and probably regionalist parties were not collected in such detail especially with regards to which region was their core region. This in turn leads to horizontal spillover effects not being controlled for. Therefore, when probably regionalist and the sum of parties' vote shares was aggregated, there was no way of administering whether vote shares one outside of the parties' core region. As such, there may be some possibility of horizontal spillover for certain parties, as we cannot control whether the vote share is won in the same region at both levels. However, this is not an issue for regional parties, as the definition for these parties is that they are regional, i.e., they only compete in one institutional region within a country. Nonetheless, if the results remain the same in these models, then one can be more certain as to whether the results can be verified.

## 5 Analysis and results

The purpose of the analysis is to examine how the permissiveness of the electoral system, as measured through the vote threshold ratio impacts regionalist parties' spillover from the regional electoral arena into national and European elections. The main analysis section is divided into two parts. The first concerns regional spillover into European elections, whereas the second section, concerns regional spillover into national elections. The analyses present several models and compare a reduced model with the dataset where outliers were removed with a full model where outliers are included, to ensure that one can properly discuss the results in light of the influence of outliers.

### 5.1 Regional spillover into European elections

The first step of the analysis entails to examine how the vote threshold ratio, i.e., the additional number of regional votes needed to win a seat in the European Parliament compared to the regional, impacts regionalist parties' regional vote share strength in European elections. When looking at spillover from the regional arena into European elections, regionalist parties' vote shares are summed in 306 elections in 56 core regions in ten countries<sup>11</sup>.

The reduced model A in Table 5.1 shows how the vote threshold ratio has a negative significant effect at the 0.05 level on regionalist parties' regional vote share strength in European elections. This suggests, in line with hypothesis 1a, that the larger number of additional regional votes needed to win a seat in the EP compared to the regional parliament, the less probable regionalist parties are to have a strong regional vote share at the European level. The model also reveals that the regional vote share in the previous regional and national elections has a significant positive role in explaining the extent to which regionalist parties spill over into European elections. The full model A also depicts how the vote threshold ratio is statistically significant at the 0.10 level, also confirming hypothesis 1a. This suggests that once certain outlying observations are excluded, the significance of the vote threshold ratio becomes more apparent.

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<sup>11</sup> Given that Switzerland is not part of the European Union, there is one less country in the sample measuring spillover into European elections.

The second model introduces a two-way interaction between the vote threshold ratio and the regional vote share won in previous regional elections. This is done to examine whether regionalist parties' vote share in the previous regional election impacts how the ratio affects their regional vote share at the European level. In reduced model B, the interaction has a positive predicted sign; however, the effect is not significant, this result is also found in full model B. Hypothesis 2a expected that the ratio would have a smaller effect on regionalist' parties with a larger vote share in the previous regional election and a larger effect on parties with a smaller vote share, but the model reveals that that is not the case. In the reduced model with the interaction, the vote threshold ratio still has a significant negative effect, further indicating that the higher number of additional votes needed to win a European seat, the less likely regionalist parties are to have a strong regional vote share at the European level. Hence, the reduced model, which is the preferred model confirms the results found in the full model, which strengthens hypothesis 1a.

The reason why the effect is statistically significant at a higher level in the reduced model as opposed to the full model might be because the vote threshold ratio is potentially not able to capture the jump from the regional arena into the European arena through the number of additional votes. The qualitative evidence from the party-level dataset revealed that regionalist parties in the outliers in general win a much larger vote share at the regional level than they are able to at the European level. At the European level, they appear to be strongly pressured to participate in alliances to be able to win a seat, and they can either win quite a large vote share if the regionalist party is the senior partner of the alliance, or a zero-vote share if the party is the junior party. Hence it indicates that the permissiveness of the electoral system can have an important effect on spillover into the European level, however, the vote threshold does potentially not pick up on this effect as the jump is so large from competing at the regional level to competing at the European level. The effect of the vote threshold ratio is further explored through marginal effects.

**Table 5.1.** Explaining regionalist parties' regional vote share strength in European elections

	Reduced model		Reduced model		Full model A:		Full model B:	
	A: Vote		B: Interaction		Vote threshold		Interaction	
	threshold ratio				ratio EU			
	EU							
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.335**	0.111	-0.552**	0.195	-0.322*	0.132	-0.346	0.201
Vote share in previous regional election	0.464***	0.077	0.373***	0.101	0.288***	0.067	0.322**	0.201
Ratio*vote share prev. regional election			0.103	0.073			-0.013	0.071
<b>Control variables</b>								
Vote share in prev. national election	0.565***	0.055	0.555***	0.056	0.500***	0.053	0.471***	0.051
Cycle	0.309*	0.136	0.311*	0.136	0.270	0.142	0.274	0.143
Vertical simultaneity	0.316**	0.113	0.324**	0.113	0.265*	0.126	0.303*	0.121
Regional authority	-0.005	0.010	-0.002	0.011	-0.043**	0.016	-0.012	0.014
Regional identity	0.056	0.073	0.064	0.074	0.203*	0.085	-0.012	0.014
Regional parliament presence	-0.125	0.138	-0.103	0.139	0.103	0.143	0.110	0.149
Intercept	-0.017	0.210	0.082	0.220	0.636	0.395	0.290	0.279
<b>Model statistics</b>								
Log likelihood	-255.849		-256.648		-311.454		-316.001	
ICC	.463		.426		.630		.630	
AIC	539.700		543.295		650.908		656.330	
BIC	590.736		597.437		702.430		711.482	
Phi	0.268		0.279		0.228		0.228	
Variance elections	0.00		0.00		0.07		0.07	
Variance region	0.25		0.22		0.55		0.54	
N (elections)	283		283		302		302	
N (regions)	55		55		56		56	
N (countries)	10		10		10		10	

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are the results of four multilevel mixed linear regression models, where vote shares are clustered in regions which are clustered within countries. Regionalist parties' regional vote share in European elections (natural logarithm) is the dependent variable. The models contain an autoregressive error structure to control for autocorrelation between elections within regions.

### 5.1.1 Marginal effects

Marginal effects help portray what the effect of a change in the main dependent variable has on the outcome variable, as the model coefficients offer little explanation as to the magnitude of the effects found. Typically, one standard deviation below and above the mean is used when examining the marginal effects of certain predictor variables on the dependent variable. However, this measurement relies on a normal distribution. The interquartile range is a more robust measure of the variance in the dataset. Outliers do not have such a critical impact on the interquartile range because the measurement does not rely on every value in the range (Frost 2020, 89). For more skewed distributions, the interquartile range is a more suitable measurement. Hence, the interquartile range along with the median is used to examine the predicted values of regionalist parties' regional vote share strength in European elections.

Predicted vote shares were generated at the interquartile range of the vote threshold ratio, as the other independent and control variables were held at their median. Shown in Table 5.2 are the results from the reduced model and the full model, to further examine how the outliers influence the estimations. With the results from the reduced model, regionalist parties are predicted to decrease their regional vote share in European elections from 4 percent to 3.5 percent, as they need from five times as many to 25 times as many votes to win a European seat. Hence their vote share is assumed to decrease by approximately one percent within the region, which is significant as this might indicate whether they are strong enough to be able to continue competing in European elections. With the results from the full model, parties are presumed to decrease their vote share from seven percent to five percent, as the ratio increases. With linear regression models, it can normally be assumed that the change in marginal effects is significant if the variable is significant in the model upon which the predictions are based. These results further strengthen hypothesis 1a. The differences in findings do make sense as once certain outliers such as Corsica and Valle d'Aosta are removed, where parties received either a quite large or small European vote share, the marginal effects decreases, which potentially gives a more reliable picture of regionalist parties' regional vote share strength at the European level.

**Table 5.2** Predicted values of European vote share strength

<b>Vote threshold ratio</b>	<b>Predicted regional vote share in European elections</b>	<b>Predicted regional vote share in European elections</b>
Ratio (log10)	(Reduced model)	(Full model)
4.79 (0.68)	4.39 %	6.96 %
7.24 (0.86)	4.14 %	6.49 %
11.22 (1.05)	3.86 %	6.05 %
16.60 (1.22)	3.67 %	5.70 %
24.55 (1.39)	3.46 %	5.37 %
Change	-0.94 %	-1.59 %

*Notes:* Shown are regionalist parties predicted regional vote shares at the European level when the vote threshold ratio between European and regional elections moves from one quartile below to one quartile above the median. The ratio is shown in its untransformed and logarithm transformed value (in brackets). Vote shares are shown in percentages. Covariates are set at their median value. The predictions are based on estimates from the reduced and full model A (see table 5.1).

### 5.1.2 Robustness analyses

There is a need to assure the robustness of the analyses conducted, to examine whether the negative vote threshold ratio remains significant when running various robustness models (see Appendix C). First, the results seem to be consistent when using the vote share swing between regional and European elections as the dependent variable, as shown in the reduced model and the full model in Table C1. The ratio has a statistically significant effect in both models, further confirming hypothesis 1a. Similarly, when introducing a lagged dependent variable (Table C1), both the reduced and the full models confirm the significance of the vote threshold ratio in explaining spillover into European elections. Overall, these results further strengthen the hypothesis that the higher number additional votes needed to win a European seat, the less likely regionalist parties are to have a strong regional vote share in European elections.

The next robustness check controls for the country effects, due to the low country sample in the dataset, and is shown in Table C2. The first reduced and full models reveal that the vote threshold ratio is statistically significant and further verify the findings of the analysis. Concerning the interaction between the vote threshold ratio and the previous regional vote share, neither the reduced nor the full model confirms hypothesis 2a, hence underlining the results from the original models.



The next robustness model examines the effect of the vote threshold ratio on the non-transformed regionalist parties' vote shares in regional, national, and European, as the vote share is in percentage rather than logarithm transformed (see Table C3). The reduced and full models further indicate that the vote threshold ratio has a negative effect on regionalist parties' regional vote share in European elections, further strengthening hypothesis 1a. As has previously been found, the interaction does have a statistically significant effect on European vote share strength.

The last robustness check examines whether the vote threshold ratio has a significant impact on parties similar to regionalist parties, namely probably regionalist parties (model A), regional parties (model B), including a combination of regionalist, probably regionalist and regional parties (model C), as shown in Table C4 in Appendix C. The effect of the vote threshold ratio is only statistically significant for probably regionalist parties, whereas for regional and all parties, the ratio is non-significant. Given that these models do not control for horizontal spillover, this may bias the results. Often regional parties are quite small, and this may explain the non-significant effect as these parties may rarely attempt to compete at the European level. These models may also include outliers which bias the estimates producing non-significant results. Yet in general, the majority of results of the robustness models confirm the results from the reduced and full models, strengthening the results.

## **5.2 Regional spillover into national elections**

The findings have revealed that the vote threshold ratio does impact the spillover of regionalist parties' regional vote share into their regional vote share in European elections. The following analysis examines the impact of the vote threshold ratio on regionalist parties' regional electoral strength at the national level.

Reduced model C and full model C in Table 5.3 examine the impact of the vote threshold ratio between regional and national elections on electoral strength at the national level. In the reduced model, the ratio has a negative coefficient statistically significant at the ten percent level, whereas, in the full model, the ratio is not significant. These differing results reveal the importance of the outliers in influencing the estimates. Once six percent of the observations are excluded, the impact of the ratio becomes statistically significant. This indicates that for the outliers removed, the vote threshold ratio is potentially not able to pick up on how difficult it is to spill over into the national arena. The results of the reduced model confirm hypothesis

1b and indicate that the higher number of additional votes needed to win a national seat compared to a regional seat, the less probable regionalist parties are to have a strong regional vote share in national elections.

Reduced model D and full model D introduce an interaction effect between the vote threshold ratio and regionalist parties' vote share in the previous regional election. The interaction has a negative effect in both models but does not reach statistical significance, as such there is no evidence that supports hypothesis 2b. There is no evidence of whether the ratio impacts regionalist parties' regional vote share in the national election, depending on their vote share in the previous regional election.

**Table 5.3** Explaining regionalist parties' regional vote share strength in national elections

	Reduced model		Reduced model		Full model C:		Full model D:	
	C: Vote		D: Interaction		Vote threshold		Interaction	
	threshold ratio				ratio nat-reg			
	nat-reg							
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.241*	0.120	-0.170	0.207	-0.176	0.127	0.010	0.213
Vote share in prev. regional election	0.444***	0.058	0.457***	0.072	0.361***	0.060	0.404***	0.076
Ratio*vote share prev. regional election			-0.033	0.078			-0.085	0.079
<b>Control variables</b>								
Vote share in prev. European election	0.143***	0.036	0.144***	0.036	0.158***	0.037	0.158***	0.037
Cycle	0.077	0.104	0.076	0.104	0.097	0.107	0.093	0.107
Vertical simultaneity	0.083	0.196	0.083	0.196	0.116	0.208	0.112	0.208
Regional authority	-0.002	0.013	-0.003	0.013	-0.005	0.013	-0.007	0.014
Regional identity	0.334**	0.105	0.339**	0.107	0.419***	0.116	0.423***	0.120
Regional parliament presence	0.095	0.127	0.096	0.127	0.103	0.134	0.106	0.134
Intercept	0.317	0.273	0.325	0.315	0.338	0.296	0.304	0.307
<b>Model statistics</b>								
Log likelihood	-454.993		-455.564		-516.275		-517.365	
ICC	.774		.773		.610		.850	
AIC	937.985		943.100		1060.551		1064.73	
BIC	995.762		1005.003		1118.954		1127.275	
Phi	0.277		0.279		0.246		0.256	
Variance elections	0.00		0.00		0.77		0.00	
Variance region	1.07		1.09		1.98		0.119	
N (elections)	458		458		488		488	
N (regions)	58		58		58		58	
N (countries)	11		11		11		11	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01. Shown are the results of four mixed effects linear regression models with regionalist parties' regional vote share in national elections (natural logarithm) as the dependent variable. Elections are clustered within regions which are clustered within countries. The models contain an autoregressive error structure to control for autocorrelation between elections within regions.

### 5.2.1 Marginal effects

The effect of the vote threshold is further explored through marginal effects using the results from both the reduced and the full model to shed light on the differences, as shown in Table 5.4. The table demonstrates how the number of additional votes needed to win a national seat compared to a regional seat impacts regionalist parties predicted regional vote share in national elections. The vote threshold ratio was not statistically significant in the full model as such the estimates may be biased.

The predicted values based on the reduced model depict how regionalist parties predicted regional vote share at the national level is assumed to decrease as the vote threshold ratio increases from needing three to eight times as many votes to win a national seat compared to a regional seat. The reduced model reveals that their vote share is expected to decrease from 12.5 percent to 11.25 percent as the vote threshold ratio increases. The full model shows that parties are assumed to decrease their regional vote share from six percent to 5.5 percent as the number of additional votes needed to win a national seat increase. The difference in estimates between the reduced and full model is in this case also influenced by the outlying observations. These observations seem to decrease regionalist parties predicted vote share in national elections, and this is potentially caused by how the electoral system plays out in the region. With the regions of Åland and Valle d'Aosta which made up most of the outliers, it is likely that because there is only one national seat available and the vote share between parties in an alliance cannot in any way be broken down, parties can either receive a quite high or low vote share. These outliers may therefore impact regionalist parties' total predicted vote share in national elections.

**Table 5.4** Predicted values of regional vote share strength in national elections

<b>Vote threshold ratio</b>	<b>Predicted regional vote share</b>	<b>Predicted regional vote share</b>
Ratio (log10)	<b>in national elections:</b> Reduced model	<b>in national elections:</b> Full model
2.82 (0.45)	12.55 %	6.11 %
3.39 (0.53)	12.30 %	6.05 %
4.07 (0.61)	12.06 %	5.93 %
5.89 (0.77)	11.59 %	5.70 %
8.32 (0.92)	11.25 %	5.53 %
Change	-1.31 %	-0.58 %

*Notes:* Shown are regionalist parties predicted regional vote shares at the national level as the ratio between national and regional elections move from one quartile below to one quartile above the median. The ratio is shown in its untransformed and logarithm transformed value (in brackets). Vote shares are shown in percentages. Covariates are set at their median value. The predictions are based on estimates from model 1 in table 5.4.

**5.2.2 Robustness analyses**

The first robustness check involves models with the vote share swing between regional and national elections as the dependent variable, and models with a lagged dependent variable. The reduced and full models in Table C5 in Appendix C reveal that the vote threshold ratio is significant in explaining vote share swings between national and regional vote shares, confirming hypothesis 2a and the results found in the original reduced model, namely that the higher vote threshold ratio, the less likely regionalist parties are to spill over their regional vote share into national elections. In both the reduced and full models with the lagged dependent variable, the vote threshold ratio has a negative coefficient, although it is non-significant. This is likely caused by the introduction of the lagged dependent variable, as regionalist parties’ regional vote share in a national election is strongly explained by their vote share in previous national elections. The lagged dependent variable may also suppress the explanatory factor of the independent variable rendering them non-statistically significant.

To account for the low country sample, a robustness model with country-dummies is shown in Table C6. The findings do not confirm the results of the original model, suggesting that the vote threshold ratio has a non-significant negative effect on regionalist parties’ electoral strength in national elections. This effect might arise because a lot of the variance is found at the national level, thus once controlling for the country effects, the significance of the ratio

decreases. The interaction is neither significant in the reduced or full model further suggesting that hypothesis 2b can be rejected.

The third robustness check involves models with the non-transformed values of the vote shares in regional, national, and European elections, shown in Table C7. Neither the reduced nor the full models reveal a significant effect of the vote threshold ratio or the interaction effect. The reason for this might be because the vote share variables are not normally distributed and may therefore alter the estimations of the multilevel linear mixed-effects model.

To examine whether the results remain constant when using similar types of parties as regionalist parties, I run analyses with probably regionalist parties (model A), regional parties (model B) and the combination of regionalist, probably regionalist and regional parties (model C) in Table C8. In all three models, the vote threshold ratio has a negative impact, where the coefficient is significant at either the five or one percent level. These results then strongly confirm the previously found results, namely that the higher the vote threshold ratio between national and regional elections, the less likely probably, regional and regionalist parties are to spill over to the national level. The next section concludes in relation to the results found and discusses various implications for future research.

## 6 Discussion

The European multilevel election system keeps expanding whilst an increasing number of citizens can express their policy preferences in subnational, national, and supranational elections. However, the characteristic methodological nationalism in the second-order election model has prevented researchers from studying the contamination of electoral results between the three electoral arenas in the multilevel electoral system. Regionalist parties have simultaneously taken a larger role in regional electoral systems in many strong regions across Western Europe. Although the electoral system has been thoroughly studied, there is scarce research relating to how the electoral system impacts bottom-up vertical spillover. Because few have analysed the role of the electoral system in explaining the extent to which regionalist parties' spillover from the regional electoral arena, I sought to fulfil this gap in the literature by examining the following research question:

*To what extent does the vote threshold ratio impact regionalist parties' abilities to spill over from regional elections into national and European elections?*

To assess this research question, I focused on how the vote threshold ratio, namely the additional number of votes needed to win a national or European seat compared to a regional seat can help explain the extent to which regionalist parties' regional vote share spill over into their regional electoral strength at the national and European level. This was examined through two analyses, the first studying regional electoral spillover into European elections, and the second investigating regional electoral spillover into national elections.

### **6.1 Can the vote threshold ratio explain vertical bottom-up spillover?**

The findings from this thesis provide evidence that the permissiveness of the electoral system impacts the extent to which regionalist parties spill over their regional electoral strength into national and European elections. The results indicated that the more additional votes regionalist parties need to gather within their region in national or European elections to obtain a seat, in relation to the regional election, the more challenging it is to spill over their regional electoral strength into the national and European level.

Concerning the analysis of regional spillover into European elections, the vote threshold ratio, i.e., the number of additional votes required to obtain a seat in a European Parliament had a

statistically significant negative effect on regionalist parties vote share strength in European elections, in line with hypothesis 1a. Hence, when regionalist parties require a larger number of extra votes to win a seat in the European Parliament compared to the number of votes needed to win a regional seat, the less likely regionalist parties are to have a strong regional vote share in European elections. This effect was found both in the model with and without the outliers. The negative impact of the vote threshold ratio on spillover suggests that voters are refraining from voting for a regionalist party in favour of a non-regionalist party because the voters move from sincere to strategic voting. Voters are potentially making sure that they are voting for a party that is the closest to their preferences in terms of ideology and that the party has a reasonable chance of entering parliament or government.

Apart from the robustness models of regional and all regional(ist) parties, which did not control for potential outliers and horizontal spillover, the robustness models supported the findings of the original models, giving more credibility to the assumption that the higher vote threshold the more challenging it is for regionalist parties to have a strong regional vote share at the European level. Despite there not being any similar pieces of research, these results further confirm findings from the literature namely that the regional arena is important in influencing electoral outcomes in the European electoral arena (Schakel 2018, 2021).

The analysis of regional spillover into national elections showed partial support for hypothesis 1b. The models with the outliers revealed a non-statistically significant effect on the vote threshold ratio, however, once certain outliers were removed, the vote threshold ratio became statistically significant. Hence the preferred reduced model supports hypothesis 1b and provides evidence that the higher the vote threshold ratio between national and regional elections, the less probable regionalist parties are to have a strong regional vote share at the national level. These results are in line with research by Chan (2022) and Dinas and Foos (2017) who demonstrate that there is significant bottom-up spillover from the regional into the national electoral arena.

The reason for the differing effects when comparing the two models might be because the jump from the regional to the national level translates differently than anticipated for very large vote share swings which are larger than minus 23 and plus 13 percent. The results suggest that the ratio is potentially not able to directly explain the outliers, which often are outliers precisely because of the large jump from the regional arena into the national arena.



The party-level dataset gave information as to why these observations were outliers, namely because of how the national electoral system plays out in the region, by alliance formations and the comparisons of vote shares related to party competition. When the region is very small in relation to the rest of the country and there is only one seat up for election in a national election for instance as in Åland, Valle d'Aosta and the Faroe Islands, the jump from the regional arena is very difficult, because it limits the number of parties being able to compete for the seat. This leads to regionalist parties forming alliances with other regionalist parties or state-wide parties to be able to have a chance of obtaining the national seat. However, there is no way of breaking up the vote share between the parties in an alliance when there is only one seat, and a regionalist party may therefore be given the total vote share or none of the vote share. This in turn leads to quite a large vote share swings when comparing national and regional elections. These outliers further reveal that the permissiveness of the electoral system is an important predictor in explaining vertical bottom-up spillover effects, however not necessarily through the number of additional votes needed to win a national seat, but rather because of the way the national electoral system plays out at the regional level.

There were also outliers which were caused by the comparisons of elections where parties did and did not compete. For instance, in Cantabria, where one regionalist party competed in all regional elections, but not all national, leading to certain large vote share swings when comparing a national and a previous regional election. Hence these observations are outliers, but they also give a picture of how regionalist parties compete in the multilevel electoral system.

The robustness models with probably regionalist and regional parties and the vote share swing as the dependent variable confirmed the results found in the reduced model, namely that the ratio has a statistically significant negative impact. The other robustness analyses showed no significant effect of the vote threshold ratio, even though the predicted direction of the coefficient was conforming to the hypothesis. The fixed effects may control for the effect for the vote threshold ratio and the non-transformed vote shares may not produce reliable estimates as the values are not normally distributed. As such we can assume that hypothesis 1b is partially supported, but future research needs to study these effects at the party level to confirm whether the vote threshold ratio has a statistically negative impact on regional spillover into national elections.

The effect of the vote threshold ratio on explaining spillover into national elections seems to be somewhat less robust than for explaining spillover into European elections. This result might be explained by the fact that spilling over from the regional arena into the European arena is even more difficult and requires even more additional votes from the regional electorate than spilling over into the national arena. It appears as if the European arena is general less permissive in most regions and hence the number of additional votes needed to obtain a seat is even more crucial in explaining this spillover mechanism. As such the vote threshold ratio is potentially more efficient in picking up on the more challenging spillover effect from the regional to the European arena, than the one from the regional to the national.

Concerning the interaction effect and hypotheses 2a and 2b, one would expect that the vote threshold ratio would have a smaller effect on regionalist parties with a larger vote share in the previous regional election, however, the results of both the reduced and full model of both spillover into national and European elections indicated that that is not the case. No matter regionalist parties' total regional vote share in the previous regional election, the vote threshold indicates a negative effect on their regional vote share in the subsequent European and possibly the national election.

## **6.2 Implications for future research**

The results of the thesis suggest several opportunities for future research on the impact of the permissiveness of the multilevel electoral system on vertical bottom-up electoral spillover. A conceptual challenge related to this thesis has been the development of the vote threshold ratio and the application of this concept in a multilevel electoral setting. This has enabled the comparison of the easiness to win a seat between different elections and electoral arenas over time. In terms of internal validity, there is no decided upon framework on which to measure the easiness to win a seat in the multilevel electoral system. To test the hypothesis the vote threshold ratio measurement was used. There may however be parts of this measurement which could be developed further, for instance in relation to mixed electoral systems, where it is more challenging to measure the number of votes needed to win a seat compared to majoritarian and proportional systems. It would also be appropriate for the vote threshold concept to consider how voters are dispersed within the region as a whole and the constituencies within, to get an even more precise measurement of the number of votes needed within a region to be able to win a seat in a regional, national, or European election.

Furthermore, it is important to note that party-level effects may remain unobserved in the findings since the analysis was conducted using the sum of regionalist parties' vote shares in an election at the regional level. The more robust result of the vote threshold ratio on spillover into European elections compared to national elections may be impacted by a particular behaviour of parties which differs between national and European elections. There may therefore be additional explanations for the findings of the electoral spillover into national and European elections which needs to be examined further. Follow-up research ought to examine these effects using the party-level dataset to control for the various alliance strategies of parties when comparing elections over time. The formation of alliances may have a big role in explaining the extent to which regionalist parties' electoral strength at the regional level spill over into their electoral strength at the national and European level. Perhaps the permissiveness of the electoral system impacts regionalist parties' alliance strategies differently, for instance, whether they form alliances with other regionalist parties or state-wide parties. Whether the regionalist party is part of an alliance where they are the junior or senior partner of the alliance should also be controlled in future studies to get a realistic picture of vertical bottom-up spillover effects.

A potential drawback of the analysis is the somewhat low number of countries in the sample, as the dataset only contained data on certain Western European countries. There are only eleven countries in the analysis of spillover into national elections, and only ten countries in the analysis of spillover into the European electoral arena. These countries were not picked at random but chosen due to the availability of election data disaggregated to the regional level as well as in which countries regionalist parties are present. For future studies of vertical bottom-up spillover in relation to regionalist parties, researchers ought to include a larger sample of countries, in particular from Eastern Europe to help assure broader generalizability of the findings. Due to the lack of data, we cannot necessarily know whether these results apply to regionalist parties in Eastern Europe.

Further research would also benefit from analysing the research question qualitatively, perhaps through case studies of regionalist parties. Such research would allow us to get insight into what factors matter for whether these parties decide to compete in elections at the national and European levels. By focusing on specific regionalist parties, we could also gain an understanding of how alliance formations impact the extent to which they compete in national or European elections. As this thesis has indicated the permissiveness of the electoral

system has a potential role in affecting regionalist parties' electoral strength, thus an in-depth analysis of certain regionalist parties would generate knowledge as to how these parties perceive the various elements of the electoral system and which elements hinders or enables their competition in national and European elections.

Whether voters and political parties are aware of the differences in the easiness to win a seat between the different electoral arenas and whether this impacts their willingness to vote for regionalist parties in national and European elections requires the analysis of post-election surveys. Through such surveys, one could ask voters which party they voted for in the previous regional, national, or European election. Similarly, one could ask voters whether they would have voted for a regionalist party in elections where there only is one seat available. This would be interesting to study to understand the vote intentions of regional voters who are interested in voicing their demands for regionalist issues within the multilevel election system.

This thesis has demonstrated how studying electoral spillover in a multilevel electoral system is challenging in terms of the data collection of election outcomes. This challenge has required the disaggregation of regionalist parties' electoral results to the region level and party level through the breakdown and coding of alliance formations in three different elections. This thesis underlines an important point as stated by Golder et al. (2017, 7), namely that scholars still have plenty of opportunities to make theoretical and empirical contributions to the study of multi-level politics. The European multilevel electoral system reveals a variety of potential vertical and horizontal spillover effects between regional, national, and European elections, which needs to be further researched to get a broader and more detailed understanding of the impact of the permissiveness of the electoral system on electoral spillover.

## **7 Concluding remarks**

This thesis has demonstrated how elections ought not to be studied in isolation and presented empirical evidence of how the permissiveness of the electoral system impacts vertical bottom-up spillover effects from the regional electoral arena into national and European elections. The findings are somewhat more robust for regional spillover into European elections than national elections, but the results indicate that the larger number of additional votes regionalist parties need to win a European or national seat, the less likely they are to have a strong regional vote share in European and national elections. Thus, it appears as if the higher number of additional votes needed to win a national or European seat, the more challenging it is for regionalist parties to spillover from the regional electoral arena. These results have implications for our understanding of the European multilevel electoral system and how the permissiveness of the electoral system influences electoral outcomes in regional, national, and European elections. The findings of this thesis also illuminate the need to research electoral spillover at the party level to increase our understanding of how the number of additional votes needed to gain representation at the national and European levels impacts individual parties' electoral spillover from the regional electoral arena.

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## Appendix

### Appendix A: Overview of regionalist parties in the dataset

Country	Regionalist party	Abbreviation	Core region
Belgium	Front Démocratique des Francophones / Démocrate Fédéraliste Indépendant	FDF	Brussels
Belgium	Front Wallon	FW	Waals Gewest
Belgium	Rassemblement Wallon	RW	Waals Gewest
Belgium	Union pour la Wallonie	UW	Waals Gewest
Belgium	Nieuw Vlaamse Alliantie	N-VA	Vlaams Gewest
Belgium	Pro duetschsprachige Gemeinschaft	ProDG	Deutsche Gemeinschaft
Belgium	Rassemblement Wallon France / Rassemblement Bruxelles-France	RWF	Waals Gewest
Belgium	Vlaams Nationale Partij	VNP	Vlaams Gewest
Belgium	Vlaamse Volkspartij	VVP	Vlaams Gewest
Belgium	Vlamms Blok/Vlaams Belang	VB	Vlaams Gewest
Belgium	Vlaamse Concentratie	VC	Vlaams Gewest
Belgium	Wallonie d'Abord	WDA	Waals Gewest
Belgium	Volksunie	VU	Vlaams Gewest
Belgium	Wallonie Insoumise	WI	Waals Gewest
Denmark	Fólkaflokkurin	FF	Faroe Islands
Denmark	Inuit Ataqatigiit	IA	Grønland
Denmark	Sjálvstýrisflokkurin	SSF	Faroe Islands
Denmark	Issittup Partiia	IPA	Grønland
Denmark	Tjóðveldi	TF	Faroe Islands
Denmark	Framsókn	F	Faroe Islands
Finland	Fria Åland	FA	Åland
Finland	Ålands framtid	ÅF	Åland
Finland	Liberalerna på Åland	L	Åland
France	Alsace d'Abord	AA	Alsace
France	Abertzaleen Batasuna	AB	Aquitaine
France	Accolta Naziunale Corsa	ANC	Corse
France	Convergència Democràtica de Catalunya	CDC	Languedoc-Roussillon
France	U Rinnovu Naziunale	PR	Corse
France	Corsica Libera	CL	Corse
France	Corsica Nazione	CN	Corse
France	Corsica Viva	CV	Corse
France	Eusko Alkartasuna	EA	Aquitaine
France	Euzko Alderdi Jeltzalea - Parti Nationaliste Basque	EAJ-PNB	Aquitaine
France	Euskal Herria Bai	EHB	Aquitaine
France	Esquerra Republicana de Catalunya	ERC	Languedoc-Roussillon
France	Frankiz Breizh	FB	Bretagne
France	Femu a Corsica	FC	Corse
France	Inseme per a Corsica	IC	Corse
France	Ligue du Midi	LDM	Languedoc-Roussillon
France	Ligue Savoisiennne	LS	Rhone-Alpes
France	A Manca Naziunale / A Manca	MN	Corse
France	Muvimentu pà l'Autodeterminazione	MPA	Corse
France	Mouvement Région Savoie	MRS	Rhone-Alpes

France	Mouvement Savioe	MS	Rhone-Alpes
France	Nationalforum Elsass-Lothringen	NFEL	Alsace
France	Parti Breton (Strollad Breizh)	Pbreton	Bretagne
France	Partidu di a Naziune Corsa	PNC	Corse
France	Parti de la Nation Occitane	PNO	'Occitanie'
France	Partit Occitan	POC	'Occitanie'
France	Breizhistance - Bretagne En Luttas Breizh O Stourm	BREI	Bretagne
France	Union Democratique Bretonne	UDB	Bretagne
France	Unser Land	UL	Alsace
France	Unione di u populu Corsu	UPC	Corse
Germany	Bayernpartei	BP	Bayern
Germany	Die Friesen	DIEF	Niedersachsen
Germany	Christlich-Soziale Union	CSU	Bayern
Germany	Südschleswigischen Wählerverbandes	SSW	Schleswig-Holstein
Germany	Partei des Demokratischen Sozialismus	PDS	'Ostdeutschland'
Italy	Autonomia Integrale	AI	Trentino-Alto Adige
Italy	Autonomie Liberté Participation Écologie	ALPE	Valle d'Aosta
Italy	Die Freiheitlichen	DF	Trentino-Alto Adige/Bolzano
Italy	Fédération Autonomiste	FEA	Valle d'Aosta
Italy	Fortza Paris	FOP	Sardegna
Italy	Grande Nord	GN	Lombardia
Italy	Indipendenza Noi Veneto	INV	Veneto
Italy	Indipendentzia Republica de Sardigna	IRDS	Sardegna
Italy	Indipendenza Veneta	IV	Veneto
Italy	Lega Lombardia	LLOM	Lombardia
Italy	Lega Nord	LN	'Padania'
Italy	Lega Sarda	LSA	Sardegna
Italy	Liga Veneto	LVEN	Veneto
Italy	Movimento per l'Autonomia	MPA	Sicilia
Italy	Movimento siciliani liberi	MSL	Sicilia
Italy	Noi Sud	NOSU	Campania
Italy	Progetto NordEst	PAFVG	Friuli-Venezia Giulia
Italy	Partito Autonomista Trentino Tirolese	PATT	Trentino-Alto Adige/Trento
Italy	Partito dei Sardi	PdSA	Sardegna
Italy	Patto per l'Autonomia	PPIA	Friuli-Venezia Giulia
Italy	Partito del Popolo Sardo	PPS	Sardegna
Italy	Partito Popolare Trentino Tirolese	PPTT	Trentino-Alto Adige
Italy	Partito Sardo d'Azione	PSd'AZ	Sardegna
Italy	Rossomori	ROS	Sardegna
Italy	Stella Alpina	SAI	Valle d'Aosta
Italy	Soziale Fortschrittspartei Südtirols	SFP	Trentino-Alto Adige
Italy	Südtiroler Heimatbund	SH	Trentino-Alto Adige
Italy	Sardigna Natzione / Sardigna Natzione Indipendentzia	SN	Sardegna
Italy	Sozialdemokratische Partei Südtirols	SPS	Trentino-Alto Adige
Italy	Süd-tiroler Freiheit	STF	Bolzano
Italy	Südtiroler Volkspartei	SVP	Trentino-Alto Adige
Italy	Tiroler Heimatpartei	THP	Trentino-Alto Adige
Italy	Unione Autonomista Trentino Tirolese	UATT	Trentino-Alto Adige
Italy	Union für Südtirol / BürgerUnion für	UFS	Trentino-Alto

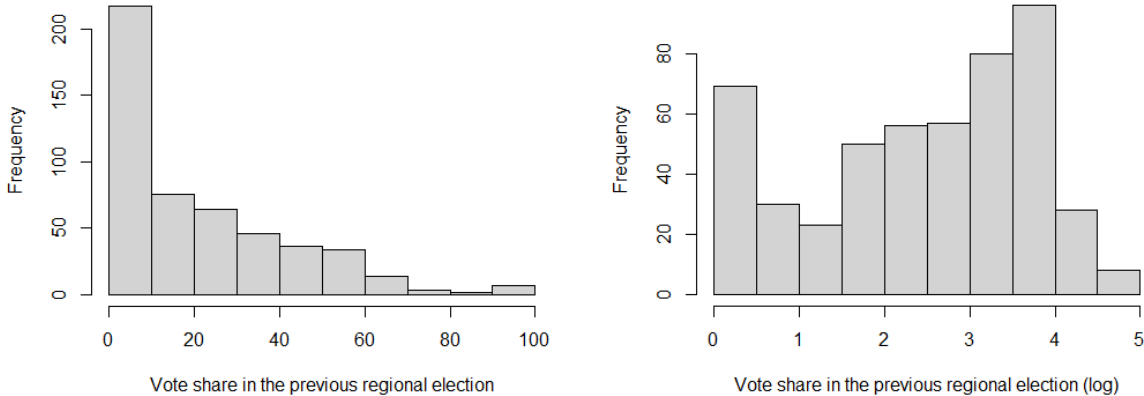
	Südtirol		Adige/Bolzano
Italy	Union Valdôtaine	UV	Valle d'Aosta
Italy	Union Valdôtaine Progressiste	UVP	Valle d'Aosta
Italy	Vallée d'Aoste Vive-Renouveau Valdôtain	VAV-RV	Valle d'Aosta
Netherlands	Fryske Nasjonale Partij	FNP	Friesland
Netherlands	Partij voor het Noorden	PVHN	'Noorden'
Netherlands	Provinciaal Belang Fryslân	PBF	Friesland
Spain	Andecha Astur	AA	Principado de Asturias
Spain	Asamblea Canaria - Izquierda Nacionalista Canaria	AC	Canarias
Spain	Agrupacion Electoral Nacionalista de Cantabria	AEN	Cantabria
Spain	Alianza Foral Navarra	AFN	Comunidad Foral de Navarra
Spain	Agrupaciones Independientes De Canarias	AIC	Canarias
Spain	Alternativa Nacionalista Canaria	ANC	Canarias
Spain	Anova	Anova	Galicia
Spain	Accion Nacionalista Vasca	ANV	Euskadi
Spain	Alternativa Popular Canaria	APCa	Canarias
Spain	Aralar	ARALAR	Euskadi
Spain	Askatasuna	ASKATASUNA	Euskadi
Spain	Batzarre	BATZARRE	Comunidad Foral de Navarra
Spain	Bloque Aragonés	BAR	Aragon
Spain	Coalició Bloc d'Esquerra d'Alliberament Nacional-Unitat Popular	BEAN-UP	Cataluna
Spain	Bloc Sobiranista Català	BLOCSC	Cataluna
Spain	Bloque por Asturias-Unidá Nacionalista Asturiana: Compromisu por Asturias	BLOQUE POR ASTURIAS-UNA	Principado de Asturias
Spain	Bloque Nacionalista Gallego	BNG	Galicia
Spain	Bloc Nacionalista Valencià-Coalició Compromís	BNV	Comunitat Valenciana
Spain	Convergencia Andaluza	CAnda	Andalucia
Spain	Coalición Canaria	CC	Canarias
Spain	Centro Canario	CCN	Canarias
Spain	Convergencia Democrática de Navarra	CDN	Comunidad Foral de Navarra
Spain	Coalición Extremeña	CEx	Extremadura
Spain	Coalición Galega	CG	Galicia
Spain	Chunta Aragonesista	CHA	Aragon
Spain	Convergència i Unió	CIU	Cataluna
Spain	Candidatura d'Unitat Popular (Catalonia)	CUPC	Cataluna
Spain	Coalicio Valenciana	CVa	Comunitat Valenciana
Spain	Compromiso por Galicia	CxG	Galicia
Spain	Convergencia per les Illes	CxI	Illes Balears
Spain	Converxencia Vinteún	CXXI	Galicia
Spain	Democracia Regionalista de Castilla y León	DRCL	Castilla y Leon
Spain	Eusko Alkartasuna	EA	Euskadi
Spain	Euskadiko Ezkerra	EE	Euskadi

Spain	Euskal Herria Bildu	EH Bildu	Euskadi
Spain	El Pi-Proposta per les Illes	ELPI	Illes Balears
Spain	Esquerra Nacionalista Valenciana	ENV	Comunitat Valenciana
Spain	Esquerra Republicana de Catalunya	ERC	Cataluna
Spain	Esquerra Republicana del País Valencià	ERPv	Comunitat Valenciana
Spain	Extremadura Unida	EXU	Extremadura
Spain	Herri Batasuna	HB	Euskadi
Spain	Izquierda Andaluza	IA	Andalucía
Spain	Iniciativa Canaria	ICAN	Canarias
Spain	Iniciativa Aragonesa	INAR	Aragón
Spain	Junts per Catalunya	JxCat	Cataluna
Spain	Junts pel sí	JxSi	Cataluna
Spain	Libertad Navarra-Libertate Nafarra	LN	Comunidad Foral de Navarra
Spain	Movimiento Por La Unidad Del Pueblo Canario	MUPC	Movimiento Por La Unidad Del Pueblo Canario
Spain	Nación Andaluza	NA	Andalucía
Spain	Nueva Canarias	NCa	Canarias
Spain	Partido Andalucista	PA	Andalucía
Spain	Partido Nacionalista de Castilla y Leon	PANCAL	Castilla y Leon
Spain	Partido Aragonés Regionalista / Partido Aragonés	PAR	Aragón
Spain	Partiu Asturianista	PAS	Principado de Asturias
Spain	Partido Comunista de las Tierras Vascas	PCTV-EHAK	Euskadi
Spain	Partido Nacionalista Canario	PNC	Canarias
Spain	Partido Nacionalista de Cantabria / Partido Nacionalista Cantabro	PNCT	Cantabria
Spain	Partido Galeguista	PG	Galicia
Spain	Partido Nacionalista Galego-Partido Galeguista	PNG-PG	Galicia
Spain	Euzko Alderdi Jeltzalea-Partido Nacionalista Vasco	EAJ-PNV	Euskadi
Spain	Partido Regionalista de Cantabria	PRC	Cantabria
Spain	Partido Regionalista Extremeño	PREX	Extremadura
Spain	Partido Riojano	PR	La Rioja
Spain	Partido Riojano Progresista	PRP	La Rioja
Spain	Partido Socialista De Andalucía	PSA	Andalucía
Spain	Partit Socialista de Mallorca	PSM	Illes Balears
Spain	Partit Socialista de Menorca	PSMe	Illes Balears
Spain	República Valenciana/Partit Valencianiste Europeu	RVPVE	Comunitat Valenciana
Spain	Tierra Aragonesa	TA	Aragón
Spain	Tierra Comunera	TC	'Castilla'
Spain	Unió democràtica de Catalunya	UDCAT	Cataluna
Spain	Unió Mallorquina	UM	Illes Balears
Spain	Unidá Nacionalista Asturiana	UNA	Principado de Asturias
Spain	Unión del Pueblo Navarro	UPN	Comunidad Foral de Navarra
Spain	Unión Renovadora Asturiana	URAS	Principado de Asturias
Spain	Unidad Regionalista de Castilla y León	URCL	Castilla y Leon
Spain	Unió Regional Valencianista	URV	Comunitat Valenciana
Spain	Unió Valencia	UV	Comunitat Valenciana
Sweden	Skånepartiet	SKANEP	Skåne

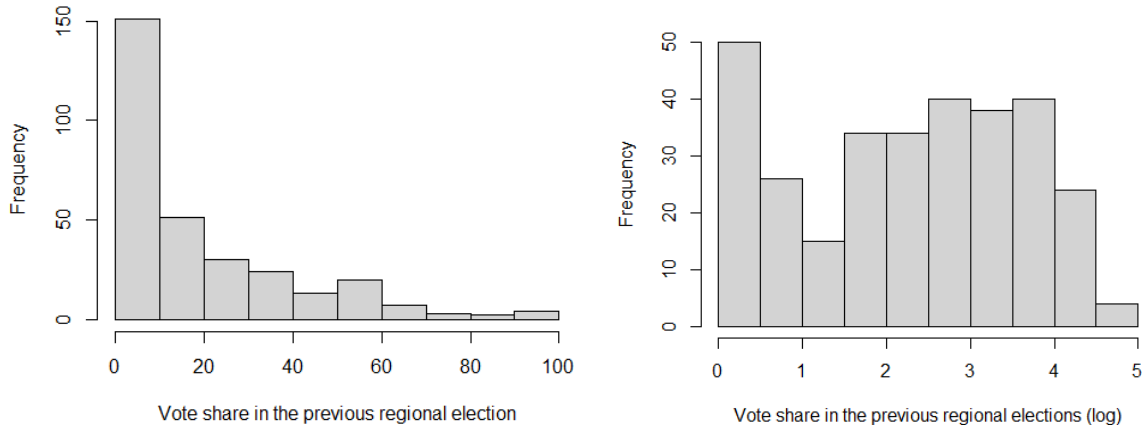


Switzerland	Lega dei Ticinesi	Lega	Tessin
Switzerland	Mouvement Citoyens Genevois	MCG	Genf
Switzerland	Mouvement Citoyens Romand	MCR	Genf
United Kingdom	Alliance Party of Northern Ireland	APNI	Northern Ireland
United Kingdom	Cymru Annibynnol	CA	Wales
United Kingdom	Cornish National Party	CNP	South West
United Kingdom	Democratic Unionist Party	DUP	Northern Ireland
United Kingdom	English Democrats	ED	'England'
United Kingdom	Forward Wales-Cymru Ymlaen	FWAL	Wales
United Kingdom	Irish Independence Party	IIP	Northern Ireland
United Kingdom	Mudiad Gweriniaethol Cymru	MGC	Wales
United Kingdom	Mebyon Kernow	MK	South West
United Kingdom	Northern Ireland Unionist Party	NIUP	Northern Ireland
United Kingdom	Plaid Cymru	PC	Wales
United Kingdom	Progressive Unionist Party	PUP	Northern Ireland
United Kingdom	Social Democratic and Labour Party	SDLP	Northern Ireland
United Kingdom	Sinn Fein	SF	Northern Ireland
United Kingdom	Scottish Green Party	SGP	Scotland
United Kingdom	Scottish Jacobite Party	SJP	Scotland
United Kingdom	Scottish Libertarian Party	SLIP	Scotland
United Kingdom	Scottish National Party	SNP	Scotland
United Kingdom	Scottish Socialist Party	SSP	Scotland
United Kingdom	The North East Party	TNEP	Wales
United Kingdom	The Northern Party	TNORP	North East
United Kingdom	UK Unionist Party	UKUP	Northern Ireland
United Kingdom	Ulster Democratic Party	ULDP	Northern Ireland
United Kingdom	Unionists Pro-Assembly	UPA	Northern Ireland
United Kingdom	Unionist Party of Northern Ireland	UPNI	Northern Ireland
United Kingdom	Ulster Third Way	UTW	Northern Ireland
United Kingdom	Ulster Unionist Party	UUP	Northern Ireland
United Kingdom	United Ulster Unionist Party	UUUP	Northern Ireland
United Kingdom	Wessex Regionalists	WR	South West
United Kingdom	Yorkshire Party	YP	Yorkshire and The Humber

**Appendix B: Model diagnostics**



**Figure B1.** Distribution of the regionalist parties’ vote share in the previous regional election in its original (left) and transformed version (right)  
*Notes:* Shown is the distribution of vote shares in the previous regional to a national election. The variable comes from the dataset measuring spillover into national elections



**Figure B2.** Distribution of the regionalist parties’ vote share in the previous regional election in its original (left) and transformed version (right)  
*Notes:* Shown is the distribution of vote shares in the previous regional to a European election. The variable comes from the dataset measuring spillover into European elections

**Table B1.** Variance Inflation Factor (VIF) scores

Spillover into national elections		Spillover into European elections	
Variable	VIF	Variable	VIF
Vote threshold ratio reg-nat	1.042	Vote threshold ratio reg-EU	1.209
Prev. regional vote share	1.859	Prev. regional vote share	2.048
Prev. EU vote share	1.229	Prev. national vote share	1.516
RAI	1.064	RAI	1.155
Regional identity	1.109	Regional identity	1.168
Cycle	1.076	Cycle	1.535
Vertical simultaneity	1.069	Vertical simultaneity	1.544
Regional parliament presence	1.544	Regional parliament presence	1.495
<b>Mean VIF</b>	<b>1.249</b>	<b>Mean VIF</b>	<b>1.459</b>

*Notes:* Shown are two VIF-tests measuring the multicollinearity between the independent variables. The table on the left shows the VIF values in the dataset on spillover into national elections. The table on the right shows the VIF scores of the independent variables in the dataset on spillover into European elections.

**Table B2.** Spillover into national elections - Pearson correlation coefficients

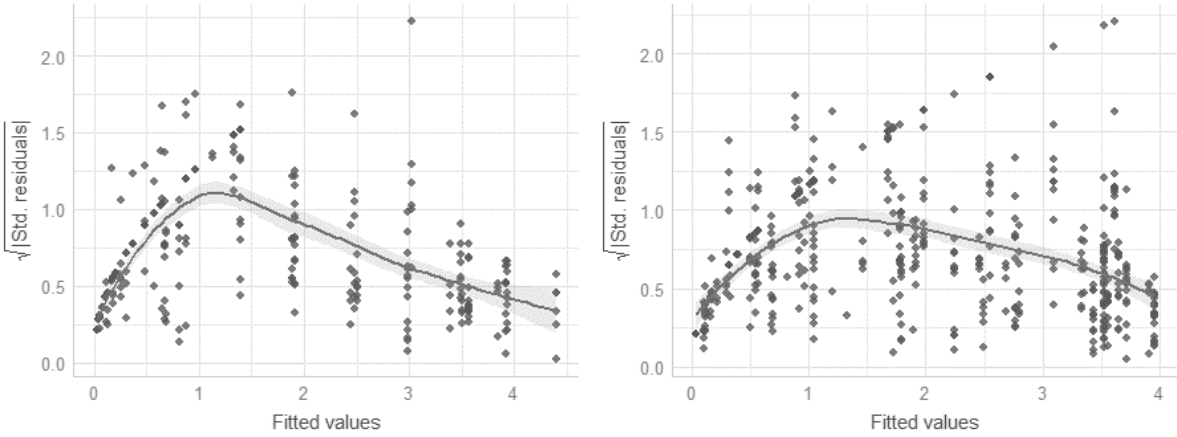
Variable	Vote threshold ratio	Regional vote share	European vote share	RAI	Regional identity	Vertical simultaneity	Cycle	Regional parliament
Vote threshold ratio	1.00							
Regional vote share	0.22	1.00						
European vote share	-0.02	0.51	1.00					
RAI	0.11	0.24	0.09	1.00				
Regional identity	0.11	0.43	0.09	0.14	1.00			
Vertical simultaneity	-0.02	-0.10	0.01	-0.11	-0.14	1.00		
Cycle	0.02	0.11	-0.05	-0.06	-0.16	-0.34	1.00	
Regional parliament	0.20	0.59	0.50	0.16	0.23	-0.06	0.01	1.00

*Notes:* Shown are the Pearson's correlations of the independent variables in the dataset on regional spillover into national elections, where the correlations range between -1 and 1. A value of 0 implies little to no linear relationship between the variables. Coefficients closer -1 or 1 implies a stronger linear relationship.

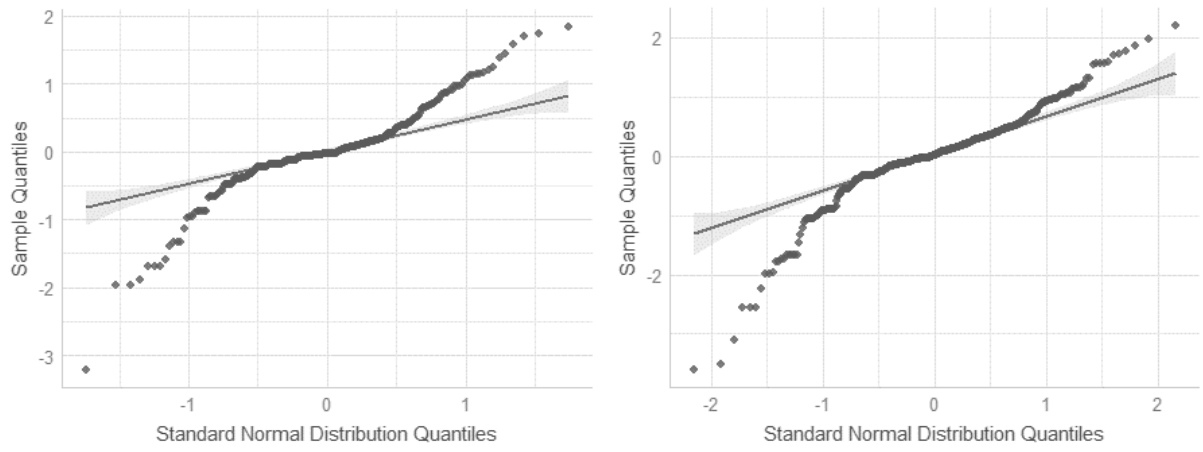
**Table B3.** Spillover into European elections - Pearson correlation coefficients

Variable	Vote threshold EU	Regional vote share	National vote share	RAI	Regional identity	Vertical simultaneity	Cycle	Regional parliament
Vote threshold EU	1.00							
Regional vote share	0.37	1.00						
National vote share	0.19	0.80	1.00					
RAI	0.28	0.30	0.20	1.00				
Regional identity	0.16	0.40	0.37	0.08	1.00			
Vertical simultaneity	0.06	0.02	-0.04	0.25	-0.07	1.00		
Cycle	-0.17	-0.13	-0.06	-0.11	0.00	-0.55	1.00	
Regional parliament	-0.10	0.64	0.70	0.17	0.29	-0.10	0.00	1.00

Notes: Shown are the Pearson’s correlations of the independent variables in the dataset on regional spillover into European elections, where the correlations range between -1 and 1. A value of 0 implies little to no linear relationship between the variables. Coefficients closer -1 or 1 implies a stronger linear relationship.



**Figure B4.** Plot of homogeneity of variance of data measuring spillover into European elections (left) and national election (right)



**Figure B5.** Plot of normality of residuals of data measuring spillover into European elections (left) and national election (right)

## Appendix C: Robustness analyses

**Table C1.** Model with alternative versions of spillover into European elections as dependent variable

	Reduced model		Reduced model		Full model 1:		Full model 2:	
	1: Vote share		2: Lagged DV		Vote share swing		Lagged DV	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.335**	0.111	-0.341**	0.111	-0.322*	0.132	-0.397**	0.134
Vote share in previous regional election	0.464***	0.077	0.457***	0.077	0.288***	0.067	0.308***	0.069
Lagged dv			0.036	0.021			0.049*	0.021
<b>Control variables</b>								
Vote share in prev. national election	0.565***	0.055	0.562***	0.055	0.500***	0.053	0.476***	0.055
Cycle	0.309*	0.136	0.311*	0.136	0.270	0.142	0.267	0.142
Vertical simultaneity	0.316**	0.113	0.307**	0.112	0.265*	0.126	0.302*	0.120
Regional authority	-0.005	0.010	-0.005	0.010	-0.043**	0.016	-0.010	0.014
Regional identity	0.056	0.073	0.053	0.073	0.203*	0.085	0.157	0.099
Regional parliament presence	-0.125	0.138	-0.123	0.137	0.103	0.143	0.109	0.145
Intercept	-0.017	0.210	-0.046	0.221	0.636	0.395	0.246	0.269
<b>Model statistics</b>								
Log likelihood	-255.849		-256.648		-311.454		-316.001	
ICC	.463		.437		.630		.591	
AIC	539.700		544.640		650.908		653.711	
BIC	590.736		599.322		702.430		709.368	
Phi	0.268		0.275		0.228		0.226	
Variance elections	0.00		0.00		0.07		0.00	
Variance region	0.25		0.22		0.55		0.46	
N (elections)	283		283		302		302	
N (regions)	55		55		56		56	
N (countries)	10		10		10		10	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed-effects linear regression models where elections are clustered in regions within countries. Two models show the vote share swing between a European and a previous regional election as the dependent variable. Two models include a lagged dependent variable. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C2.** Mixed-effects models of spillover into European elections with country fixed-effects

	<b>Reduced model A:</b>		<b>Reduced model B:</b>		<b>Full model A:</b>		<b>Full model B:</b>	
	Ratio		Interaction		Ratio		Interaction	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.357 **	0.125	-0.765***	0.201	-0.250	0.142	-0.471*	0.200
Vote share in prev. regional election	0.428 ***	0.077	0.245*	0.104	0.298***	0.067	0.168	0.107
Ratio*vote share prev. regional election			0.198**	0.076			0.113	0.072
<b>Control variables</b>								
Vote share in prev. national election	0.551***	0.054	0.534***	0.054	0.492***	0.053	0.497***	0.052
Cycle	0.246	0.136	0.236	0.134	0.247	0.141	0.251	0.140
Vertical simultaneity	0.233 *	0.118	0.241*	0.117	0.216	0.122	0.227	0.122
Regional authority	-0.037 *	0.017	-0.032*	0.016	-0.036	0.019	-0.034	0.019
Regional identity	0.102	0.071	0.126	0.070	0.204*	0.085	0.224**	0.085
Regional parliament presence	-0.157	0.138	-0.129	0.137	0.027	0.144	0.064	0.146
Country Belgium = base								
Denmark	-1.616 *	0.605	-1.620**	0.561	-1.827*	0.685	-1.825**	0.673
Finland					-2.730***	0.627	-2.992***	0.641
France	-0.925**	0.324	-1.010**	0.322	-1.058**	0.379	-1.104**	0.377
Germany	0.097	0.317	0.179	0.311	0.046	0.386	0.084	0.382
Italy	-0.319	0.286	-0.391	0.284	-0.425	0.339	-0.473	0.337
Netherlands	-0.388	0.387	-0.339	0.380	-0.757	0.471	-0.719	0.466
Spain	-0.075	0.236	-0.085	0.234	-0.213	0.293	-0.209	0.289
Sweden	-0.552	0.441	-0.519	0.437	-0.807	0.530	-0.781	0.525
United Kingdom	-0.108	0.333	-0.007	0.335	-0.009	0.413	0.074	0.414
Intercept	1.004*	0.434	1.257**	0.438	1.170*	0.488	1.301**	0.492
<b>Model statistics</b>								
Log likelihood	-248.624		-247.165		-294.2863		-294.8004	
ICC	.318		.195		.405		.374	
AIC	541.248		540.329		634.573		637.601	
BIC	621.447		624.175		719.912		726.651	
Phi	0.270		0.279		0.220		0.227	
Variance elections	0.00		0.00		0.22		0.20	
Variance region	0.25		0.07		0.00		0.00	
N (elections)	283		283		302		302	
N (regions)	55		55		56		56	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed-effects linear regression models whereby elections are clustered in regions, whilst controlling for country fixed-effects. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C3.** Models with non-transformed vote shares – European vote share strength

	<b>Reduced model 1:</b>		<b>Reduced model 2:</b>		<b>Full model 1:</b>		<b>Full model 2:</b>	
	Ratio		Interaction		Ratio		Interaction	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-2.801***	0.706	-2.440**	0.912	-2.377*	1.028	-2.069	1.249
Vote share in prev. regional election	0.551***	0.049	0.584***	0.066	0.412***	0.041	0.447***	0.074
Ratio*vote share prev. regional election			-0.021	0.029			-0.021	0.038
<b>Control variables</b>								
Vote share in prev. national election	0.417***	0.050	0.406***	0.051	0.450***	0.046	0.443***	0.049
Cycle	2.284*	0.984	2.268*	0.986	2.376*	1.125	2.343*	1.130
Vertical simultaneity	1.986*	0.794	1.925*	0.796	2.444*	0.943	2.392*	0.951
Regional authority	-0.057	0.066	-0.062	0.066	-0.208	0.109	-0.218*	0.110
Regional identity	0.354	0.430	0.339	0.424	1.001	0.768	0.935	0.760
Regional parliament presence	-0.348	0.820	-0.496	0.847	0.344	1.043	0.253	1.067
Intercept	1.026	1.337	0.847	1.337	3.332	2.152	3.266	2.135
<b>Model statistics</b>								
Log likelihood	-800.594		-802.985		-922.766		-924.990	
ICC	.650		.648		.772		.762	
AIC	1629.188		1635.969		1873.532		1879.979	
BIC	1680.224		1690.651		1925.478		1935.636	
Phi	0.298		0.304		0.282		0.282	
Variance elections	0.50		0.50		0.64		0.63	
Variance region	28.76		28.99		69.96		67.23	
N (elections)	283		283		302		302	
N (regions)	55		55		56		56	
N (countries)	10		10		10		10	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed effects linear regression models with the non-logarithm transformed values of the vote share variables, where elections are clustered in regions within countries. The dependent variable is regionalist parties' regional vote share in European elections in vote share percentages. Regionalist parties previous regional and national vote share is also shown in percentages. Two models are based on the reduced dataset and two are based on the full dataset.



**Table C4.** Robustness analyses of spillover into European elections with probably regionalist, regional and sum of all parties

	<b>Model A: Probably regionalist parties</b>		<b>Model B: Regional parties</b>		<b>Model C: All parties</b>	
	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.082**	0.029	-0.043	0.069	0.159	0.114
Vote share in prev. regional election	0.148***	0.028	0.030	0.025	0.227***	0.039
<b>Control variables</b>						
Vote share in prev. national election	0.322***	0.032	0.845***	0.025	0.617***	0.032
Cycle (EU elec in reg cycle)	0.036	0.048	-0.069	0.056	-0.005	0.092
Vertical simultaneity (EU-reg)	-0.003	0.048	0.059	0.055	0.199*	0.089
Regional authority	0.021***	0.005	-0.003	0.004	0.011	0.010
Regional identity	-0.025	0.020	-0.003	0.023	-0.055	0.053
Regional parliament	-0.038	0.061	0.023	0.048	-0.007	0.068
Intercept	-0.090	0.323	0.134	0.113	-0.449	0.375
<b>Model statistics</b>						
ICC	.930		.107		.811	
AIC	280.801		412.476		940.096	
BIC	333.403		464.347		991.967	
Variance region	0.01		0.01		0.090	
Variance country	0.93		0.00		0.86	
N (elections)	592		557		557	
N (regions)	111		108		111	
N (countries)	10		10		10	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are three mixed-effects linear regression models with parties similar to regionalist parties, including probably regionalist, regional and a combination of regionalist, probably regionalist and regional parties. The dependent variable is these parties' vote share strength in European elections, and elections are clustered in regions which are clustered in countries. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C5.** Model with alternative versions of spillover into national elections as dependent variable

	<b>Reduced model</b>		<b>Reduced model</b>		<b>Full model 1:</b>		<b>Full model 2:</b>	
	<b>1: Vote share</b>		<b>2: Lagged DV</b>		<b>Vote share swing</b>		<b>Lagged DV</b>	
	swing							
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.327**	0.115	-0.214	0.112	-0.279*	0.127	-0.153	0.120
Vote share in prev. regional election			0.460***	0.057			0.367***	0.059
Lagged dv			0.097**	0.032			0.095**	0.032
<b>Control variables</b>								
Vote share in prev. European election	0.022	0.034	0.147***	0.034	0.012	0.037	0.163***	0.036
Cycle	0.066	0.117	0.311*	0.097	0.106	0.122	0.117	0.108
Vertical simultaneity	-0.061	0.206	0.324**	0.068	0.193	0.224	0.089	0.204
Regional authority	0.000	0.012	-0.001	0.012	0.000	0.013	-0.003	0.013
Regional identity	0.114	0.081	0.266**	0.092	0.162	0.092	0.356**	0.104
Regional parliament presence	-	0.113	0.060	0.126	-	0.121	0.081	0.133
Intercept	-0.024	0.243	0.155	0.252	-0.025	0.270	0.198	0.275
<b>Model statistics</b>								
Log likelihood	-486.002		-454.58		-557.585		-515.944	
ICC	.397		.719		.600		.822	
AIC	998.004		939.160		1141.170		1061.888	
BIC	1051.654		1001.063		1195.644		1124.742	
Phi	0.351		0.193		0.384		0.170	
Variance elections	0.00		0.00		0.00		0.01	
Variance region	0.30		0.80		0.82		1.59	
N (elections)	458		458		488		488	
N (regions)	58		58		58		58	
N (countries)	11		11		11		11	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed-effects linear regression models where elections are clustered in regions within countries. Two models show the vote share swing between a national and a previous regional election. Two models include a lagged dependent variable. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C6.** Mixed-effects models of spillover into national elections with country fixed-effects

	<b>Reduced model</b>		<b>Reduced model</b>		<b>Full model A:</b>		<b>Full model B:</b>	
	<b>A: Ratio EU-REG</b>		<b>B: Interaction</b>		<b>Ratio EU-REG</b>		<b>Interaction</b>	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.267	0.136	-0.164	0.216	-0.189	0.144	0.002	0.223
Vote share in prev. regional election	0.416***	0.059	0.434***	0.072	0.335***	0.061	0.380***	0.076
Ratio*vote share prev. reg. election			-0.047	0.078			-0.087	0.078
<b>Control variables</b>								
Vote share in prev. EU election	0.163***	0.037	0.164***	0.037	0.184***	0.038	0.183***	0.039
Cycle	0.089	0.104	0.088	0.104	0.102	0.107	0.097	0.107
Vertical simultaneity	0.207	0.211	0.206	0.210	0.223	0.222	0.217	0.222
Regional authority	-0.023	0.017	-0.024	0.017	-0.030	0.018	-0.031	0.018
Regional identity	0.216	0.107	0.218	0.110	0.264*	0.115	0.262*	0.120
Regional parliament presence	0.110	0.128	0.111	0.128	0.120	0.136	0.123	0.136
Country Belgium = base								
Denmark	0.844	0.603	0.846	0.623	0.862	0.638	0.864	0.667
Finland	1.057	0.858	1.098	0.885	1.655*	0.776	1.718*	0.813
France	-0.500	0.463	-0.509	0.475	-0.621	0.488	-0.618	0.506
Germany	0.413	0.520	0.406	0.534	0.334	0.556	0.198	0.482
Italy	0.246	0.440	0.247	0.452	0.188	0.464	-1.276	0.672
Netherlands	-1.116	0.607	-1.152	0.627	-1.220	0.643	-0.719	0.466
Spain	0.053	0.406	0.050	0.418	0.024	0.432	0.022	0.448
Sweden	-0.994	0.668	-1.023	0.685	-1.126	0.722	-1.163	0.746
Switzerland	0.950	0.619	0.957	0.638	1.000	0.652	1.008	0.680
United Kingdom	0.375	0.509	0.356	0.525	0.379	0.537	0.350	0.559
Intercept	0.788	0.515	0.785	0.525	0.976	0.540	0.935	0.557
<b>Model statistics</b>								
Log likelihood	-444.274		-256.648		--503.911		-504.978	
ICC	.769		.774		.831		.827	
AIC	936.548		941.516		1055.821		1059.956	
BIC	1035.593		1044.688		1156.389		1164.714	
Phi	0.269		0.273		0.230		0.240	
Variance elections	0.00		0.00		0.01		0.01	
Variance region	1.05		1.08		1.70		1.66	
N (elections)	458		458		488		488	
N (regions)	58		58		58		58	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed-effects linear regression models whereby elections are clustered in regions, whilst controlling for country fixed-effects. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C7.** Models with non-transformed vote shares – national vote share strength

	Reduced model		Reduced model		Full model 1:		Full model 2:	
	1: Ratio		2: Interaction		Ratio		Interaction	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.988	0.899	-0.615	1.145	-0.449	1.320	0.331	1.678
Vote share in prev. regional election	0.780***	0.032	0.794***	0.043	0.638***	0.042	0.670***	0.060
Ratio*vote share prev. regional election			-0.022	0.040			-0.044	0.057
<b>Control variables</b>								
Vote share in prev. national election	0.060*	0.028	0.062*	0.028	0.077 *	0.037	0.077*	0.037
Cycle	-0.709	0.888	-0.701	0.888	-0.746	1.114	-0.735	1.114
Vertical simultaneity	-0.951	1.594	-0.975	1.598	-0.976	2.179	-1.022	2.181
Regional authority	-0.151	0.090	-0.155	0.090	-0.195	0.134	-0.201	0.135
Regional identity	0.770	0.658	0.798	0.665	2.284 *	1.063	2.316*	1.071
Regional parliament presence	-1.199	0.920	-1.239	0.928	0.295	1.230	0.198	1.239
Intercept	3.107	1.945	2.978	1.980	3.448	2.908	3.118	2.961
<b>Model statistics</b>								
Log likelihood	-1408.699		-1410.851		-1646.238		-1647.905	
ICC	.676		.680		.841		.831	
AIC	2845.397		2851.703		3320.475		3325.809	
BIC	2903.173		2913.606		3379.140		3388.664	
Phi	0.207		0.210		0.454		0.468	
Variance elections	0.24		0.24		260.36		247.98	
Variance region	46.72		47.59		0.86		0.81	
N (elections)	458		458		488		488	
N (regions)	58		58		58		58	
N (countries)	11		11		11		11	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are four mixed effects linear regression models with the non-logarithm transformed values of the vote share variables, where elections are clustered in regions within countries. The dependent variable is regionalist parties' regional vote share in national elections in vote share percentages. Regionalist parties previous regional and European vote share is also shown in percentages. Two models are based on the reduced dataset and two are based on the full dataset.

**Table C8.** Robustness analyses of spillover into national elections with probably regionalist, regional and combination of all parties

	<b>Model A: Probably regionalist parties</b>		<b>Model B: Regional parties</b>		<b>Model C: All parties</b>	
	Coef.	SE	Coef.	SE	Coef.	SE
Vote threshold ratio	-0.112***	0.022	-0.114**	0.040	-0.304***	0.056
Previous regional vote share	0.436***	0.024	0.458***	0.030	0.554 ***	0.035
<b>Control variables</b>						
Vote share in prev.EU election	0.393***	0.032	0.469***	0.030	0.430***	0.031
Cycle (EU elec in reg cycle)	0.026	0.038	0.058	0.070	0.133	0.084
Vertical simultaneity (EU-reg)	-0.023	0.049	0.021	0.089	0.055	0.118
Regional authority	-0.002	0.003	0.002	0.005	-0.020*	0.010
Regional identity	0.036	0.019	0.057	0.034	0.101*	0.045
Regional parliament	-0.179***	0.050	-0.419***	0.064	-0.153*	0.075
Intercept	0.071	0.053	-0.134	0.097	0.339	0.230
<b>Model statistics</b>						
ICC	.184		.181		.449	
AIC	250.652		1120.512		1384.315	
BIC	301.266		1171.125		1439.530	
Variance region	0.013		0.02		0.07	
Variance country	0.00		0.22		0.18	
N (elections)	736		736		736	
N (regions)	114		114		114	
N (countries)	11		11		11	

Notes: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Shown are three mixed-effects linear regression models with parties similar to regionalist parties, including probably regionalist, regional and a combination of regionalist, probably regionalist and regional parties. The dependent variable is these parties' vote share strength in national elections, and elections are clustered in regions which are clustered in countries.