# Essays in Legislative Politics

## Legislative Leaders and Parliamentary Behaviour

by

Jack Blumenau

# Declaration

I CERTIFY THAT the thesis I have presented for examination for the PhD degree of the London School of Economics and Political Science is solely my own work with the exception of chapter three, which was co-authored with Benjamin Lauderdale. I certify that the theoretical, empirical, and written work for this chapter was equally divided between both authors. I further certify that the idea for chapter two emerged from my previous study for the MPhil in European Politics and Society at the University of Oxford. The copyright of this thesis rests with the author. Quotation from it is permitted, provided that full acknowledgement is made. This thesis may not be reproduced without my prior written consent. I warrant that this authorisation does not, to the best of my belief, infringe the rights of any third party.

I declare that my thesis consists of 55,774 words.

For Sarah

# Acknowledgments

"ETERNITY IS A TERRIBLE THOUGHT," says Tom Stoppard's Rosencrantz, "I mean, where is it going to end?" Although expressing a generic fear of death, Rosencrantz might just as well have been a doctoral student somewhere in the middle of his studies. That my own experience has not been endless is only thanks to the generous help and support of many, many people.

First and foremost, my thanks go to my supervisors at the LSE – Simon Hix and Sara Hobolt. Simon's enthusiasm, passion, and encouragement are matched only by the insight and rigour that he contributed to my work. It was also his guidance – from my days as an undergraduate – that inspired me to pursue postgraduate study in the first place. Sara has never failed to provide astute guidance and perceptive criticism, and my work is infinitely better because of her supervision. I also thank her for contributing to whatever comparative advantages I possess.

I owe an especially large debt to Ben Lauderdale, who has acted as a co-author, an unofficial supervisor, and a friend. Almost exactly three years ago, Ben suggested that we write a paper together, but I don't think that he can possibly have known what he was letting himself in for. The work I present here would be less methodologically rigorous and less substantively interesting had I not been the grateful recipient of his help. Also, my plots would have been significantly uglier without his criticism.

Many other faculty members at the LSE also took the time to speak with me about my research, to read drafts, and to offer advice. In particular, I am grateful to Andy Eggers, Dominik Hangartner, Stephane Wolton and Thomas Leeper. I also thank Radek Zubek at Oxford for starting me off on the path that led to this thesis (especially chapter two) and for teaching me how to think critically about

legislative politics. Arthur Spirling welcomed me for my short stay at Harvard, an experience for which I am very grateful. The Economic and Social Research Council funded both this trip, as well as my postgraduate studies as a whole, and to them I also offer my thanks.

I am particularly lucky to have studied with an exceptionally talented, supportive, and funny group of friends. For the long walks to work in Oxford, and being there throughout, I thank Fabian. For talking to me about work, and reminding me why it is important, I thank Øyvind. For talking to me about anything other than work, and reminding me why other things are important, I thank Dave. For support of all sorts and particularly for reminding us when it was time to go to the pub, I thank Laura. For reminding me of when things are "perfect", I thank Nic. For commenting on drafts, helping with teaching, and generally providing me with good cheer, I also thank Eri, Ali, Ignazio, Mona, Chris, and Dawn.

My family – Mum, Dad, Dan, and Harry – always provided support when I needed it most, and (although they will find it uncomfortable for me to say so) have also been a constant source of love and affection. To them, I can only apologise that there are no Georgian monologues, tap dances, or Disney characters in this thesis.

Finally, my thanks, and more importantly my love, goes to Sarah – my very own Black-Eyed Sue. Over the past five years I have written a PhD thesis, which I dedicate to her. Over the past nine months, she has grown us a daughter. I am well aware that, as with all aspects of our life together, her gift to me is greater than mine is to her. Without her I could never have started this journey, and without her I cannot imagine finishing it.

Here, Rosencrantz. It ends here.

6

# Abstract

The essays in this thesis explore the effects of legislative leaders on the behaviour of parliamentarians in the European Parliament and the UK House of Commons, and the consequences of this relationship for parliamentary outcomes. The first paper argues that when party leaders are motivated to maintain the voting cohesion of their legislative contingents, and when disciplinary resources are in short supply, leaders may block policy proposals that threaten to divide their members. Accordingly, as the preferences of party members become more diffuse, agenda-setting party leaders will be able to maintain cohesion but the actions they take to do so may contribute to the overall level of gridlock in the legislature. I introduce new data and methods to evaluate these relationships in the European Parliament, where agenda control and 'carrot and stick' disciplinary powers are held by different sets of parliamentary actors. The second paper argues that by making the status quo less attractive and by increasing legislators' tolerance to new policies, external crises empower leaders who have the ability to propose legislation. In the context of the European Union's response to the 2008 financial crisis, I combine topic modelling with a two-stage least squares procedure to show that voting coalitions in the European Parliament changed after the crisis in ways consistent with the theoretical model. The implication of the analysis is that pro-integration agenda-setters were able to pass legislation in the post-crisis period that would have been impossible to pass in the absence of the crisis. In the third paper, I argue that when members of previously under-represented groups are appointed to positions of high office within the legislature, they can serve as role

models to their fellow group members. Using a difference-in-differences design, I demonstrate that the appointment of a female cabinet minister in the UK House of Commons leads to an increase in the participation of other female members of parliament in legislative debates. Furthermore, I develop a novel approach for measuring the influence of legislators in debate, and use this to show that female members of parliament also become more influential following the appointment of a female minister. In exploring the mechanisms that underpin this role-model effect, I introduce an additional quantitative measure which reveals that female ministers are more responsive to the speeches made by female legislators than are male ministers. Taken together, these papers provide important theoretical arguments and empirical evidence concerning the central role that leaders play in the legislative process.

# Contents

# List of figures

# List of tables

# 1

# Introduction

HOW DO LEGISLATIVE LEADERS affect the behaviour of their fellow parliamentarians? What are the consequences of this relationship for legislative outcomes? As is the case in other hierarchical organisations, legislatures are marked by an asymmetric relationship between a select group of influential leaders and a mass of less powerful followers. From party leaders, to cabinet ministers, to committee chairs, to Speakers of the House; many positions in the legislature are associated with significant resources, both formal and informal, that give the holders of such offices disproportionate influence over the legislative process. Studying the behaviour of these actors therefore sheds light not only on where political power is located, and by whom this power is exercised, but also contributes to our understanding of the outcomes that are produced by democratic bodies. The three papers which form the core of this dissertation each provide distinct contributions – theoretically and empirically – to our understanding of legislative politics, but all three are centrally concerned with the relationship that those at higher levels of the legislative hierarchy have with those at lower levels.

Leaders are commonly viewed as solutions to collective action problems faced by individual legislators (Fiorina and Shepsle, 1989; Cox and McCubbins, 1993; Cox,

2006). Leadership institutions provide a structure through which parliamentarians can obtain their objectives "more efficiently, more effectively, or with higher probability than [they] could without the coordination and enhanced productivity provided by the leadership institution." (Fiorina and Shepsle, 1989, 20) First, leaders can help legislators to overcome collective dilemmas that are internal to the legislative process. For example, in the absence of a centralised leadership with powers to regulate access to scarce plenary time, legislatures will be beset by common-resource problems (Cox, 2006). Furthermore, by uniting under the banner of a durable party and endowing party leaders with institutional privileges, parliamentarians are able reduce the chaotic nature of policymaking and institutionalise access to the gains from legislative trade (Schwartz, 1977; Aldrich, 1995). Second, leaders can also provide collective benefits outside of the legislature. By helping to secure a record of policy accomplishments, party leaders contribute to the maintenance of a strong party 'brand' (Cox and McCubbins, 2005), which positively affects the reelection probabilities of party members. In general, by voluntarily delegating power to central legislative authorities, parliamentarians can avoid problems common to group action dilemmas and secure the gains of acting collectively.

Whether leadership institutions are created in response to internal or external incentives, once created these institutions have profound implications for the nature of politics within legislative settings. Accordingly, taking this literature as a point of departure, the papers in this thesis focus on the *consequences* of the decision to delegate power to legislative leaders, rather than on the *causes* that underpin this decision. I therefore treat the existence of leadership institutions within parliament as given, and focus instead on the effects that leaders have on the behaviour of other legislators and the subsequent implications for policy.

By focussing on the role of leaders in the legislature, this thesis contributes to a broader literature on political leadership, which has grown significantly in recent years (Ahlquist and Levi, 2011). From a theoretical perspective, this literature has focussed on the role of political leaders in promoting institutional reform (Schofield, 2006; Levi, 2006), in coordinating the actions of a mass of followers (Dewan and Myatt, 2007, 2008, 2012; Bolton, Brunnermeier and Veldkamp, 2008), and in structuring the policy agenda (Fiorina and Shepsle, 1989; Shepsle, 2010). However, although our theoretical understanding of the consequences of political leadership has advanced significantly because of these insights, empirical analyses – particularly those conducted in observational settings – have lagged behind. As Ahlquist and Levi (2011, 19) suggest, empirical approaches to studying political leadership "are still in their infancy." Empirical work in this area therefore has the potential to contribute significantly to our understanding of legislative politics specifically, and of political leadership more broadly. The papers I present below combine theoretical analyses with quantitative evidence to highlight distinct mechanisms through which leaders influence politics in the legislature.

I explore three themes of legislative leadership. First, a ubiquitous feature of all legislatures is that plenary time is a scarce resource, the efficient use of which requires regulating by centralised figures. In many cases, party leaders control how floor time is allocated to different parliamentary business. As Cox (2006, 142) suggests, "while legislators are everywhere equal in voting power, they are everywhere unequal in agenda-setting power." This power gives leaders significant ability to control the flow of legislative traffic. In the first paper (chapter two), I consider the consequences of these *negative agenda-setting powers* when leaders have incentives to maintain cohesive parties in the legislature. Where party leaders have only a limited ability to discipline their members, I argue that they

can manipulate the legislative agenda to prevent divisive proposals from being considered on the house floor. However, by pursuing such a strategy, leaders affect not only the behaviour of their own members, but also the composition of the policy agenda in a political system more generally. While existing research emphasises the importance of inter-party polarisation as a key determinant of legislative gridlock, this paper, by exploiting a unique source of data from the European Parliament, provides evidence that *intra-party* division can also lead to gridlock.

The second paper (chapter three, coauthored with Benjamin Lauderdale) examines the conditions under which legislative leaders use their ability to propose legislation in order to manipulate political outcomes. Although it is well known that those with proposal power have important advantages in determining policy (McKelvey, 1976; Romer and Rosenthal, 1978), the conditions under which these *positive agenda-setting powers* are most beneficial have not been fully articulated (Ahlquist & Levi, 2011, 20; Persson & Sjostedt, 2012, 618). We contribute to this endeavour by examining the degree to which agenda-setting actors are able to obtain preferential policy outcomes in periods of external crisis. By modelling a crisis as an exogenous shock to the quality of the status quo, we argue that crises increase the tolerance of legislators to new policy and that leaders therefore have more discretion over policymaking during crisis periods. Leaders can exploit a crisis by using their proposal power to realign voting coalitions in their favour, which enables them to implement policies that would not have been possible in the absence of an external shock. We evaluate our approach by examining the effects of the financial crisis of 2008 on politics in the European Parliament.

The third paper (chapter four) considers the effects that legislative leaders have on the representation of interests in parliamentary deliberations. Here, I focus on

the symbolic effects of political leadership, rather than the institutional foundations of leaders' powers, and ask whether the identity of a leader can influence legislative behaviour (Humphreys, Masters and Sandbu, 2006). Specifically, I consider the potential for legislative leaders to act as *role models* to their fellow parliamentarians in the UK House of Commons. By analysing the participation and influence of female legislators in parliamentary debate, I show that the appointment of a legislative role model – a female cabinet minister – can have important motivational effects for other women in the legislature. The evidence presented in the third paper therefore emphasises a distinctive type of influence of parliamentary leaders, but nonetheless also stresses that the incentives garnered by the hierarchical structure of parliaments can affect the behaviour of legislative members.

In sum, the first two papers in this thesis add new insights to an extensive literature which considers the consequences of leaders' agenda-setting powers on the behaviour of parliamentarians and on policy outputs. The third paper also focusses on privileged legislative actors, but analyses the symbolic consequences that these actors have for the representation of interests in parliamentary deliberations. Overall, the three papers emphasise that in order to understand outcomes of the legislative process, it is vital to appreciate how the behaviour of those holding leadership positions affects the behaviour of other legislators. In the remainder of this introductory chapter, I discuss the core themes of the thesis in more detail, and highlight the substantive contributions that the papers make to the existing literature. I then discuss the parliamentary settings I examine and the methodological contributions of the thesis.

Central to the question of successful collective action amongst party members is the degree to which such members vote *cohesively* in legislative roll-calls. In line with colloquial accounts which suggest that "divided parties do not win elections", cohesion can be a valuable collective good because it helps party members electorally by establishing a reputation of legislative accomplishment (Cox and McCubbins, 1993). In addition, incentives for cohesion also arise within the legislative process itself. By committing to cohesive voting strategies, party members can strengthen their leader's hand in intra-parliamentary bargaining (Bowler, Farrell and Katz, 1999), enforce log-roll arrangements between co-partisans (Weingast, 1979; Carrubba and Volden, 2000), and induce other parties to make more favourable policy proposals (Dewan and Spirling, 2011).

Despite these benefits, party voting cohesion is often under-supplied: while legislators may value the collective benefits provided by cohesive parties in the long run, they may also face incentives to defect from the party line on individual roll-call votes. A strong legislative party leadership can help to ameliorate this problem. As leaders are responsible to the party as a whole, and the continuation of their leadership is tied to the success of the party, they will internalise the collective interests of party members. As Aldrich (1994, 335) argues, because leadership positions are valuable to the office holders, it is "generally in the leaders' self-interest to act in the collective interests of their party." Members therefore have strong incentives to delegate powers to the leadership to enforce cohesive voting (Fiorina and Shepsle, 1989; Cox and McCubbins, 1993). As party member preferences become more diffuse, the severity of the collective action problem increases, and leaders must rely more heavily on the tools available to them to

maintain cohesion.

Which powers allow leaders to maintain voting cohesion in the face of an ideologically diffuse membership? First, an extensive literature focusses on the 'disciplining' power of party leaders to reward loyalty to and punish defection from the party line (Cox and McCubbins, 1993; Benedetto and Hix, 2007; Becher and Sieberer, 2008; Kam, 2009). As Shepsle (2006, 31) argues, leadership "may be interpreted as giving some agent the authority to wield carrots and sticks – that is, to provide selective incentives – to induce contributions to group objectives". According to this view, leaders use inducements (such as internal advancement in the legislature) and sanctions (such as revocation of the party whip) in order to force legislators to toe the party line. Second, in the absence of such 'carrot and stick' disciplinary tools, leaders can often use negative agenda-setting powers to prevent divisive legislation from being voted upon on the plenary floor (Rohde, 1991; Cox and McCubbins, 2005). The degree to which leaders favour discipline over agenda control is likely to depend on their institutional access to these tools, and the relative costs that each strategy carries.

However, while these leadership tools may have equivalent effects on the aggregate cohesion level of a party in parliament, they have strikingly different implications for legislative outcomes more generally. In particular, the use of agenda-control powers is an important determinant of legislative 'gridlock'. Actors possessing negative agenda-control powers constitute veto players in the policy process – their assent is necessary for any bill to change the status quo. As the preferences of veto players diverge, the set of status quo points amenable to revision decreases (Tsebelis, 2002). In systems of divided government, where both the executive and legislative branches possess some degree of negative agenda power, increasing polarisation between parties can dramatically increase the level

18

of gridlock in the system (Binder, 2003, 1999; Jones, 2001).

In contrast to this literature, chapter two considers the effects of *intra-party* polarisation on leaders' use of negative agenda control and the subsequent implications for legislative gridlock. In the context of the European Parliament, where disciplinary resources and agenda-setting powers are largely controlled by separate actors, I show that the strategic use of negative agenda control can indeed help party leaders to maintain high levels of cohesion in roll-call votes, but in doing so they prevent certain proposals from progressing in the legislative process. The results therefore suggest that in addition to polarisation between parties, preference dynamics *within* political parties can have substantial consequences for legislative gridlock. Furthermore, by studying the behaviour of party leaders in the European Parliament – where electoral motivations for legislative success are relatively weak – the findings in chapter two also allow us to separate the legislative incentives for cohesion from the incentives arising from a fear of electoral defeat.

EXTERNAL CRISES AND POSITIVE AGENDA-SETTING POWER

A second dimension of agenda power is the ability of leaders to positively set the content of the plenary agenda – that is, the power to propose legislation. Those with proposal power have distinct advantages over other decision makers in terms of obtaining policy outcomes that they favour (Romer and Rosenthal, 1978). By confronting them with a 'take-it-or-leave-it' choice, (positive) agenda-setters force legislators to choose between new proposals and existing policy. Leaders with positive agenda-setting power are therefore able to select their most preferred policy from the set of all policies which a majority of parliamentarians would prefer to the status quo, thus resulting in considerable discretion over final policy

outcomes. Accordingly, while legislators may delegate agenda-setting power to their leadership agents in order to overcome problems of collective action, once in possession of these powers leaders may exploit unattractive existing policies to secure outcomes that they prefer.

That leaders can manipulate final policy outcomes via their control over the content of the agenda is well known (McKelvey, 1976), but, as Alquist and Levi (2011, 20) suggest, "we have yet to explore actual political contexts in which manipulation is more likely and with what consequences." In chapter three, I build on the model of positive agenda setting described above to elucidate one context in which leaders are particularly well situated to manipulate the policy process: in times of political crisis. A crucial component of these models is that the policy discretion that agenda-setting leaders enjoy is related directly to the attractiveness of the status quo policy. As Cox (2006, 155) argues, "the more distasteful the policy outcome absent further legislative action will be, the wider the range of proposals that the agenda-setter can offer that the assembly will accept." As the status quo becomes less and less attractive, the agenda-setter is more and more able to move policy toward her preferred outcome. In the model I present, when a crisis hits and the status quo becomes less attractive, legislators become more tolerant to new policy proposals, which allows leaders to pass legislation that would have been voted down in times of 'normal' politics.

This view accords with arguments that suggest crises open 'windows of opportunity' for various actors in the policy process (Kingdon, 1995; Keeler, 1993; Cortell and Peterson, 1999). However, these arguments do not generally specify the micro-mechanisms that lead to such opportunities, nor do they identify the specific actors who benefit from crises. Without these features, we can say little about the processes through which crises affect decision-making, nor the expected

direction of policy change in the face of a crisis. The model I present in chapter three specifies a particular impediment to policy change (the opposition of legislators in a parliament) that is weakened by the onset of a crisis, and shows that it is those actors in possession of proposal powers who are especially well-placed to exploit crisis situations. Therefore, beyond simply asserting that crises open 'windows of opportunity' for policy change, my approach clarifies the actors for whom such windows appear to open, and in which direction we expect the winds of change to blow.

In addition, a central concern in the literature on voting in democratic parliaments is in describing the 'dimensionality' of the political space (Poole and Rosenthal, 1997, 2011; Clinton, Jackman and Rivers, 2004; Hix, Noury and Roland, 2006; Shor and McCarty, 2011). The number of active dimensions and the positions that parliamentary actors take on these dimensions are clearly relevant for understanding a broad range of legislative phenomena. While dimensions of political contestation in many parliaments appear to be relatively stable, new dimensions do appear and old ones strengthen or weaken over time (see, for example, Poole & Rosenthal 2011, 141-142). My focus on crisis politics reveals that agenda-setting leaders during crisis periods will often make policy proposals that divide legislators according to dimensions of politics that previously were less central to contestation. The argument I present therefore shares similarities with the Rikerian view of 'heresthetic', in which a leader attempts to add new dimensions to the political space that separate voters in a manner that is advantageous to her (Riker, 1990, 51). I detail one instance of such a shift in dimensionality by examining voting coalitions in the European Parliament during the 2008 financial crisis, but the findings may also help to explain changes to the dimensions of politics documented in other settings.

21

BEYOND INSTITUTIONAL POWERS: LEADERS AS ROLE MODELS

The structural theories described above attribute leaders' influence to the institutional (specifically, agenda-setting) privileges they enjoy. However, by focussing on the institutional powers of a leader, we risk neglecting another important question: does the identity of the leader matter for the outcomes of the political process? As Ahlquist and Levi (2011, 15) suggest, "a basic question is whether there is any evidence that the identity of a leader makes a discernible difference for policy or organisational performance." It is clear that the privileged position of leaders in the legislative hierarchy confers more than institutional strength. Leaders are also highly visible actors both to the electorate and within the legislature to other members. This visibility may be especially important when leaders share characteristics or identities with certain demographic groups that have traditionally been under-represented in the political process. When this is the case, a newly appointed leader may represent a *role model* for other members of the group.

Women represent a particularly prominent under-represented group in parliaments across the world. Female legislators account for just 20% of the seats in national legislatures on average (Karpowitz and Mendelberg, 2014, 11), and they have also been under-represented in positions of executive power historically (Bauer and Tremblay, 2011; Krook and O'Brien, 2012). The extensive literature on the representation of women in politics suggests that increasing the *number* of women in parliament will increase the incorporation of women's interests in policy outcomes (Dahlerup, 1988; Phillips, 1995; Lovenduski and Norris, 2003; Mansbridge, 2005). While the relative number of male and female legislators may be important, scholars have called for research that moves beyond these 'numbers-based' theories (Beckwith, 2007). As Reingold (2008, 145) argues: "Be-

yond questions of numbers and proportions, we could examine more closely the collective resources of female officeholders – how those resources are amassed and with what effect." I follow this advice by asking whether women who are elevated to positions of high political office act as role models to their fellow female legislators.

Previous research has focussed on the potential for a female role-model effect in electoral politics. Does the election of a female politician encourage other women to run for office? Do female politicians inspire an interest in politics from the female electorate, and does this lead to greater participation in political activities? Research suggests that the answer to these questions is affirmative (Wolbrecht and Campbell, 2007; Broockman, 2014; Gilardi, 2015; Beaman et al., 2008, 2012). Outside of political science, the idea that female role models can affect the behaviour of other women is also well established. A broad literature in economics and social psychology shows that female role models in education can influence the course choices of female college students (Neumark and Gardecki, 1996; Rask and Bailey, 2002; Bettinger and Long, 2005; Lockwood, 2006), as well as having significant effects on future career aspirations and achievements (Gilbert, 1985; Nixon and Robinson, 1999; Marx and Roman, 2002; Marx and Goff, 2005; Brajer and Gill, 2010).

In legislative politics, a number of scholars have argued that female role models may potentially be important (Jalalzai & Krook, 2010, 17; Dovi, 2002, 730), particularly with regard to the motivational effects they may have on the participation of other female politicians in the policymaking process. As Dovi argues, "the ability to inspire and to be an example of a political leader from a historically disadvantaged group could be crucial for *mobilizing* that group." (Dovi, 2002, 730, emphasis added) However, political scientists have not subjected this

idea to systematic empirical scrutiny. This is surprising, as by challenging prevalent stereotypes, successful women can improve other women's belief in their own abilities and, hence, their aspirations and behaviour (Stout et al., 2011; Asgari, Dasgupta and Cote, 2010; Lockwood, 2006).

Chapter four addresses this gap in the literature by examining the effects of female control of one important legislative resource – cabinet ministries in the House of Commons – on the speechmaking behaviour of other female members of the legislature. In addition to being an increasingly studied form of legislative behaviour (Quinn et al., 2010; Proksch and Slapin, 2012; Lauderdale and Herzog, 2016), parliamentarians' speeches are important indicators of the representation of interests in the policymaking process. By exploiting variation in the gender of cabinet ministers over an 18-year period, chapter four uses a multi-period 'difference-in-differences' design to estimate the causal effect of the appointment of a female cabinet minister on the participation of other female legislators in plenary debates. The results indicate that the appointment of a female minister increases not only the *participation* of other female members of parliament, but also the *influence* that female members enjoy when discussing policy.

In sum, the papers in this thesis make a number of substantive contributions to our understanding of legislative politics, and, in particular, to the role that legislative leaders play in the policy process. In the next section, I describe the settings in which I investigate the theoretical ideas described above, and identify additional literatures to which the findings pertain.

The European Parliament and the UK House of Commons

While cross-national studies of legislatures have provided answers to a number of important questions (Blondel, 1973; Döring, 1995; Shugart and Carey, 1992;

24

Matland and Studlar, 2004; Carey, 2007, 2009), establishing credible inferences about the impact of specific institutions on legislative behaviour is considerably more difficult in a cross-country context than in analyses of single legislatures. In each paper, I therefore choose to study a legislative setting which allows me to test the theoretical arguments at the heart of the thesis. I focus on two specific legislatures: the European Parliament (EP) and the UK House of Commons. In this section, I briefly preview the advantages that these legislatures offer for evaluating the theoretical arguments described above.

First, a central empirical challenge associated with assessing theories of negative agenda control is that the effects of agenda control and discipline on voting cohesion are difficult to disentangle. In most national parliaments, disciplinary resources and powers of agenda-control are both held by the leaders of government parties. When this is the case, the two mechanisms have equivalent empirical predictions in terms of voting cohesion. Simply put, observing high levels of party cohesion tells us little about whether leaders are whipping their members to toe the party line, or restricting the agenda to prevent division (Honnige and Sieberer, 2011). Despite this observational equivalence, the use of these tools have very different implications for the scope of the legislative agenda and the degree of gridlock in the political system. The European Parliament offers a useful setting for separating the effects of agenda control and discipline, as these tools are largely controlled by separate actors. While national party leaders have primary control of the strongest disciplinary mechanisms, it is the leaders of the European Party Groups (EPG) who, under certain conditions, control the plenary agenda. In chapter two, I exploit this unique structure of European Parliament politics to document the frequency with which leaders use their powers of negative agenda control, and relate this to the internal heterogeneity of the EPGs. The EP is

therefore an excellent setting for testing the model I propose.

The model in chapter three reveals that crises empower those with proposal rights, and the central implication is that crises should result in policy moving toward the position of the agenda-setter. This theory could be used to understand crisis politics across a wide range of legislative settings. However, the challenge of verifying such a proposition empirically is non-negligible. Status quo points and new policy positions are poorly identified in standard models of roll-call voting (Poole, 2005; Poole and Rosenthal, 2011), and the methodological difficulties associated with measuring changes in policy such as those I describe are well known (Richman, 2011; Woon and Cook, 2015), meaning that the opportunities for empirical validation of the model are limited.

However, the model I present produces additional observable implications of crisis politics when the pre-existing political space is multidimensional. When legislative politics is structured by more than one dimension of contestation, crises will also have consequences for the membership of the winning voting coalition in roll-call votes: a quantity that is more easily measured than shifts in policy. I consider the effects of a particularly important external shock – the financial crisis of 2008 – in the context of the European Parliament, the politics of which is structured along two distinct dimensions (Hix, Noury and Roland, 2006, 2007). Of course, the EP is not the only legislature in which politics is multidimensional, and an additional advantage of testing the model in this setting is that the preferences of the agenda-setting actors in the European Union are well-known and easily measured, which makes it straightforward to develop expectations about these actors' behaviour during the crisis period. Consequently, while the theoretical approach is more generally applicable, situating the analysis in the context of the European Parliament makes it possible to rigorously test additional expectations

of the model.

Similarly, the House of Commons provides a useful setting for examining the importance of leadership role models in the legislative context. A central feature of the argument in the third paper is that we should expect role models to matter particularly when there is a demographic group that has been historically under-represented in parliament. In the House of Commons, female legislators have traditionally held only a small fraction of seats in parliament, and women face considerable obstacles to participation in legislative activity (Lovenduski, 2005; Childs, 2004). Furthermore, in addition to their important institutional powers, cabinet ministers in the UK are highly visible actors within parliament, and play a central role in legislative debate (Rogers and Walters, 2006). Accordingly, if female leaders do act as role models to their fellow parliamentarians, the House of Commons represents a promising case for evaluating such an expectation. In addition, the identification of role-model effects is complicated by the fact that one must separate the causal impact of the leader from the effects of the office that the leader holds. The strategy I use – which exploits variation in the gender of a cabinet minister over time – requires data on women's participation in plenary debate over a relatively long time period. An additional advantage of the examining the potential for role models in the UK is that the speeches made by members of the House of Commons have been digitised, and are easily accessible.

While the 'within-parliament' nature of these papers helps to improve the internal validity of the results I present, the trade-off, of course, comes in terms of external validity. I do not argue that the lessons learnt in the context of the European Parliament or the House of Commons can simply be assumed to operate in other legislatures, but the findings should encourage further study of these topics in different settings. For example, the relationship between intra-party polarisa-

tion and legislative gridlock (chapter two) might also help to explain sclerosis in some areas of policymaking in the US Congress. Likewise, the evidence I present in chapter three focuses on an economic crisis in the EU, but the general message of the model, which relates crises to increased agenda-setter discretion, might help to explain other situations of crisis politics (Howell and Rogowski, 2013) and may provide a useful framework for understanding policy change in crises in the future. Similarly, the approach I take to examine the importance of leadership role models in the process of representation in the House of Commons (chapter four) might also be profitably applied to other legislative contexts in which certain groups have been under-represented historically. More generally, by prioritising internal validity over external validity, I emphasise the importance of understanding the specific distribution of formal and informal powers within each legislative context. As the results demonstrate, even subtle differences in the allocation of leadership powers can have profound effects on policy outcomes.

In addition to the general theoretical contributions made by these papers, the thesis contributes to more specific literatures on legislative politics in the European Parliament and the House of Commons. First, scholars have demonstrated that despite its transnational nature, the EP is a 'normal' parliament in which cohesive parties compete over outcomes in a policy space that is primarily socio-economic (Hix, Noury and Roland, 2007). Existing explanations of party cohesion in the EP have largely focussed on the ability of national parties to 'whip' their members to toe a common EPG line (McElroy, 2001; Faas, 2003; Hix, Noury and Roland, 2005; Ringe, 2010; Klüver and Spoon, 2013). By contrast, less attention has been paid to the possibility that the EPG leaders themselves may utilise their institutional powers to prevent divisive legislation from being considered on the plenary floor.[1]

---

[1]Though see Hix et al. (2007, 105-131).

Chapter two contributes directly to this literature, and suggests that the power of the EPG leaders has been under-appreciated in previous research.

Chapter three also contributes directly to our understanding of the European Union's political response to the 2008 financial and sovereign debt crises. These crises were extraordinarily damaging for EU countries, causing large declines in GDP, foreign direct investment and global exports, and dramatic increases in unemployment. There was also considerable deterioration in the public finances of EU national governments, with several countries brought to the brink of sovereign default. The European Union's response to these economic events was also dramatic, as significant regulatory powers were transferred from the national to the European level, and a number of quasi-federal institutional structures were created (Paulo, 2011). There is a growing literature on the European Union's response to the financial crisis, much of which is focussed on explaining the failure in previous regulation (Taylor, 2009; Begg, 2009; Hodson and Quaglia, 2009; Holinski, Kool and Muysken, 2012), or providing policy recommendations for the future (Dabrowski, 2010; Jacoby, 2014; Grahl and Lysandrou, 2014; Hild, Herz and Bauer, 2014). Although some work has explored the roles played by different EU institutions in forming the crisis response (Copeland and James, 2014; Schimmelfennig, 2014), chapter three provides the first investigation of how the crisis affected the internal politics of the European Parliament. Accordingly, the findings in chapter three contribute not only to our understanding of the role that leaders play in crisis situations in general, but also present new insights into the specific policy response to a complex and important crisis scenario.

In the context of the House of Commons, several studies have analysed the voting decision of MPs (Cowley, 2005; Spirling and McLean, 2007; Benedetto and Hix, 2007; Spirling and Quinn, 2010), but considerably less attention has been paid

to members' speechmaking behaviour. Furthermore, while a number of studies have analysed the representation of women's interests in the House of Commons (Childs, 2000; Lovenduski and Norris, 2003), and the experience of female MPs in participating in policymaking (Childs, 2004), these authors do not generally use quantitative data to evaluate questions of gender and politics in the UK. Those studies that do use quantitative measures of speechmaking in parliament (Bird, 2005; Catalano, 2009) offer interesting descriptive insights into the differential behaviour of male and female MPs, but they tend to be based on very small samples, which limits the generalisability of their findings. Furthermore, to my knowledge, no previous study has considered the importance of female cabinet ministers for the representation of women's interests in plenary debate, nor in the UK political process in general. The approach in chapter four represents a significant contribution to this literature. In addition to describing evidence of a gender-gap in parliamentary debates over an 18-year period based on an analysis of over a million parliamentary speeches, the identification strategy I use allows me to provide causal evidence of the importance of female ministers in the process of representation in the House of Commons.

### Methodological and data contributions

I use a diverse array of data and methods in evaluating the theoretical arguments outlined above. In addition to the substantive findings I present, the data I collect and the measures derived from this data represent two important contributions of this thesis.

The use of roll-call data for testing theories of legislative politics is well established (Clinton, 2012), and I employ roll-call data from the European Parliament to test arguments in chapters two and three. However, attempts to distinguish

between competing theories of legislative politics have been hampered by an over-reliance on parliamentary voting data (Krehbiel, 2006; Richman, 2011). While many of the theories discussed above have 'down stream' implications for voting behaviour, they also imply observable consequences for other forms of legislative behaviour, the analysis of which would provide more proximate tests of the theoretical propositions I discuss. Krehbiel (2006, 22) makes the recommendation "not to abandon roll call analysis but rather to conduct it with a keener eye to …inferential problems …and to supplement it with other kinds of data whenever possible." I follow this advice by collecting new data and developing innovative quantitative techniques which aim to create closer mappings between theoretical concepts and empirical measures than has been possible previously.

First, in chapter two I present a new dataset of parliamentary *agendas* from the European Parliament. Theories of negative agenda control predict the circumstances under which parliamentary leaders will block legislative proposals, but actual blocking behaviour is rarely observed. The data I introduce provides a unique opportunity to observe agenda-setting behaviour directly. In the EP, party group leaders have the opportunity at specific junctures in the policy process to remove items from plenary consideration. By analysing the agendas of the parliament before and after this juncture, I am able to isolate the agenda-setting behaviour of the leaders directly. I also develop a novel 'blocking' test, which relates the frequency with which legislation is blocked to the level of intra-party division on relevant issues. The combination of this data and empirical strategy therefore offers important advantages over previous approaches which mainly rely on roll-call data to infer purposive agenda-setting actions by party elites.

Second, chapters two and three make use of a new dataset of over four thousand legislative *summaries*, which are used to map legislative proposals in the European

Parliament to dimensions of substantive political interest. In chapter two I introduce a probabilistic model for assigning legislative proposals to *a priori* defined dimensions on which we have good measures for the positions of parliamentary actors (McElroy and Benoit, 2007, 2011). Spatial understandings of legislator preferences are central to many theories of legislative politics, and assigning proposals to such dimensions is a common problem for applied researchers. The method I describe uses the summaries of the legislative proposals to assign proposals to expert survey dimensions in a way that closely mirrors intuitive understandings of the *ex ante* defined meanings of those dimensions. In chapter three, my focus is specifically on changes in voting coalitions on crisis-relevant legislation. After linking the summaries to relevant roll-call votes, I combine topic-modelling with a two-stage least-squares regression procedure to provide comparisons between votes on crisis-relevant and non-crisis-relevant legislation before and after the crisis period. These procedures could be applied by researchers who wish to relate legislative texts to pre-determined dimensions of interest in other settings.

Third, chapter four introduces a dataset of over one million parliamentary *speeches* from debates in the UK House of Commons from 1997 to 2015. Existing studies have provided valuable insights into the ways in which MPs communicate (Bird, 2005; Catalano, 2009; Auel and Raunio, 2014), but these works generally study only very small samples of speeches. Although recent work has investigated large collections of historical speech data in Westminster (Eggers and Spirling, 2014, N.d.), I am not aware of any previous study that has exploited the full corpus of parliamentary speech in the contemporary House of Commons. I analyse this data in the context of a multi-period 'difference-in-differences' design, which allows me to isolate the causal effect of a change in the gender of a cabinet minister on the participation and influence of female MPs in parliamentary debate.

In addition, chapter four contributes to a more general empirical endeavour of isolating causal effects of the identity of leaders on political outcomes. There are two primary inferential problems associated with this task. First, leaders are intrinsically linked to the leadership offices they hold, and thus it is difficult to separate the effects of the leader from the effects of the office (Ahlquist and Levi, 2011, 19). Second, the criteria by which leaders are selected may be linked to the substantive outcomes that we wish to study, meaning that any correlation between outcomes and leaders may be the result of a selection process, rather than an independent effect of the leader on the outcome (Humphreys, Masters and Sandbu, 2006). The design-based strategy I employ in chapter four makes progress on these issues by exploiting variation in the identity (here, gender) of the leaders that hold a specific office (here, cabinet ministers) over time. Not only does this allow me to separate the effects of the leader from the effects of the office, it also means that the selection mechansims that lead to some types of leader being appointed to some types of post are held constant. This paper therefore offers a more convincing approach to estimating causal leadership effects than has been the case previously.

Finally, in recent years, researchers have recognised the potential for using digitised political texts to glean deeper insights into how politicians communicate. Political scientists have focussed heavily on two main quantities of interest when using legislative texts as a source of data: first, for scaling the positions of political actors; and second, for measuring the priorities that politicians place on different topics and issues.[2] However, while the priorities and positions of legislators are

---

[2] For examples of text-scaling methods, see Laver, Benoit and Garry (2003); Slapin and Proksch (2008); Benoit, Laver and Mikhaylov (2009); Lauderdale and Clark (2012). For models of topical attention, see Hopkins and King (2010); Grimmer (2010); Quinn et al. (2010); Roberts et al. (2014)

important, when politicians speak, they are usually doing more than expressing their ideological leaning, or contributing to the volume of words uttered on a given topic. Existing measures are therefore somewhat limited, and advancing our understanding of political communication requires moving beyond these two components of legislative speech.

To this end, in chapter four I provide two new quantitative measures of communication in political debate. First, I introduce a measure of *influence*, based on the extent to which words used by one legislator are subsequently adopted by other legislators, and use this to demonstrate that women do not only speak more following the appointment of a female cabinet minister, but that they also become more influential in discussions in parliament. Second, in exploring the mechanisms that drive the role-model effect, I develop a measure of ministerial *responsiveness*, which captures the degree to which ministers engage with the words used by backbenchers in their speeches. Using this measure, I show that female ministers are more responsive to female MPs in parliamentary debate than are male ministers, while no significant gender differences exist in ministerial responses to speeches by male MPs. These new measures allow me to provide a detailed exploration of gender dynamics in House of Commons debates and, more generally, they will be of direct value to other researchers interested in UK politics, as well as to those studying political debate in other legislatures.

Road map

The remainder of this thesis is structured as follows: each of the chapters includes one paper, which is a self-contained piece of research. Chapter two analyses the relationship between negative agenda control, party cohesion, and legislative gridlock in the European Parliament. Chapter three investigates the effects of the

2008 financial crisis on voting coalitions and policy outcomes, also in the European Parliament. Chapter four evaluates evidence for a female role-model effect in the UK House of Commons. In the final chapter, I discuss the implications of the papers, address some general limitations of the thesis, and highlight avenues for future research.

# 2

# Intra-Party Politics, Cohesion, and Legislative Gridlock

Abstract

Where the preferences of party members are more diffuse, it becomes more difficult for legislative party leaders to discipline their members, making agenda control a more attractive means of maintaining party cohesion on the legislative floor. Thus, when disciplinary resources are limited, increases in intra-party polarisation will increase the range of proposals blocked by party leaders. Using roll-call data and a new dataset of legislative 'blocking', I show that these relationships hold in the European Parliament, where agenda control and 'carrot and stick' disciplinary powers are held by different sets of parliamentary actors. These findings have implications for our understanding of European Parliament politics specifically, and for the relationship between intra-party dynamics and legislative gridlock more generally.

How do leaders of legislative parties control their members in roll-call votes? What are the consequences of such control for policy outcomes? Political parties are ubiquitous in democratic politics (Schattschneider, 1942; Aldrich, 1995), and a critical determinant of legislative party success is the degree to which party members vote cohesively in roll-call votes.[1] From an electoral perspective, parties that vote cohesively in legislative votes are more likely to develop a strong party brand which signals competence to voters (Cox and McCubbins, 1993, 2005). From a legislative perspective, by voting cohesively, parties can secure long-term policy bargains between party members (Weingast, 1979; Carrubba and Volden, 2000), induce other actors to make favourable proposals (Dewan and Spirling, 2011), and strengthen their leader's hand in intra-parliamentary bargaining by signalling strength and reliability to potential coalition partners (Bowler, Farrell and Katz, 1999).

When the preferences of party members diverge, leaders can use two broad strategies to compel their members to vote cohesively. On the one hand, party leaders can make use of traditional disciplinary tools to cajole legislators to toe the party line (Sieberer, 2006; Carey, 2007; Benedetto and Hix, 2007; Becher and Sieberer, 2008). Alternatively, leaders may strategically manipulate the legislative agenda to prevent divisive legislation from coming to the plenary floor (Rohde, 1991; Cox and McCubbins, 2005). However, identifying the effects of such 'negative' agenda control on party voting cohesion is empirically challenging, as the parties with strongest control over the parliamentary agenda also tend to be those endowed with a wide range of disciplinary resources. Although the dynamics of

---

[1]I distinguish between cohesion (the frequency with which party members vote together), unity (the ideological similarity between party members), and discipline (the selective incentives used by a leader to enforce cohesion).

party behaviour within the legislature are interesting in their own right, distinguishing the effects of agenda control from those of discipline is also important because – as I argue below – the two mechanisms have different implications for legislative outcomes.

This paper considers the relationship between intra-party preference heterogeneity and negative agenda control in the legislature. I use a simple spatial framework, which builds on existing models of agenda-setting (Cox and McCubbins, 2005), to evaluate the effects of agenda control on both party voting cohesion and on the scope of the legislative agenda. I argue that when leaders are concerned with cohesion, they use their power over the agenda to block proposals which substantial minorities of their parties oppose. A desire for cohesion implies that leaders will be sensitive to the preferences of non-median party members, and will act to protect the interests of these members when deciding which proposals are to be considered on the house floor.

The model I describe results in two testable predictions. First, while existing studies focus on the importance of *inter-party* polarisation as a cause of gridlock (Bowling and Ferguson, 2001; Jones, 2001; Tsebelis, 2002; Chiou and Rothenberg, 2003; Binder, 2003; McCarty, 2007; Krehbiel, 2010), I highlight that when party leaders are concerned with maintaining high levels of voting cohesion, *intra-party* polarisation can also lead to significant restrictions on the scope of the legislative agenda. As leaders must satisfy non-median party members, the range of proposals blocked by the party leader will increase as party-member preferences become more diffuse. Second, while polarisation can have pernicious effects on party voting cohesion, this effect is mitigated when a party leader is able to manipulate the legislative agenda. Therefore, when traditional disciplinary mechanisms are unavailable, party leaders can use their control over the legislative agenda to

buttress party voting cohesion in the face of intra-party ideological polarisation, but they do so at the potential cost of additional legislative gridlock.

I evaluate the predictions of the model in the setting of the European Parliament (EP), which provides three key advantages. First, traditional tools of party discipline and powers of agenda control are primarily controlled by different sets of political actors in the EP. Members of the European Parliament (MEPs) are affiliated with two parties – their national parties and their European Party Groups (EPGs). National parties control the most important disciplinary resources, and when the leadership of the national parties and the EPGs disagree, MEPs follow the instructions of the national group, causing EPG cohesion to decrease (Hix, 2001, 2004; Faas, 2003; Hix, Noury and Roland, 2005; Klüver and Spoon, 2013). However, I argue that under certain circumstances, it is the EPG leaders who control the legislative agenda. Specifically, when an EPG holds the median position in the Parliament's central business-organising body – the Conference of Presidents – its leader is pivotal for agenda-setting decisions. Thus, when an EPG is median, it can manipulate the legislative agenda in order to overcome the collective action problem posed by divisive national parties. Accordingly, the distribution of powers between national and EPG leaders makes it possible to isolate the effects of agenda control on party cohesion.

Second, the absence of an electoral incentive for party cohesion in the EP also makes it possible to isolate a *legislative* incentive for party cohesion. European elections are generally considered to be 'second order' (Reif and Schmitt, 1980), with little connection between the actions of parties in the legislature and the behaviour of voters on election day. This implies that EPGs have little incentive to enforce cohesion in order to strengthen the party 'brand'. Accordingly, evidence of cohesion-inducing behaviour of party group leaders suggests that in-

39

centives arising *within* the parliament are also fundamental to the organisation of legislative parties. The implication of this is that parties matter not only because they provide electoral benefits to politicians, but also because they help to solve collective-action problems inside the legislature.

Third, previous empirical work relies heavily on roll-call data to infer the strategic agenda-setting behaviour of party leaders (Cox and McCubbins, 2005; Gailmard and Jenkins, 2007; Anzia and Jackman, 2013; Jenkins and Monroe, 2015). The EP provides an excellent opportunity to *directly* observe instances of negative agenda control, as EPG leaders are able to remove proposals from the legislative agenda at specific points in the policy process, and parliamentary documents record which proposals are removed at these critical junctures. I introduce new data of all proposals considered by EPG leaders over a 10-year period, which enables me to measure the agenda-setting behaviour of party leaders in the EP. I use this data to relate the probability that a legislative proposal is blocked to the internal division of the agenda-setting party group over the issues contained in the proposal. To do so, I develop a novel text-classification procedure which matches party positioning data to legislative proposals in a more systematic fashion than has been possible previously. I supplement this with a roll-call analysis which examines the consequences of blocking on the cohesion rates of EPGs in parliament. I show that when an EPG holds the median position in the Conference of Presidents, they are able to circumvent the problem of ideological disunity and maintain their high cohesion rates by preventing potentially divisive legislation from coming to the floor.

The paper proceeds as follows. First, I discuss the incentives and strategies that leaders have for maintaining cohesion in legislative votes, and I formalise the agenda-setting argument in the context of a simple spatial model. Second,

I discuss the specific context of the EP and derive expectations for the blocking of legislation and the consequent implications for party cohesion. In the third section, I introduce the data and methodology for testing these implications, and in the fourth, I present results. A final section concludes.

THEORY

Why is cohesion a valuable good for party leaders? Many existing studies focus on the *electoral* benefits that cohesive parties offer to their members. For example, Cox and McCubbins (2005, 21) argue that party leaders are motivated by the desire to protect the party 'brand' in the eyes of the electorate, and that "a party's reputation depends significantly on its record of legislative accomplishment." Party leaders are therefore concerned with avoiding votes on which their party is likely to be defeated, in order to promote an image of legislative strength to voters. Legislative defeats may be especially damaging, but even non-decisive voting defections can have pernicious effects for a party's electoral prospects when they are interpreted by the electorate as signs of weakness and incompetence. As Kam (2009, 9) argues, dissent from the party line "sends a signal of disunity and disorganisation to voters." While legislative defeats may be seen as the apex of party leader ineptitude, defections themselves – even if they are not decisive – can nonetheless be damaging for party leaders.

However, in addition to any electoral efficiencies cohesive parties may bring, incentives arising *within the legislature* may also motivate leaders to take actions to maintain the voting cohesion of their parties. First, legislators have incentives to trade votes on issues which they weakly oppose for the support of their co-partisans on issues that they strongly favour (Weingast, 1979; Weingast and Marshall, 1988;

41

Koford, 1982; Carrubba and Volden, 2000). For example, consider two party members, $i$ and $j$, who cast votes over policies $p_i$ and $p_j$. Each legislator will always vote to approve 'their' policy, but voting to approve the other member's policy is costly. Assume that party member $i$ is pivotal on the vote to approve $p_j$, and $j$ is pivotal for $p_i$. Assume also that the utility that $i$ gains from the successful passage of $p_i$ is greater than the costs she faces from voting for $p_j$, and *vice versa* for $j$.[2] With such a preference structure, it is clear that both $i$ and $j$ stand to benefit from trading votes – $i$ and $j$ both agree to vote for both proposals, guaranteeing positive payoffs for both members.

However, now assume that votes are taken sequentially, such that the vote on $p_i$ occurs at $t_1$ and $p_j$ occurs at $t_2$. If member $j$ votes to approve $p_i$ at $t_1$ (which passes), member $i$ no longer has an incentive to cast a costly 'yea' vote for $p_j$ at $t_2$. As Carrubba & Volden (2000, 264) suggest, the "first voter can vote with the coalition on his bill, and defect thereafter, thus gaining the benefit of receiving his own bill's benefits while not having to pay for any other bills". Thus, because votes on log-rolls are not concurrent, the promise by $i$ to vote for $p_j$ is not credible, and, realising this, $j$ will therefore not vote for $p_i$ in the first period. In short, absent some form of commitment-enforcing procedure, the log-roll will quickly unravel. Although both party members would be better off if they voted cohesively across *both* roll-call votes, each member has incentives to defect on *specific* votes on which they disagree with the other member's position. Cohesion is therefore a valuable public good to all party members, but collective action problems that arise from the inability of legislators to commit to long-run voting strategies leads to an under-provision of cohesion. However, by delegating cohesion-inducing powers to

---

[2]That is, the utility $i$ receives for voting for the two policies is $U(p_i) > 0 > U(p_j)$ and $U(p_i) + U(p_j) > 0$, with $j$'s preferences defined equivalently.

a central party leadership, a party's members can overcome these problems, and secure the benefits of cooperation.

Second, cohesive party voting may also be important for affecting the behaviour of other legislative actors. For example, Dewan and Spirling (2011) show that when an opposition party commits to voting cohesively, it can induce the governing party to make more moderate policy proposals which make all members of the opposition better off. The intuition behind this result is simple: by voting cohesively, an opposition party forces a (non-cohesive) governing party to make proposals that satisfy more moderate government members, thereby shifting policy in the direction of the opposition. Therefore, the ability to commit to cohesive voting strategies can lead to significant improvements in policy outcomes for a given party, even when that party does not hold a majority of seats in parliament.

Third, legislative policy outcomes often reflect the relative bargaining power of different parties, where party power is a function of legislative seats (Snyder Jr, Ting and Ansolabehere, 2005). While a party may hold a certain share of the seats in parliament, the party leader may not be able to credibly promise to deliver the equivalent number of votes on any particular proposal. If legislators vote against their party leaders, leading to a lack of cohesion, this reduces the effective voting weight of the party leader in intra-parliamentary bargaining (Fishburn and Gehrlein, 1985; Gehrlein and Fishburn, 1986). As Sieberer (2006, 171) argues, "expected defections from backbenchers might keep party leaders from forming minimum size coalitions which they would otherwise prefer." Similarly, as interactions between parties within the legislature resemble a repeated game in which deals over policy must be struck on a regular basis, persistent defections might undermine the attractiveness of a party to potential coalition partners. As Bowler et al. (1999, 13) suggest, "political entrepreneurs, who are in the process of building

coalitions, would rather not team up with unreliable partners." Cohesive party voting therefore signals unity to other parliamentary actors and strengthens a leader's hand in intra-parliamentary negotiations.

Finally, defections may signal deeper divisions within the party which a strategic leader would want to avoid. For example, defection in roll-call votes is a strong predictor of party switching (Heller and Mershon, 2009). When legislators consistently find themselves on the losing side of votes promoted by their party leaders, the probability that they will switch their allegiance to other parties increases, and this can have important implications for their original party's control over important legislative offices. In many parliamentary settings legislative resources are apportioned according to group size (Carroll, Cox and Pachón, 2006),[3] implying that if a dissatisfied legislator switches groups, the general legislative resources available to the party leadership decline. Party switching is a common phenomenon, both in the European Parliament, and in other legislative settings (Heller and Mershon, 2005; Desposato, 2006; Heller and Mershon, 2008; Benoit and McElroy, 2009), and to the extent that voting defections signal more profound party division, leaders in such settings will be motivated to limit defections.

These arguments suggest that party cohesion is likely to be valuable to party members because of the internal dynamics of parliamentary politics, rather than because legislators wish to secure a strong party 'brand' under which they can compete in future elections. Overall, however, whether for electoral or legislative reasons, party leaders should be expected to take actions that maintain the cohesion of their parties in legislative votes.[4] As Bowler et al. (1999, 3) suggest,

---

[3]In the European Parliament, for example, committee chairs, seats, and rapporteurships are allocated according to the share of seats each party group holds in the parliament.

[4]I comment on the relevant incentives for party group leaders in the specific context of the European Parliament in the next section.

44

"the maintenance of a cohesive voting bloc inside a legislative body is a crucially important feature of parliamentary life." How, then, can party leaders ensure that their members vote cohesively in legislative votes?

If party members share sufficiently similar preferences, party cohesion will arise naturally, with little or no help from party leaders. Therefore, the observation of cohesive party voting in legislative roll-calls does not necessarily imply that parties are themselves empirically significant (Krehbiel, 1993). Several studies have shown the importance of homogenous legislator preferences for party cohesion (Skjæveland, 2001; Benedetto and Hix, 2007; Sieberer, 2006; Carey, 2007, 2009; Kam, 2009). However, when the ideological unity of a party declines, leaders can use two broad strategies to compel their members to vote cohesively.

First, leaders can use arsenals of incentives and punishments to change the cost-benefit calculation faced by individual legislators so that defection from the party line is more expensive, and loyalty is more rewarding. For example, the strategic use of career advancement can help cajole individual legislators to follow the party line (Bowler, Farrell and Katz, 1999; Benedetto and Hix, 2007; Becher and Sieberer, 2008; Kam, 2009). By attaching career advancement opportunities to voting behaviour, leaders increase the benefits of party loyalty, and off-set any costs legislators might incur from voting contrary to their own preferences. Additionally, a vote of confidence procedure can encourage party cohesion, as the long-term benefit of staying in power is tied to votes on which legislators face short-term policy losses (Diermeier and Feddersen, 1998). Furthermore, party leaders can impose formal (deselection, revocation of the party whip) or informal (social pressure) sanctions on individual legislators who contravene mandated party behaviour (Kam, 2009). The relative availability of these tools to party leaders will, in part, determine the degree to which ideologically heterogeneous parties vote

45

cohesively.

Second, theories of agenda control (Rohde, 1991; Cox and McCubbins, 2005) focus on party leaders' ability to prevent certain proposals from being considered on the floor of the legislature. Rather than inducing their members to vote the party line, leaders can remove from consideration those bills that threaten to divide their parties. Strategic agenda control can help party leaders to maintain party cohesion in at least two obvious ways. First, when a party leader fears that there exist irreconcilable differences between two or more factions of her party on a given proposal, she can simply remove such a proposal indefinitely from the agenda and avoid the inevitable divisive vote on the house floor. Second, a party leader may choose to *temporarily* withhold a proposal from the plenary floor so as to secure more time to apply pressure to recalcitrant legislators, or to secure changes to the proposal that would make it less divisive to her membership. If some party members strongly desire the passage of a given proposal, delaying legislation may provide sufficient incentive for them to accept changes that would water down the proposal but secure the support of legislators who were previously opposed. A leader can thereby secure legislative compromises that satisfy a larger proportion of her party, and allow the proposal to pass on the floor of the house in a relatively cohesive party vote. Accordingly, even when party leaders cannot exercise an absolute veto, control over the timing of legislative proposals can still be beneficial in terms of maintaining party cohesion.

How do these unity-providing strategies interact? When preference unity declines, party leaders should be expected to use *both* discipline and agenda control to maximise their chances of controlling cohesive voting blocs in the legislature. One way of conceptualising these different tools is as substitute goods. As Kam (2009, 210) puts it, "party leaders switch from costly or ineffective means of controlling

46

their MPs to less costly and more effective methods." Empirically, however, this presents a challenge, as it means that the effects of agenda control and discipline on cohesion are hard to disentangle, as both mechanisms often produce equivalent empirical predictions in terms of observed voting behaviour.[5] In most national settings, governing parties typically control both the legislative agenda and the distribution of political offices that allow them to discipline their members. Thus, observing cohesive party voting of government parties does not help us to identify the effects of strategic agenda setting by party leaders.

Fortunately, the distribution of powers to different parliamentary actors in the EP allows us to isolate the effects of agenda-control on party cohesion. MEPs sit as members of European Party Groups (EPGs) – transnational party federations which are identified primarily by their ideological affiliations, rather than national allegiances. However, within each of these groups are clustered numerous national parties of which MEPs are also members. As described below, while national parties hold the most powerful disciplinary resources in the EP, agenda-setting power lies largely with the EPGs. In the empirical analysis, I exploit this structure to isolate the effects of agenda control on EPG cohesion.

Before turning to this analysis, however, I use a simple spatial model to clarify expectations about how changes in the ideological unity of a party will affect the agenda-setting decisions of party leaders. The intuition is simple: when the ideological unity of a party declines, and 'carrot and stick' mechanisms are in short supply, party leaders will use their institutional prerogatives to restrict the plenary agenda and avoid votes on policy proposals which would divide their party

---

[5]An example of this empirical difficulty is demonstrated by the debate between Chandler, Cox and McCubbins (2006) and Honnige and Sieberer (2011) over the sources of party cohesion in the German Bundestag. See also Zubek (2011).

members.

Consider a uni-dimensional policy space, $j$, on which legislators have single-peaked preferences, and where a policy proposal $p_j$ is pitted against the status quo $q_j$. Proposals are considered under open amendment rules meaning that if $p_j$ reaches the house floor it will always pass at the floor median position $f_m$ at final passage. Our focus is on the agenda-setting party, $x$, which is constituted of $N$ members who can be ordered by their ideal points on dimension $j$ and are represented by the vector $x_1, x_2, \ldots, x_N$. Denote the median member of party $x$ on a given dimension as $x_m$. The leader of the party has negative agenda-setting power, such that proposals must be approved by the leader before they are considered by the house. As my interest is in isolating the effects of ideological disunity on agenda-setting, I assume that the party leader is not able to discipline her members: she cannot induce members to support a proposal that is further away from their ideal point than the status quo.

The leader of the agenda-setting party is concerned with protecting some arbitrary fraction of her party from being 'rolled' on the house floor. *Legislators* are rolled when they vote against a proposal, but the proposal is approved on the floor despite their opposition. As a minimum, a leader will always block proposals that threaten to 'roll' a majority of her party. A *party* is rolled when a proposal passes despite a majority of the party's members voting against. Therefore, for a party with an odd number of $N$ legislators, the minimum number of 'aye' voters a leader will tolerate is $\frac{N-1}{2} + 1$. That is, a leader will never permit legislation to be considered on the house floor unless at least a bare majority of her party prefer the floor outcome, $f_m$, to the status quo position $q$.[6]

---

[6]This special case represents the core intuition of other models of agenda-setting (Cox and McCubbins, 2005) and forms a baseline expectation here.

More generally, a leader may be directly concerned with the *cohesion* of her party and thus will block proposals that threaten to make a *substantial minority* of the party worse off. When a leader is concerned with cohesion the minimum number of aye votes she will tolerate is $\frac{N-1}{2}+1+k$, where $k$ determines the desired majority size for the leader on a vote on $p_j$. Intuitively, $k$ represents the additional number of party members a leader would like to see voting to approve the policy over and above a party-majority of 1.[7] If a proposal passes on the house floor and fewer than $\frac{N-1}{2}+1+k$ party members vote for the policy, the leader suffers a utility loss of $l$.

I illustrate the argument in the panels of figure 2.1, which depicts five legislators from two parties on one dimension of conflict. Party $x$ is the agenda-setting party with legislators $x_1$, $x_2$, and $x_3$, where $x_2$ is the median *party* member. Party $y$ has only two legislators, $y_1$ and $y_2$. Legislator $y_2$ is the median *floor* legislator (also marked as $f_m$), and the leader of party $y$ does not possess negative agenda-setting powers. Three status quo locations are labelled $q_1$, $q_2$ and $q_3$.

When the leader of $x$ is simply concerned with preventing the majority of the party from being rolled, she will block any proposal addressing a status quo position that the median legislator of her party prefers to the floor outcome. In panel (a), when $k = 0$, the leader will block any proposal that addresses status-quo points in the white-shaded area which ranges from $f_m$ to $2x_2 - f_m$. Proposals addressing status quo points to the left of $f_m$ or to the right of $2x_2 - f_m$ are preferred by at least two party members. By contrast, proposals which address status quo

---

[7]The maximum value $k$ can take is $\frac{N-1}{2}$, such that the largest 'aye' coalition that a party leader desires is a *completely cohesive* party. The minimum value of $k$ is 0, indicating the case where a party leader is concerned only with preventing majority-rolls. Note that $N - (\frac{N-1}{2}+1+k)$ expresses, for a particular value of $k$, the number of legislators that the party leader will tolerate being rolled on a given vote.

points falling between $f_m$ and $2x_2 - f_m$ will be opposed by $x_2$, and therefore by a majority of the party's members. In general, the range of status quo points on which the party leader will refuse to allow new proposals to come to the floor is the 'gridlock interval.' These intervals are depicted in the figure by thick black horizontal lines. Note that the gridlock interval when $k = 0$ is identical to the 'blockout zone' defined in Cox and McCubbins (2005). In the figure, as all status quo points fall outside of the gridlock interval, proposals addressing these points will be approved by the party leader, and will pass on the floor of the house at $f_m$. Accordingly, when the leader is concerned only with preventing a *party* roll (i.e. when $k = 0$), the distance between the median party member and the median floor legislator determines the range of status quo points for which new proposals will be blocked.

However, when the leader is concerned with maintaining the *cohesion* of her party, her blocking decisions must reflect the preferences of members other than the party median. Consider the gridlock interval in panel (a) when $k = 1$. Previously, the leader was sensitive to the preferences of the median member of the party, where in this case the leader blocks proposals that threaten to roll *any* member of her party. Accordingly, the leader will block any proposal addressing a status quo position in the range $2x_1 - f_m$ to $2x_3 - f_m$, thus increasing the range of blocked proposals. In this case a proposal addressing $q_2$ is rejected: although $x_1$ and $x_2$ would prefer a new policy at $f_m$, $x_3$ prefers the status quo position. By contrast, proposals addressing $q_1$ and $q_3$ will be approved by the leader in both scenarios in panel (a).

In this example, $k = 1$ is equivalent to the party leader demanding that the party votes *unanimously* on the house floor. However, when the party is larger, $k$ can take on any value between 0 and $\frac{N-1}{2}$. The larger $k$ becomes, the higher

**Figure 2.1:** Intra-party polarisation and the gridlock interval
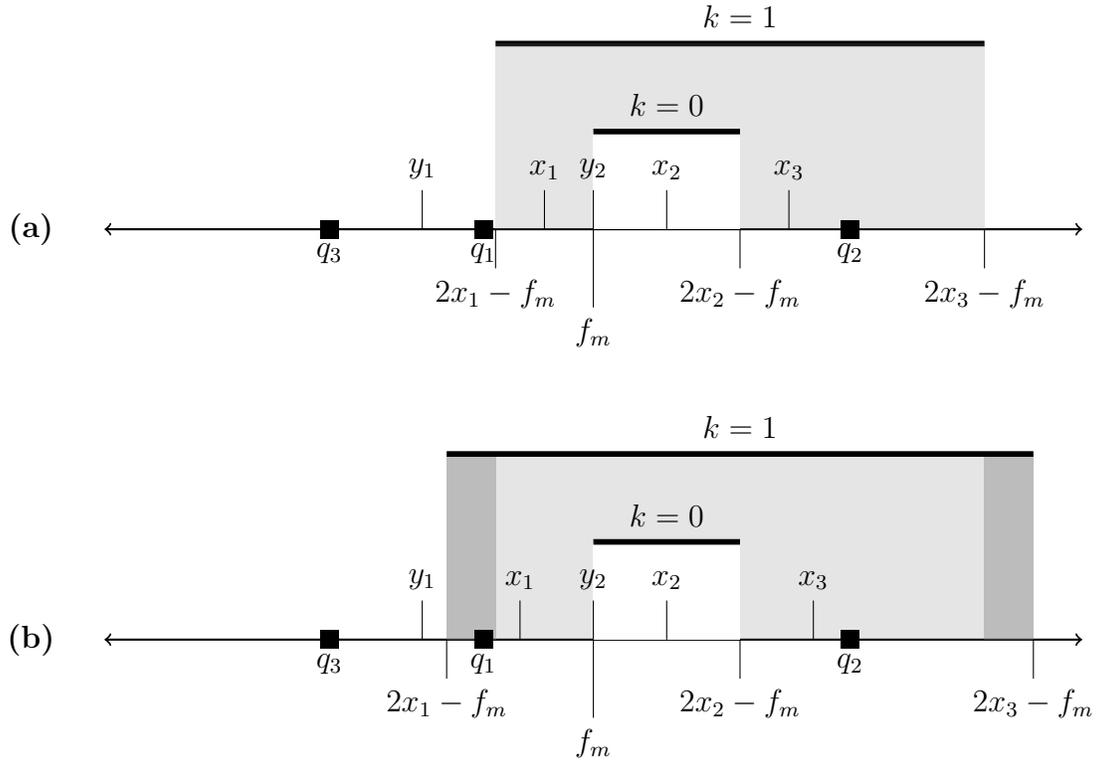


NOTE: In panel (a), the gridlock interval when the party leader is concerned with preventing a majority-roll ($k = 0$) is depicted as the shaded white area. As the median party member ($x_2$) prefers $f_m$ to all status quo points, the leader will allow proposals addressing any of these points to be considered on the floor. When $k = 1$, the gridlock interval is depicted by the union of the grey and white shaded areas. Here, proposals addressing $q_1$ and $q_3$ are approved for consideration, but the party leader blocks those addressing $q_2$ because although a majority of the party ($x_1$ and $x_2$) are in favour of policy change, $x_3$ is not. Panel (b) demonstrates the effect of an increase in party polarisation. While the gridlock interval for $k = 0$ is unaffected, the gridlock interval for $k = 1$ increases such that neither $q_1$ nor $q_2$ will be approved for consideration on the floor, as proposals addressing these points will not be approved by a sufficient number of party members. The dark grey area indicates the extension to the gridlock interval induced by an increase in intra-party polarisation.

51

the cohesion of party $x$ must be on a given proposal before the party leader will approve the proposal for consideration. In general, the pivotal blocking member when $k = 0$ is the median member of the party, $x_m$. When $k > 0$, however, *two* party members are pivotal for the blocking decision: $x_{m+k}$ on the right of the policy space and $x_{m-k}$ on the left. Accordingly, as $k$ increases, the party leader must cater to the preferences of two non-median members.

How does the gridlock interval change as the ideological unity of a party declines? I capture the idea of a decline in ideological unity through the *polarisation* of the agenda-setting party, where polarisation is a median-preserving shift in the positions of the party members. Increasing polarisation implies that members on the left of $x_m$ move further to the left, and members on the right of $x_m$ move further to the right. Polarisation can be understood either as an exogenous decrease in ideological unity or, conversely, as a decline in the efficacy of more traditional disciplining mechanisms for a leader faced with an already ideologically heterogeneous party. In either case, as polarisation increases, so do the incentives for party leaders to restrict the parliamentary agenda.

Panel (b) of figure 2.1 illustrates the effects of polarisation. The party members of $x$ are dispersed more widely around $x_2$ than in panel (a), while the positions of $x_2$, the members of party $y$, and the status quo points remain the same. The position of $x_2$ is not affected by an increase in polarisation, and so when the party leader is concerned only with the prevention of majority rolls ($k = 0$), the size of the gridlock interval is unaffected by polarisation. However, when $k > 0$, as the party leader considers the preferences of two non-median party members, intra-party polarisation has significant effects on the range of the gridlock interval. The polarisation shock increases the distance between the pivotal legislators and the floor median $f_m$, and extends the gridlock interval in both directions. The darker

grey shaded areas in panel (b) indicate the increase in the size of the gridlock interval induced by the increase in intra-party polarisation. A consequence is that a proposal addressing $q_1$, which was approved by the party leader in panel (a), is now blocked. Although $x_2$ and $x_3$ prefer the floor median position to $q_1$, the same is not the case for $x_1$ who would now prefer to preserve this status quo than see a new proposal pass at $f_m$.

This also clarifies how agenda-control affects the relationship between polarisation and average voting cohesion across all status quo points. Consider first the votes on which $x$ will be divided when *all* proposals are considered on the house floor (that is, in the absence of agenda control). In panel (a), members of $x$ will vote to unanimously approve proposals addressing $q_1$ and $q_3$, but will be divided on those addressing $q_2$. In panel (b), after the polarisation shock, proposals addressing both $q_1$ *and* $q_2$ would divide the members of $x$. Thus, in the absence of agenda-control, polarisation leads to a decline in the cohesion of $x$. When the leader can control the agenda, by contrast, in panel (a), the party will vote unanimously to approve proposals which address $q_1$ and $q_3$, but proposals changing $q_2$ will be blocked. After polarisation, proposals addressing $q_1$ are also blocked by the party leader, but those addressing $q_3$ are considered on the floor and passed in a unanimous vote by the members of $x$. Thus because the leader blocks potentially divisive proposals (such as $q_1$ and $q_2$), increases in ideological polarisation will have a weaker effect on the average level of cohesion for agenda-setting parties.

Generalising beyond the specific cases illustrated in figure 2.1, and assuming that status quo points are uniformly distributed across the policy space, there are two central implications of the model. First, when party leaders are concerned with party cohesion, and when they are unable to rely on traditional 'carrot and stick' forms of party management, increases in intra-party polarisation of the

agenda-setting party will be associated with a larger number of blocked legislative proposals. Second, while the cohesion of a party is negatively associated with polarisation, this effect will be less pronounced when party leaders have negative agenda powers.

Of course, intra-party polarisation will not *necessarily* lead to gridlock. If discipline was a viable strategy for party leaders, side payments or sanctions could induce legislators to vote against their preferences and maintain voting cohesion even in the face of ideological polarisation. The more disciplinary resources are available to party leaders, the weaker we should expect the relationship between polarisation and blocking to be. However, so long as a leader's disciplinary resources are not unlimited, the central prediction of the model stands: as intra-party polarisation increases, cohesion-oriented party leaders will block a greater range of legislative proposals. Furthermore, while leaders may be able to both advance their policy interests and maintain cohesion by disciplining their members, these actions may have other costs. For example, as Heller & Mershon (2008, 914) suggest, "a legislator for whom the lash of discipline bites too deeply might see moving to a different party as attractive." When the costs of discipline are high, then, party leaders may prioritise negative agenda control and block divisive proposals rather than forcing their members to vote against their preferences

The model also reveals that by restricting the agenda to prevent divisive bills, leaders face a policy cost: some proposals favoured by a (small) majority of the party are blocked. For example, although $x_2$ and $x_3$ would prefer a new policy at $f_m$ to the status quo policy at $q_1$, the leader blocks this proposal in panel (b) because of the opposition of $x_1$. Such a decision may disappoint legislators $x_2$ and $x_3$, because they know that such a policy, if proposed, would bring them additional utility. If these disappointments come at a significant cost to the leader (say, by

54

being denied re-selection in the future), she may prefer to promote legislation that is disliked by a minority of her party, so long as a bare majority of the party are in favour of such proposals. Of course, this simply restates the assumption that in order for polarisation to affect the level of gridlock in a system, party leaders must be at least partially concerned with the *cohesion* of their parties, and not just improving policy for a bare majority of the party.

Applying the insights of the model to a specific setting therefore requires assessing a) the degree to which a party leaders are motivated to maintain cohesion (i.e., $k$), b) the ability of leaders to discipline their members, and c) the agenda-setting powers of party elites. In the next section I discuss these features in the context of the European Parliament.

Cohesion, discipline, and agenda-control in the EP

In the European Parliament, the electoral motivation for EPG leaders is likely to be considerably weaker than in domestic legislatures. Research suggests that MEPs are aware of the electoral consequences of their voting behaviour (Lindstädt, Slapin and Vander Wielen, 2011), and the relevance of the EPGs to EP elections has grown over time, particularly in the most recent elections where EPGs nominated "Spitzenkandidaten" (lead candidates) for the Commission presidency for the first time. Nevertheless, European elections are commonly interpreted as 'second order' (Reif and Schmitt, 1980), fought on the basis of national issues rather than on the legislative records of the EPGs themselves. Furthermore, it seems likely that – to the extent that voters pay any attention to the internal politics of the EP – national parties are likely to be rewarded for taking positions that are distinct from those of their EPGs, rather than for loyally supporting them within the legislature.

However, as argued above, there are several reasons to think that long-run intra-party voting cohesion is associated with efficiencies that arise solely *within* the legislative process. Thus, although the electoral connection may be weak in the EP, we should nevertheless expect many of these benefits to motivate EPG leaders to maintain cohesion. First, as with other legislatures, individual MEPs are unlikely to be able to construct stable winning coalitions on their own. Cohesive parties in the EP allow legislators to reduce the transaction costs associated with forming coalitions across multiple policy issues, which leads to less volatile behaviour across votes and makes parliamentary politics more predictable (Hix, Noury and Roland, 2007, 89). Accordingly, individual MEPs, and the national parties of which they are members, stand to benefit in the long-run from committing to cohesive voting strategies that support a common EPG line.

Second, in the EP, legislators frequently switch their EPG affiliations from one group to another (Benoit and McElroy, 2009; McElroy and Benoit, 2010). As many legislative goods are distributed proportionately according to group size, party group switching can reduce an EPG's share of important positions such as committee chairs and rapporteurships, as well as diluting their influence in the main business organising body, the Conference of Presidents. Approving legislation on which a particular national party is frequently opposed can lead to frustration with the EPG leadership and may risk all legislators from the national party switching their allegiance to a rival party group.

A case in point is given by the British Conservative Party who left the European People's Party (EPP) to form the European Conservatives and Reformist Group (ECR) in 2009. The decision to leave the EPP followed a period in which the Conservatives frequently found themselves on the losing side of votes promoted by the EPP group leadership. In the session before the Conservatives left

the EPP, they were 'rolled' approximately 20% more often than other national parties in the parliament, and more than *twice* as often as other national parties in the EPP.[8] These legislative defeats were often attributed to the failure of the EPP leadership to protect the interests of the Conservatives. As one Conservative MEP put it, "Our views have not been represented in the Conference of Presidents…we don't influence the EPP but, instead, are compromised by its agenda." (Van Orden, 2006) Although a systematic analysis of the relationship between 'rolls' and party switching is beyond the scope of this paper, EPG leaders clearly have strong incentives to cater to their constituent national parties, and maintain high cohesion rates. Failure to do so can lead to a permanent weakening of the EPG's position in parliament.

Third, the multi-level legislative process in the EU means that EPG leaders are concerned not only with signalling their strength internally to other party groups, but also externally to political actors in the Council and the Commission. For example, using expert survey data, König et al. (2007, 299) show that the more cohesive party groups are in the Parliament, the higher the probability that the Parliament will "win" in conciliation committee bargains with the Council. The importance of cohesion for securing preferential policy bargains in the bicameral process is also acknowledged by parliamentary actors themselves. For instance, in a plenary debate on the Europe 2020 strategy, Jerzy Buzek – then President of the EP – argued, "If we want to influence the situation in the Union, we have to organise a big majority which supports the resolution." (Buzek, 2010) In sum, the inter-institutional nature of EU policy-making reinforces the incentives for maintaining high levels of party cohesion.

Overall, although the electoral incentives for party cohesion may be weaker

---

[8]See appendix section A.1 for the results of my regression analysis.

than for party leaders in national parliaments, incentives arising from *within the legislature* suggest that EPG leaders will use their institutional powers to encourage party cohesion in roll-call votes. This is consistent with the view of Hix et al. (2007, 217), who see the development of the EP as a "case of party formation for the sole purpose of solving collective action problems internal to the legislature." To what extent, then, can party group leaders in the EP use discipline and agenda control to enforce cohesion?

In the EP, the strongest disciplinary powers are held by *national* party leaders. The leaders of the EPGs have some control over the allocation of legislative positions (such as committee seats, chairs, and rapporteurships) giving them a limited ability to structure the incentives of office-seeking MEPs within the parliament (McElroy, 2001; Faas, 2003), but the incentives generated by the electoral system give significant power to the national parties. Candidates for the European Parliament are selected by their national parties, and not by the EPGs. Because national parties can make credible deselection threats, they are therefore in a strong position to discipline their MEPs to toe the EPG line (Hix, Noury and Roland, 2007, 146). The critical question is whether in times of conflict between these two principals MEPs follow their EPG or national party leaders. The overwhelming answer to this question is that it is to national parties, and not EPGs, that MEPs are ultimately responsive (Hix, 2002, 2004; Hix, Noury and Roland, 2007; Faas, 2003; Ringe, 2010). As the national parties within an EPG become more ideologically polarised, they are therefore less willing and able to whip their MEPs to follow a common EPG line and thus the voting cohesion of the EPG declines (Hix, Noury and Roland, 2007, 132-146).

If national parties possess the most powerful disciplinary resources, which actors have the ability to control the agenda in the EP? As there has never been a single

58

majority party in the parliament, agenda powers are widely dispersed, with key positions allocated to the EPGs according to a strict proportionality rule. No single party, therefore, can 'cartelize' agenda-setting offices in the EP (Cox and McCubbins, 2005). Additionally, for legislative issues, the gatekeeping right of initiative resides with the European Commission, with the parliament only able to initiate non-legislative resolutions. More generally, previous studies suggest that there are few formal negative agenda-setting powers available to the EPG leaders (Hix, Noury and Roland, 2007, 105-131).

However, as the EP has grown in legislative stature, the EPGs have reformed the internal rules of the Parliament to their own benefit by centralising institutional power structures (Kreppel, 2002; Whitaker, 2011). These reforms helped to increase the power of the EPGs relative to the national parties, and "the most stunning example of this was the creation of the Conference of Presidents." (Kreppel, 2002, 102) The Conference is a political body responsible for the organisation of parliamentary business, and it is attended by the President of the Parliament, and the leaders of the EPGs. The EPG leaders are therefore afforded special institutional powers that are not available to other actors. Notably, the Conference is not attended by national party leaders in the Parliament, and has thus come to be used as an instrument of centralised control for the EPGs (Kreppel, 2002, 210).[9]

The EP's rules of procedure make clear that the Conference "shall take decisions on the organisation of Parliament's work and matters of legislative planning" and

---

[9] Similar business-organising bodies are found in other legislative settings, such as the College of Leaders in the Brazilian Câmera dos Deputados, the Council of Elders in the German Bundestag, and the Chamber Directorate in the Argentine House of Representatives. Each of these institutions has important agenda-setting powers, and share many procedural similarities to the Conference (Neto, Cox and McCubbins, 2003; Chandler, Cox and McCubbins, 2006; Calvo and Sagarzazu, 2011).

that it "shall draw up the draft agenda of Parliament's part sessions." (European Parliament, 2011, Rule 25) In practice, at the beginning of every part-session, the Conference is presented with a *draft agenda*, which is amended before being finalised. Crucially, amendments may remove items from the agenda, preventing debates and votes on these issues from occurring on the plenary floor. Once approved, a *final draft agenda* is distributed to members of the Parliament. By removing legislation from the draft agenda, members of the Conference of Presidents can effectively prevent legislative proposals from progressing. The Conference therefore has the opportunity, at critical junctures in the legislative process, to control the passage of legislation. With respect to the argument that "plenary time is the sine qua non of legislation" (Cox and McCubbins, 2005, 10), these junctures clearly represent important negative agenda-setting opportunities for EPG leaders in the Parliament. Accordingly, while national party leaders control the main disciplining powers in the EP, it is EPG leaders who, under certain conditions, make agenda-setting decisions. What is crucial, then, is to determine who is able to exercise the negative agenda-setting powers that are held collectively by the Conference of Presidents.

Decision making in the Conference strives for unanimity, but can recourse to simple majority voting, with each group leader's vote being weighted according to the size of that party in the Parliament.[10] As the rules of procedure for the parliament make clear, "where a consensus cannot be reached, the matter shall be put to a vote subject to a weighting based on the number of Members in each political group." (European Parliament, 2011, Rule 24). Agenda-setting decisions in the EP are therefore not made by a majority party with special institutional privileges, but rather in a decision-making game in the Conference. How, then,

---

[10]The President of the Parliament presides over meetings, but does not vote.

are we to understand who is able to make blocking decisions?

In a unidimensional policy space, it is the median voter who is pivotal in decision-making under majority-rule (Black, 1948). The critical feature of decision-making in the Conference is that, although decisions are made by simple majority vote, party leaders are able to vote *as if their parties were completely united.* Therefore, within the Conference, it is the leader of the *median* EPG who is decisive in agenda-setting decisions. Only the party that controls the median position in the Conference can prevent legislation from coming to the floor. Any individual party, or coalition of parties, to either the right or the left of the median party will have fewer than half the seats in the Parliament – and thus votes in the Conference – and so the median party is a necessary member in any blocking coalition. Therefore, when the leader of the median party is concerned that a proposal will divide her party, she can use her position in the Conference and vote with the entire weight of her party group in order to block the proposal.

In conjunction with the analyses in the previous section, this suggests a prediction about the effect of changes to the ideological unity of the median party in the Conference of Presidents. As national parties within an EPG become less united ideologically, the EPG is more likely to face legislative proposals that threaten to divide its members. Additionally, the discipline mechanism that drives party cohesion also declines as national party preferences become more diffuse because national parties are less willing to whip their MEPs to follow a common EPG line. Because EPG leaders have strong incentives to maintain cohesion, as preferences polarise and discipline declines we expect parties with agenda-setting powers to block a larger number of legislative proposals.

Hypothesis 1 *The greater the ideological polarisation of the median EPG on a*

*given proposal, the greater the probability that the proposal will be blocked by the Conference of Presidents.*

This has a direct corollary for party cohesion on the parliament floor. When there is greater ideological polarisation among national parties within an EPG, the national party leaders will be less willing to discipline their members to follow a common group line, and the cohesion of the EPG will decline (Hix, Noury and Roland, 2007, 132-146). However, if the median EPG is able to remove items from the agenda on which it is particularly polarised, the effect of polarisation on voting cohesion will be less pronounced for EPGs when they hold the median position in the Conference of Presidents than when they do not. That is, we should expect that if the party group leaders are indeed strategically manipulating the floor agenda, then this behaviour should also be detectable by examining the relationship between polarisation and EPG cohesion in roll-call votes.

HYPOTHESIS 2 *While the cohesion of an EPG will decline as intra-party preferences become more diffuse, this relationship will be weaker for votes that address dimensions on which the EPG holds the median position in the Conference of Presidents.*

Before progressing, it is also important to clarify expectations for the relationship between party polarisation and cohesion *in the absence of agenda control.* If we expect the cohesion of median parties to be less sensitive to intra-party polarisation even when these parties are unable to block proposals, then empirical evidence in favour of hypothesis 2 would not necessarily identify the effects of agenda control on EPG cohesion. In appendix section A.2 I provide a simple analysis of the relationship between party position, party polarisation, and voting

62

cohesion in a context in which no actor can block proposals from being considered on the plenary floor. The analysis reveals that, in the absence of agenda control, the cohesion of median parties will in fact be *more* sensitive to increases in ideological polarisation than non-centrist parties. The intuition behind the analysis is straightforward: when a party is median, increases in the polarisation of its members results in many instances when members of the party find themselves on opposite sides of an issue. When a party is relatively extreme, polarisation is less consequential because the members of the party are sufficiently far from the point separating 'yeas' from 'nays' on roll-call votes that they will vote together despite their relative ideological differences. Consequently, hypothesis 2 suggests a relationship between intra-party polarisation and cohesion in the European Parliament that is directly opposed to the predictions of a model without agenda control.

Taken together, the hypotheses here suggest two distinct observable implications of the argument that EPG leaders use their strategic control over the plenary agenda to block legislative proposals that threaten to divide their members. In the next sections I introduce new data and methods to test these hypotheses.

DATA AND METHODOLOGY

Empirically evaluating partisan agenda-setting behaviour is non-trivial, and much existing work relies on the analysis of roll-call votes to make inferences about the agenda-setting actions of party elites.[11] While I present a roll-call analysis below, simply documenting an association between agenda-control and party cohesion requires a large inferential leap that the latter is a product of the former. As Kre-

_____

[11]See, for example, Cox and McCubbins (2005); Gailmard and Jenkins (2007); Anzia and Jackman (2013); Robinson (2015); Jenkins and Monroe (2015). See Clinton (2012) for a review.

hbiel (2006, 22) suggests, "the corresponding recommendation is not to abandon roll-call analysis but rather to...supplement it with other kinds of data whenever possible." I therefore introduce a new metric for measuring the agenda-setting behaviour of EPG leaders in the Conference which I use to examine the conditions under which leaders prevent proposals from reaching the plenary floor.

Measuring negative agenda control

The task of directly observing instances of legislative blocking seems especially daunting when, by definition, negative agenda setting entails the absence of issues, rather than their presence. I make progress by collecting a new dataset which focuses on one key agenda-setting juncture in the EP's legislative process where EPG leaders are able to prevent proposals from reaching the plenary agenda. As noted above, at each monthly meeting of the Conference, party group leaders are presented with a *draft* agenda which they are able to modify before it is presented to the parliament as a *final-draft* agenda. To determine whether the Conference of Presidents blocked a proposal, I compared draft agendas to final-draft agendas and recorded which proposals were removed.[12] The unit of analysis is therefore proposals that feature on the draft agendas presented to the Conference, and the dependent variable, *Blocked*, is equal to one if a proposal was blocked (i.e. appeared on the draft agenda for one part-session but was absent from the final-draft agenda), and zero otherwise. Systematically comparing these agendas therefore isolates the role played by EPG leaders in the process of agenda setting in the parliament.

The sample consists of all proposals presented to the Conference of Presidents

---

[12]Unfortunately, while the minutes of each meeting of the Conference are publicly available, they do not systematically document the removal of legislative reports from the final-draft agenda.

64

from September 2004 to April 2014: a total of 4,300 observations. I wrote an auto-mated routine in the $R$ programming language (R Core Team, 2015) to download and process all draft and final-draft agendas in the study period from the European Parliament website. Each proposal is assigned a unique identifier for a given part-session which remains constant between the draft and final-draft agendas for that session, meaning that if the name of a proposal changes between the two agendas, it is still possible to determine whether it has been removed. I searched each draft and final-draft agenda pair for potential proposals, and recorded which proposals were blocked by the Conference. This data constitutes a comprehensive record of the parliamentary proposals considered by the Conference, and provides a unique opportunity to observe agenda-setting behaviour directly.

The central claim is that this metric captures purposive negative agenda-setting behaviour by party leaders. Before turning to the main analysis, I validate this measure by showing that it reflects intuitive expectations about blocking be-haviour. I demonstrate (a) that the measure captures patterns of blocking which reflect the institutional constraints that party leaders face under different legisla-tive procedures; and (b) that party leaders block reports more often when they have less power to shape the legislative agenda at earlier stages in the policymak-ing process.

First, while the Conference is able to block legislation indefinitely during the first reading stage of the ordinary legislative (co-decision) procedure, at second reading it is subject to externally-defined time limits.[13] If the metric employed here is valid, it should capture the institutional difference in agenda-setting powers across first and second readings. Figure 2.2 shows the proportion of blocked

---

[13]Once the Council has stated its common position at second reading, the Parliament has three months in which to approve, reject, or amend the proposal. (European Union, 2012).

**Figure 2.2:** Proportion of proposals blocked, by legislative procedure
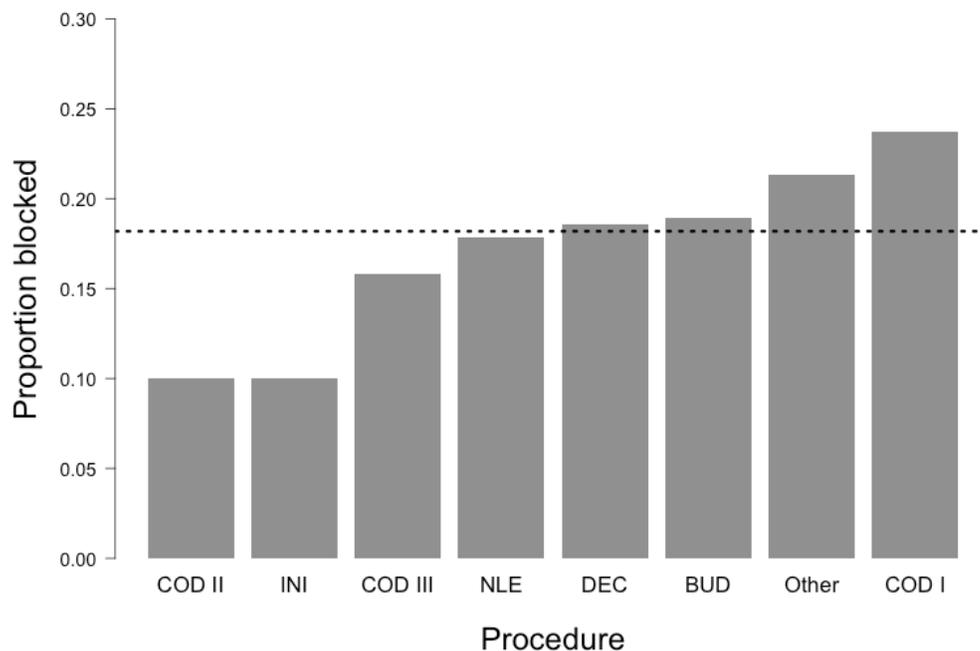


NOTE: The figure shows the proportion of proposals in the sample that were blocked by the Conference of Presidents. The horizontal dashed line gives the overall sample mean, and the bars give the mean for each legislative procedure.

proposals by legislative procedure, and the institutional difference shows up very clearly: while 24% of first reading co-decision proposals (COD I) are blocked by the Conference, the equivalent figure for second-reading reports (COD II) is just 10% (a significant difference: $p < 0.001$). In addition to validating the blocking measure, this difference is also of substantive interest: when party leaders in the Conference have institutional prerogatives to set the plenary agenda, they make use of these powers.

We might also expect EPG leaders to block legislation less often when their ability to shape the agenda in other stages of the legislative process is greater.

For example, under the own-initiative (INI) procedure, party leaders have veto power at earlier stages of the legislative process. INI proposals must be approved by the Conference prior to being drafted. Accordingly, party group leaders should be expected to block divisive proposals at the initial approval stage, and long before they reach the agenda-setting stage considered here. Figure 2.2 provides evidence of such strategic behaviour: own-initiative reports are blocked in just 10% of cases observed in the data – a significant difference from the mean proportion of reports blocked by the Conference ($p < 0.001$). Overall, these results suggest that the blocking measure captures salient patterns of behaviour in the EP.

A potential objection is that while I identify whether a proposal was removed from the draft agenda or not, this measure does not capture whether the proposal reappears on later draft agendas, nor the length of time before any such reappearance occurs. As argued above, it is not necessary for a party leader to prevent the consideration of a proposal indefinitely to reap the benefits of agenda-setting power. However, it is clear that by focussing on individual part-sessions, we are missing potentially valuable information. A more nuanced analysis would be to directly model the *duration* for which a proposal is delayed by the Conference of Presidents.[14] Unfortunately, such an analysis is not possible with this data. While it is possible to accurately identify proposals that are removed before the presentation of a final-draft agenda of a given part-session, the identifying proposal numbers are not used consistently across different sessions, and the names of the reports often change from one agenda to the next. This makes it very difficult to tell whether a report has resurfaced at a later point in time. I proceed by analysing the simple binary choice (*Blocked, Not Blocked*) taken by the Conference in a given session, but it is important to acknowledge this limitation when

---

[14] Haber (2015) provides such an analysis in the UK House of Commons, for example.

drawing conclusions from the findings below.

## Measuring party polarisation

The theoretical analysis indicated that as the median (agenda-setting) party group becomes more polarised, the party leader will have incentives to block a greater number of legislative proposals. Measuring agenda-setter polarisation requires, first, identifying the median EPG for each proposal, and second, measuring the internal ideological polarisation of that group on that proposal. I draw from the data in McElroy and Benoit (2007, 2010, 2011), which provides expert survey placement of both national parties and EPGs across a number of distinct policy dimensions.[15] I identify the median party group by taking the median of the expert survey scores on each dimension, weighted by the number of MEPs in each group.[16] The polarisation of the median group is calculated by taking the MEP-weighted standard deviation of the expert survey scores for *national* parties within the median EPG on each policy dimension. Higher standard deviation scores imply that the national parties within an EPG are more polarised in the sense given in the theoretical section.

A central measurement issue in this analysis is mapping the proposals to the expert survey dimensions used for measuring party group positions. As there are nearly 4000 unique proposals in the data, manual categorisation is unfeasible, and would regardless require a great deal of *ad hoc* judgement. A simple approach commonly used in the existing literature is to assign proposals to the expert sur-

---

[15]As with any measure of party positions, expert surveys are subject to potential measurement error. However, research has shown that of the available options, expert surveys tend to produce accurate data for party positioning, and consistently outperform the most common alternative – party manifesto data (Marks et al., 2007).

[16]Table A.2 gives the identity of the median group on each dimension in EP6 and EP7.

vey dimensions according to the committee to which the proposal pertains (e.g. Klüver and Spoon, 2013). However, it is often unclear how best to assign committees to dimensions. For example, should proposals from the Internal Market and Consumer Protection Committee be assigned to the 'Economic' dimension, or the 'Deregulation' dimension? Similarly, such an approach would exclude the possibility that proposals may pertain to a number of policy dimensions simultaneously. For instance, should a proposal for increased taxation of carbon-dioxide emitting motor vehicles[17] count as an economic issue, or an environmental one? On such a proposal, we might expect the polarisation of the median group on *both* of these dimensions to influence the probability that the proposal is blocked by the Conference.

To overcome this problem, I develop a probabilistic classification of proposals to expert survey dimensions using a set of *legislative summaries* which describe the content, purpose, and background of each legislative proposal.[18] I use the textual information in the legislative summaries to assign proposals to each expert survey dimension based on the words the parliamentarians use themselves to describe the content of the proposals. This approach has two main benefits. First, by making use of the text data, I am able to match proposals to expert survey dimensions in a way that closely mirrors intuitive understandings of the *ex ante* defined meaning of those dimensions. Second, because the classification is probabilistic, this allows for the possibility that proposals can address multiple issue areas simultaneously.

A simple example helps to clarify the intuition. Consider a proposal $j$ that is presented to the Conference for approval. Imagine that 75% of proposal $j$ is

---

[17]"Proposal for a Council Directive on Passanger Car Related Taxes" (Commission, 2005)

[18]These summaries were collected from the European Parliament website – `www.europa.eu` – and an example text is given in appendix figure A.2.

concerned with economic issues, but 25% concerned with environmental issues. If this is the case, it is not only the polarisation of the agenda-setting EPG on economic issues, but also of the agenda-setter on environmental issues that will determine whether proposal $j$ is blocked by the Conference. As the identity and polarisation of the agenda-setting party group varies across policy dimensions, it is important to take account of our uncertainty as to which policy dimension such a proposal truly pertains. For example, if the median economic EPG is highly polarised, but the median environmental EPG has a low level of polarisation, then simply assigning $j$ to the economic dimension will lead to an upward bias in our estimate of the effect of party polarisation on blocking in the Conference. I therefore use the legislative summaries to estimate the probability that each proposal pertains to each expert survey dimension, and use these probabilities to calculate a weighted polarisation score for the median party group(s) on each proposal.

The classification proceeds as follows.[19] First, I select a subset of proposals for each expert survey dimension which relate clearly to the dimension at hand. I define a short dictionary of words for each policy dimension, and search each of the legislative proposals for these words.[20] Each proposal is given a score for each dimension which is simply the sum of the number of times a word from the relevant dictionary is found in each proposal. I take the proposals with the highest scores (those at or above the 97th percentile) for each dimension, and exclude any texts assigned to multiple dimensions. The resulting mutually-exclusive subsets

---

[19]The classification approach is similar to Blei, Ng and Jordan (2003), though I use a penalised multinomial model rather than a support vector machine for classification. The multinomial model has the advantage of producing the predicted probability that each proposal is associated with each of the expert survey dimensions in the data.

[20]The dictionaries for each dimension are presented in table A.3 in the appendix.

include between 80 and 100 texts for each of the 7 policy dimensions, and they form the training set in what follows.

I begin by converting the raw summary texts into a set of features that can be used to predict dimension assignment. I follow common practice by stemming,[21] removing 'stop words',[22] and dropping very infrequently appearing words. I then construct a document-word matrix, which records the number of times each of the remaining 3634 unique words in the corpus occurs in each summary, and apply a series of unsupervised topic models to the document-word matrix in order to construct predictive features for classification of the proposal texts.[23] I use the Correlated Topic Model (Blei and Lafferty, 2006) which assumes that the relative frequency with which terms co-occur within different documents gives information about the topics that feature in those documents.[24] The two main inputs into the model are a user-specified number of topics, $T$, and the document-word matrix for the corpus of documents.

The model returns a $D$ x $T$ matrix of topic proportions – denoted $\theta$ – that describe the fraction of each legislative summary $d \in \{1, 2, ..., D\}$ that is from each topic $t \in \{1, 2, ..., T\}$. A common problem with topic models is that it is not clear *a priori* how many topics the researcher should estimate, and existing solutions (e.g. Blei, Ng and Jordan (2003)) aim to select the model that best predicts textual data out of sample. In this case, by contrast, I am interested in

---

[21]Words such as 'school', 'schools' and 'schooling' all become 'school'.

[22]Such as 'and', 'if', 'the', 'but' and 'of'.

[23]An alternative approach would be to train a model on the word-frequency matrix directly, but with over 3000 unique words, this would be computationally burdensome. Furthermore, Blei, Ng and Jordan (2003) show that using a topic model to reduce dimensionality can, in fact, lead to *greater* classification performance than relying on the raw text counts alone.

[24]I implement the model as the null model for the Structural Topic Model (Roberts et al., 2014). The CTM is similar to Latent Dirichlet Allocation (LDA), but allows for a covariance structure between topics, and has been shown to have greater predictive accuracy than LDA (Blei and Lafferty, 2006).

predicting the dimension classification described above. Because the number of topics that will do this best is unclear, I estimate $K$ topic models for all integer topic counts from 20 to 120. This results in 101 separate $\theta_k$ matrices, with typical elements $\theta_{td(k)}$: the proportion of proposal-text $d$ in topic $t$ from topic-model $k$. These matrices therefore provide summaries of the substantive content of each proposal, and can be used to predict the expert survey dimensions that each proposal addresses.

I then use the $\theta_k$ matrices as the model matrix[25] for a series of penalised multinomial regressions predicting the discrete dimension classification in the training set, repeating the exercise $K$ times – once per topic model. These models therefore predict the dimension to which a given text pertains as a function of the topic proportions. I then calculate the predicted probability that each legislative summary – in both the training and test sets – is associated with each of the 7 expert survey dimensions. The intuition here is that by building the model with the labeled training data, we are able to learn the topics (clusters of words) that are most associated with each dimension. We then project the topics of the test and training data onto the estimated multinomial model to recover the probability that each proposal is associated with each dimension.

As overfitting is a common problem in multinomial logistic regression estimation, and as the number of topics in these models is large as $K$ increases, I use penalised models in this second stage.[26] A nested K-fold cross-validation procedure is used to select the best fitting model: the inner-loop of the cross validation is used to select the appropriate value of $\lambda$ *within* each of the penalised models,

---

[25]Because the topic proportions for each legislative summary ($\theta_{d(k)}$) sum to one, I could exclude one of the topics or the intercept term. The two approaches give identical predicted probabilities, and I choose to exclude the intercept term.

[26]As implemented using the **glmnet** package in R (Friedman, Hastie and Tibshirani, 2010).

and the outer-loop is used to select *between* the $K$ penalised models. The outer-loop indicates that the 94-topic model provides the lowest misclassification rate in the cross-validation procedure.[27] In the analysis I present basic results from all $K$ topic models, and give a more detailed discussion of the estimates from the 94-topic model.

Before turning to the model specification and results, I validate the performance of the classification. First, table A.4 in the appendix presents the titles of the legislative proposals for which the (94-topic) multinomial model gives the highest predicted probabilities for each dimension. Across all 7 policy dimensions, the results are highly consistent with intuitive expectations. For the 'Immigration' dimension, for example, the proposals with the highest probability are concerned with visa waiver schemes and the Schengen Borders Code. Similarly, the 'Security' dimension's top proposals pertain to the situation in Afghanistan, the European Security Strategy, and the anti-missile shield. The classifier also appears to discriminate successfully between the related 'Deregulation' and 'Economics' dimensions: the former is populated mostly by proposals relating to the regulation of products in the single market, while proposals assigned to the latter deal with broader economic issues such as the Eurozone, trade, and economic governance.

Second, figure 2.3 depicts the proportion of proposals from each parliamentary committee that are assigned to each of the expert survey dimensions.[28] The blue boxes are scaled such that when 100% of proposals from a given committee are allocated to a given dimension, the square has an area of 1, and will fill the dashed box that contains it. Accordingly, larger squares correspond to a higher propor-

---

[27]Figure A.3 in the appendix depicts the model fit statistics for all $K$ topic models.

[28]For clarity, here I use a discrete classification and assign a proposal to the dimension on which it has the *highest* probability from the penalised model.

**Figure 2.3:** Proposal committee of origin by expert survey dimension
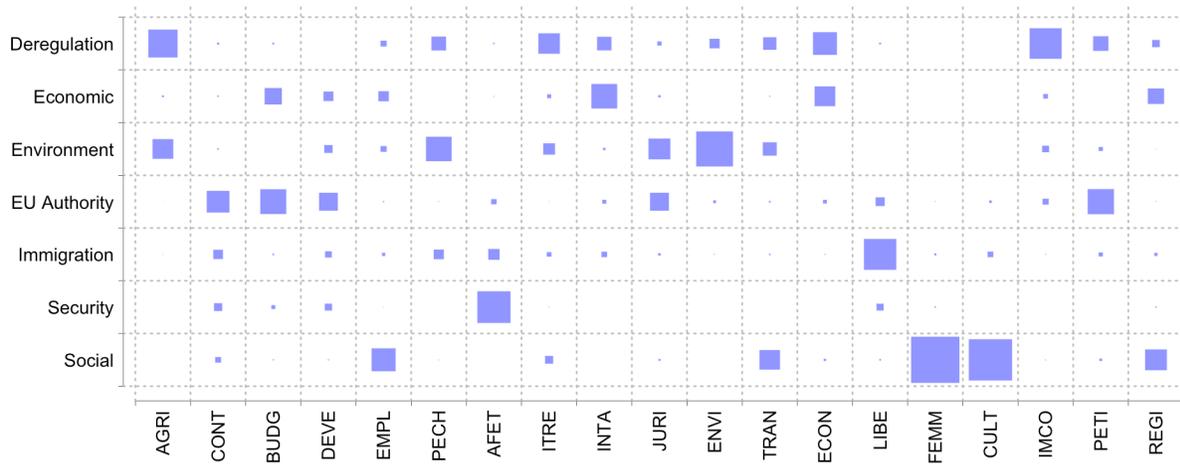


NOTE: The plot shows the proportion of proposals from each parliamentary committee (x-axis) that are categorised to each of the expert survey issue dimensions (y-axis) in the text classification procedure. Larger squares correspond to a higher proportion of proposals from a given committee being categorised to a given dimension

tion of proposals from a given committee being categorised to a given dimension. Again, the results are reassuring: proposals from committees such as the environment (ENVI) and fisheries (PECH) are assigned to the 'Environment' dimension, proposals on women's affairs (FEMM) and culture (CULT) are allocated almost exclusively to the 'Social' dimension, and the 'Security' dimension is mostly populated by proposals deriving from the committee on foreign affairs (AFET). The figure also makes clear a key advantage of the method: different proposals from the same committee can be allocated to more than one expert survey dimension. For example, proposals from the ECON committee are roughly equally divided between the 'Economic' and 'Deregulation' dimensions. Overall, these checks suggest that the classification procedure is successfully assigning proposals to the relevant expert survey dimensions.

With these classifications in hand, I use the predicted classification probabilities to calculate the weighted polarisation of the median EPG on each proposal. For each proposal, I multiply the polarisation of the agenda-setting EPG on each dimension by the probability that each dimension features in the proposal. Taking the sum of these values gives me the dimension-weighted polarisation score for the proposal. For example, if a proposal has a 0.75 probability of being classified as economic, and a 0.25 probability of being environmental, with median EPG polarisation scores of 3 and 2 respectively, the weighted median polarisation score for that proposal would be $.75*3+.25*2 = 2.75$. Repeating this calculation for all proposals in the data set gives a continuous variable – *Agenda-Setter Polarisation* – that I use in the main analysis.[29]

---

[29]Results from an alternative approach in which I simply assign a proposal to the dimension for which is has the highest predicted probability are given in appendix figure A.4 and the results from the cross-validation-selected model are given in table A.5.

Hypothesis 1 suggests that the Conference of Presidents will block legislation more often when the agenda-setting party group on a proposal is less ideologically united. As the outcome variable, *Blocked*, is binary, to investigate this hypothesis I estimate logistic regression models of the form:

$$\text{logit}(Y_{j(a)}) = \beta_1 AgendaSetterPolarisation_j + X_j'\gamma + \zeta_c + \phi_p + \epsilon_{j(a)} \qquad (2.1)$$

where $Y_{j(a)}$ is the binary response variable indicating whether proposal $j$ (on agenda $a$) is blocked or not, and $\epsilon_{j(a)}$ is an idiosyncratic error term. $\beta_1$ is the quantity of interest, identifying the association between the ideological polarisation of the median party group and the probability of blocking in the Conference of Presidents.

In order to account for other potential factors that may influence the probability of blocking, I include a matrix of covariates, $X_j'$. First, as emphasised in the theoretical analysis, the distance between the agenda-setting party and the floor median should also predict blocking behaviour.[30] I therefore control for the absolute distance between the median EPG and the median national party on each dimension using the expert survey data described above. I also control for the polarisation of the parliament as a whole on each dimension, as well as for the average 'salience' of each policy dimension.[31] As depicted in figure 2.2, the agenda-setting power of EPG leaders appears to vary by legislative procedure, and thus I control for the procedure of each proposal.

---

[30]This prediction relates to the distance between $x_2$ and $f_m$ in figure 2.1.

[31]These measures are also derived from the expert survey data: the polarisation of the parliament is the MEP-weighted standard deviation of the positions of all the national parties on a given dimension, and salience is the MEP-weighted mean of the salience of a dimension to all parties. As with the measurement of the *Agenda-Setter Polarisation* variable, for each of these expert survey measures, the score for each proposal is the sum of the scores for each dimension, weighted by the probability that the dimension is relevant to that proposal.

Another concern is that that some parties may simply be more obstreperous than others, regardless of their level of internal polarisation. If some party groups block legislation often, and are marked by unusually high levels of polarisation, then this will confound the main effect of interest. To overcome this problem, I also include fixed-effects ($\phi_p$) for the identity of the party group that holds the median position on the dimension for which a given proposal has the highest probability of association. As some policy areas may be more prone to delay than others, I also include fixed-effects ($\zeta_c$) for the committee responsible for each proposal in some models.

Plenary time is a scarce resource (Cox and McCubbins, 2011), and blocking may occur if the agenda is more constricted at certain times due to external factors. To account for this possibility, I include a control variable for the number of proposals submitted to a given draft agenda, under the assumption that larger numbers of proposals will increase the probability of blocking. I also control for the number of days between the date of the draft agenda and the end of the parliamentary session, with the expectation that the closer the parliament is to the recess, the more leaders will try to expedite the legislative process. Finally, in order to account for the potential non-independence of proposals within a draft agenda, in all models I use cluster-robust standard errors, clustering on the draft-agenda.

Establishing credible causal inferences from observational data such as those considered here is notoriously difficult. This paper makes progress by exploiting a new form of legislative blocking data which allows us to directly observe which bills are removed from the agenda, and by employing a measurement strategy that ties legislative proposals to the positions of parliamentary actors in a more systematic fashion than has been possible previously. These methodological innovations help to move the analysis closer to important theoretical arguments regarding negative

77

agenda control, but they do not provide a solution to the more ubiquitous problem of identifying causal effects from non-experimental data. Accordingly, I do not claim that the results presented here are causally identified, as there are surely very many reasons why legislative proposals are blocked by the Conference of Presidents. However, the analyses presented below – which control for a large range of possible alternative explanations – can help to establish whether the available evidence is broadly consistent with the claims made in the theoretical section above.

RESULTS

Figure 2.4 plots the $\beta_1$ coefficients from equation 2.1 that result from the classification procedure for each of the $K$ topic models, along with the cluster-robust confidence intervals. The top panel of the figure presents results from a baseline bivariate logistic model, and the bottom panel depicts the estimates from the full model in equation 2.1. Estimates presented in black represent cases where the relationship between agenda-setter polarisation and blocking is significant ($p < 0.05$), and insignificant relationships are coloured in grey. The points and lines in red indicate the estimate from the 94-topic model preferred by the cross-validation procedure. In general, in both the baseline and the full models, the coefficient is positive and sizeable in magnitude. Focussing on the full model, the estimated coefficient is positive in all models and the estimates are also, for a large part, statistically significant. Notably, the estimates from the model selected by cross-validation are close to the centre of the distribution of coefficients in terms of magnitude, and are statistically significant in both the baseline model and the full model.

Table 2.1 presents the detailed results from the 94-topic model selected by

78

**Figure 2.4:** $\beta_1$ estimates by topic model
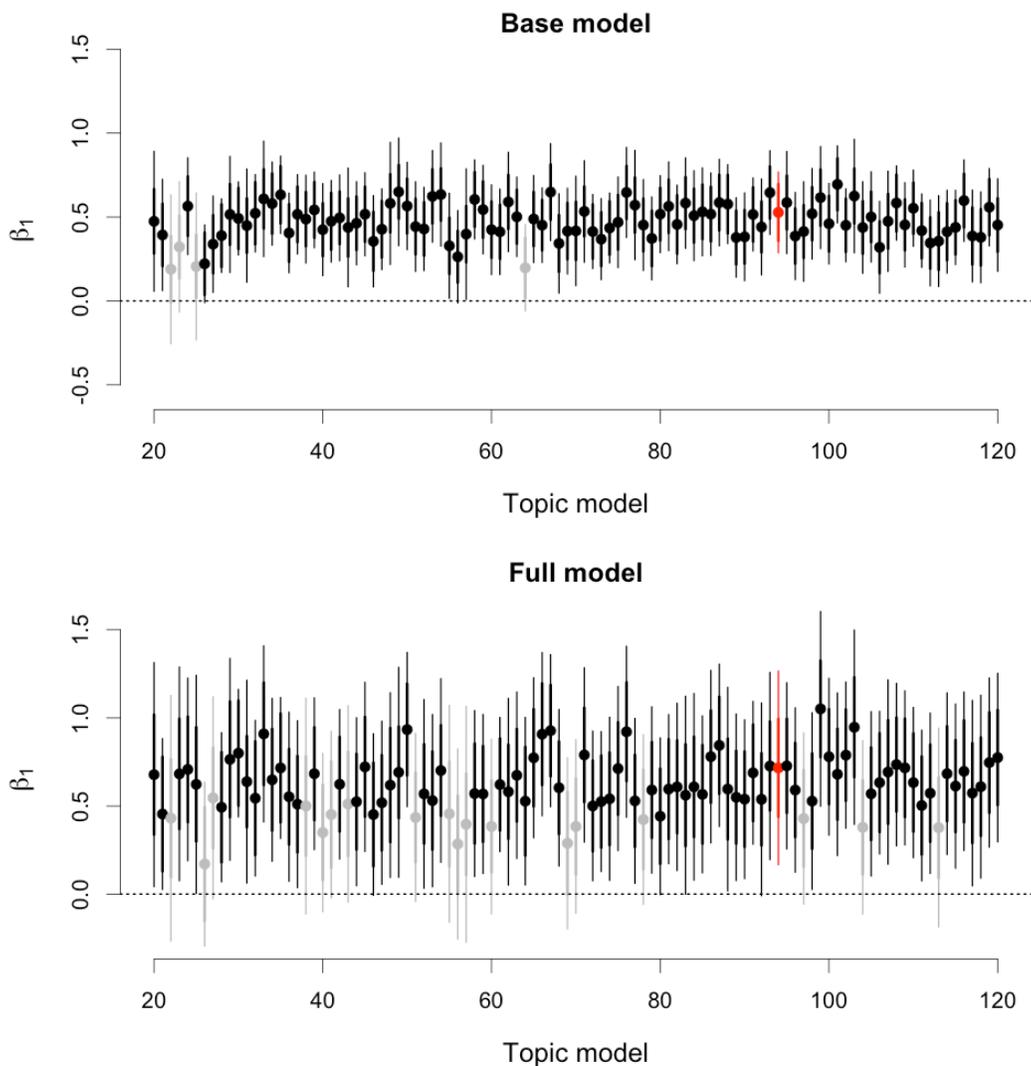


NOTE: The plot shows the $\beta_1$ coefficient – representing the effect of *Agenda-Setter Polarisation* on the probability of blocking – for each of the $K$ topic models. Thick confidence intervals are calculated from traditional standard errors, and thin lines represent those from cluster-robust errors. The top panel gives the results of the baseline models (model 1 in the regression tables), and the bottom panel gives the estimated coefficients from the full models with fixed-effects and covariates (model 4). The cross-validation selected model (table 2.1) is presented in red.

cross-validation.[32] Model 1 provides naive estimates of the effect of agenda-setter polarisation on legislative blocking by the Conference of Presidents. Model 2 includes covariates, and fixed-effects for the median party group, and for committee are included in models 3 and 4 respectively.

**Table 2.1:** Median party group polarisation and legislative blocking

| | Blocked | | | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Agenda-Setter Polarisation | 0.527*** | 0.579*** | 0.766*** | 0.716** |
| | (0.123) | (0.200) | (0.238) | (0.281) |
| Constant | −2.699*** | −1.588 | 0.736 | −1.767 |
| | (0.282) | (1.923) | (2.396) | (3.184) |
| Covariates | × | ✓ | ✓ | ✓ |
| Median Group FEs | × | × | ✓ | ✓ |
| Committee FEs | × | × | × | ✓ |
| Observations | 4,300 | 4,300 | 4,300 | 4,300 |
| Akaike Inf. Crit. | 4,042.809 | 3,946.850 | 3,933.339 | 3,915.512 |

NOTE: Logistic regressions with cluster robust standard errors (clustered by draft agenda) shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

Consistent with the theoretical prediction, across all specifications, the estimated effect of *Agenda-Setter Polarisation* on legislative blocking is positive, and is significantly different from zero. In terms of the magnitude of the effect, the main coefficient from model 4 – the most conservative model – indicates that increasing the polarisation of the agenda-setting group by one unit increases the odds of a proposal on that dimension being blocked by approximately 48%. An increase of one standard deviation from the mean level of polarisation is associated with an increase of 7 percentage points in the probability of blocking. In sum,

---

[32]Estimates for covariates are presented in appendix table A.6.

these findings therefore support the theory that parties screen out potentially divisive legislation when they hold agenda-setting power.

Voting cohesion

The theoretical analysis suggests that if leaders use negative agenda control to block legislation on which they are divided, median EPGs in the Conference will be able to maintain cohesion in spite of increasing polarisation of their constituent national parties (hypothesis 2). I therefore assess the relationship between polarisation and party group cohesion by examining all roll-call votes for the 6th and 7th European Parliament from 2004 to 2014. The data is from `www.votewatch.eu`, a public website which records all European Parliament roll-call votes. For each of the 13,158 votes in the sample, I calculate a cohesion score for each EPG on that vote, resulting in a total of 95,443 vote-party observations. I use the cohesion measure introduced in Desposato (2005), which corrects for potential 'small party bias' and has an intuitive interpretation as the probability that two randomly-selected members of party $p$ vote together on bill $j$. When a party is completely united, then the probability that two randomly-selected members vote together is equal to one. When a party is completely divided, the measure is equal to zero.[33]

The agenda-setting EPG on each dimension is identified in the manner discussed above, and I use the same text-based classification procedure used in the previous analysis to calculate the probability that each vote addresses each policy dimension.[34] Accordingly, I construct a continuous measure which captures the

---

[33]Appendix table A.7 replicates the analysis for another commonly used measure of voting cohesion: the 'agreement index' used by Hix et al (2007). Reassuringly, the results using this alternative measure are statistically and substantively very similar.

[34]As each vote is associated with one of the texts presented to the Conference, I use the same $\theta_k$ probability matrices from each of the topic models to measure the dimensions associated with each vote.

agenda-setting power of each party group on each vote ($AgendaSetting_{pj}$). The intuition is that if a given EPG holds the median position on *all* the dimensions that are relevant to a given vote, then it will have an agenda-setting score of one. If a group does not hold the median position on *any* of the expert survey dimensions that are at play in a given vote, then its agenda-setting score will be zero. It is also possible that, as a vote may address multiple policy dimensions, more than one party group will hold at least some agenda-setting power. For example, for a vote made up of 75% economic issues, and 25% environmental issues, where the EPP is median on the economic dimension and ALDE is median on the environmental dimension, their agenda-setting scores for that vote will be 0.75 and 0.25 respectively.

I measure the internal polarisation of each EPG on each vote ($Polarisation_{pj}$) by calculating the MEP-weighted standard deviation of the expert survey scores for *national* parties within each group. These scores are then multiplied by the dimension classification probabilities of each vote, and then summed to produce a continuous measure of polarisation for each group on each vote. Recall that in the absence of agenda control, parties at the centre of the policy space will be *most* affected by increases in ideological polarisation of their constituent members.[35] However, if the leader of an EPG is able to control the plenary agenda, they will be able to block bills on which their constituent national parties are most divided, and thus the effects of polarisation on cohesion will be *lower* for the agenda-setting party group.

---

[35]See hypothesis 5 in section A.2 of the appendix.

To assess the cohesion hypotheses I estimate linear models of the following form:

$$
\begin{aligned}
C_{pj} \ = \ & \alpha + \beta_1 AgendaSetter_{pj} + \beta_2 Polarisation_{pj} \\
& + \beta_3 AgendaSetter_{pj} * Polarisation_{pj} + \lambda_p + \zeta_c + X_j'\phi + \epsilon_{pj} \quad (2.2)
\end{aligned}
$$

$\beta_2$ identifies the effect of polarisation on cohesion for EPGs without agenda-setting power. The equivalent effect for agenda-setting party groups is given by the sum of $\beta_2$ and $\beta_3$. In the absence of agenda-control, we would expect $\beta_2 + \beta_3 < \beta_2 < 0$, as when leaders are unable to block proposals coming to the floor, it is the median group (the agenda-setter) who is most at risk of division. Thus, a negative value of $\beta_3$ would be consistent with a model in which the median party group is unable to control the agenda, while a positive value would provide evidence for the agenda-setting story told above.

I include a number of control variables to reduce the possibility of omitted variable bias. First, the further an EPG is from the median position on the parliament floor, the less likely it is to be divided on roll-call votes (Krehbiel (2006); see also hypothesis 3 in section A.2 of the appendix). I therefore control for the distance between each party group and the floor median position on each vote. Second, in line with previous research (Klüver and Spoon, 2013) I include a variable which measures the salience of a vote to a given group. Both the salience measure and distance measures are calculated at the party-vote level using the same expert survey data as for the previous analysis. I construct vote-level measures for each EPG by multiplying the expert survey scores by the probability that a given vote pertains to each dimension, and then summing these weighted scores. Additionally, as Hix, Noury and Roland (2007) find that cohesion is higher amongst larger EPGs, I control for the number of MEPs that are members of an

EPG in each parliamentary term. I also control for the legislative procedure under which the vote takes place, and for whether a vote is the final vote on a given proposal (Hix, Noury and Roland, 2007). I also control for the overall margin of victory in a given vote, with the expectation that parties will be more cohesive when the parliament is more united as a whole on a given issue.

Finally, in some specifications I include two sets of fixed-effects. First, to account for the possibility that cohesion is higher on average in some policy areas than others, I include fixed-effects for the policy area (as recorded in the roll-call files) of each vote ($\zeta_c$). Second, I also include party group fixed-effects ($\lambda_p$). The inclusion of the latter fixed-effects is particularly important, as it ensures that the estimates of the main parameters of interest are identified solely through within-EPG variation in agenda-setting power and party polarisation. As the agenda-setting EPGs are also the largest parties in the parliament, it is possible that omitting these effects would confound the main estimates: there may be other reasons that these groups are less affected by internal polarisation than the smaller party groups. In all regressions I calculate cluster-robust standard errors, clustering on the legislative proposal to which a vote pertains.[36]

**Figure 2.5:** Estimated effect of polarisation on cohesion for agenda-setting and non-agenda-setting party groups

**Interaction**

**Polarisation
(Non-agenda-setting parties)**

**Polarisation
(Agenda-setting parties)**
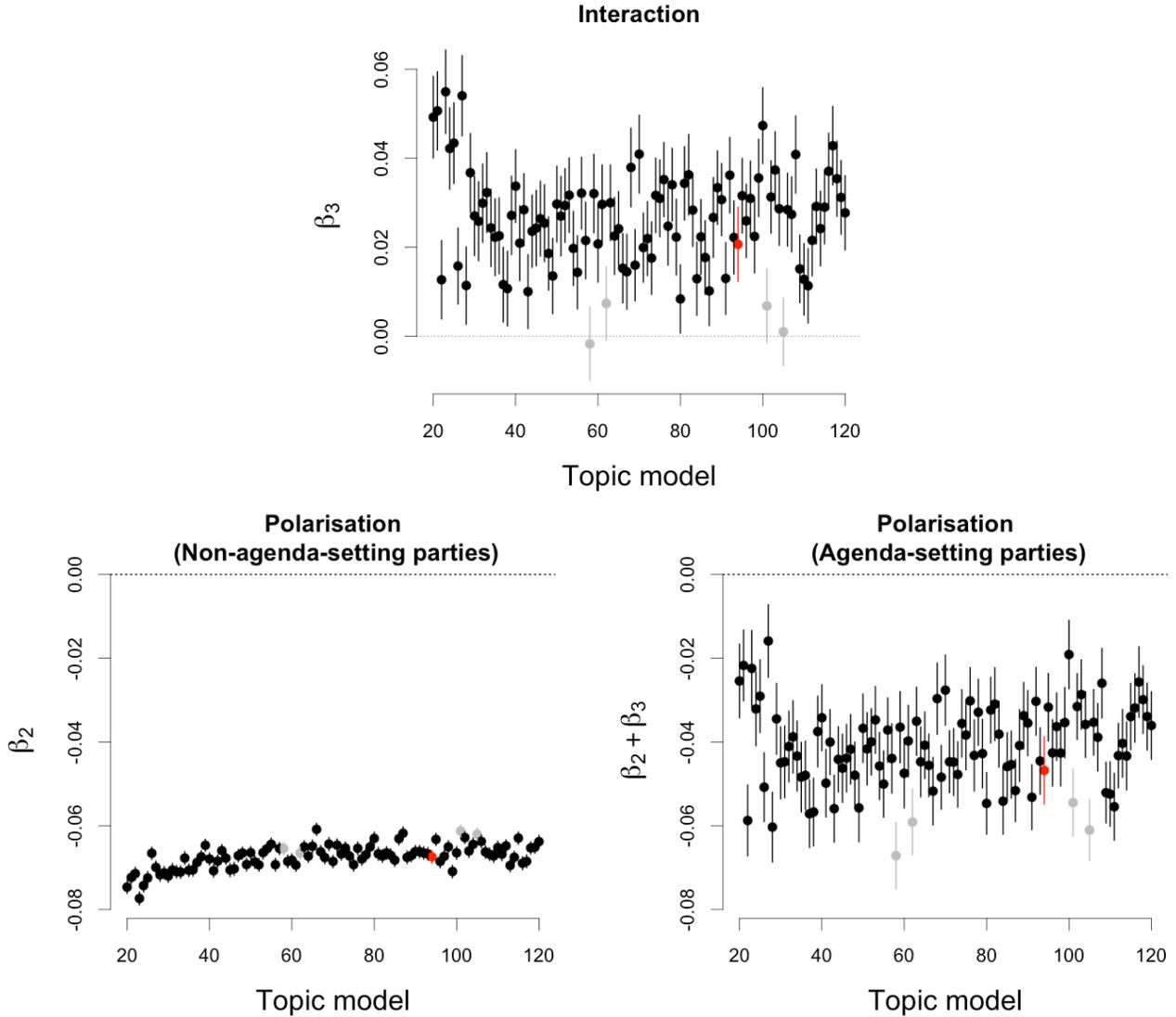
NOTE: The panels depict the estimated effects of interest for each of the $K$ topic models. Significant effects are coloured black, and insignificant effects are coloured grey. The red point represents the estimated effect for the 94-topic model preferred by the cross-validation procedure. The top panel plots the interaction effect $(\beta_3)$, and the bottom panels give the estimated marginal effect of party polarisation on voting cohesion for agenda-setting $(\beta_2 + \beta_3)$ and non-agenda-setting $(\beta_2)$ party groups.

Figure 2.5 plots three sets of coefficients for each of the topic models. The top panel depicts the $\beta_3$ interaction coefficient. Although there is significant variability in the estimates of the interaction effect, it is nevertheless possible to distinguish a clear pattern. The interaction effect is positive in 100 of the 101 topic models and significant in 97 cases. This result is consistent with negative agenda-setting by the leaders of the European party groups, and inconsistent with a model where leaders are unable to control the agenda. The bottom left-panel depicts the $\beta_2$ coefficient, which represents the effect of polarisation on cohesion for non-agenda-setting party groups (*Agenda-Setting* $= 0$). The bottom right panel gives the sum of $\beta_2$ and $\beta_3$, and indicates the effect of polarisation on cohesion for EPGs who hold the agenda-setting position in the Conference of Presidents (*Agenda-Setting* $= 1$). As is clear from the figure, for groups that hold the balance of power in the Conference, the effect of polarisation on cohesion is considerably smaller than the effect for non-agenda-setting groups. Thus, although polarisation reduces voting cohesion for all party groups, this effect is significantly less for those groups who are able to control the plenary agenda.

Table 2.2 presents details results for the 94-topic model. Model 1 gives the estimates for a baseline model including only the *Agenda-Setting* and *Polarisation* variables, and their interaction. Model 2 introduces covariates, and fixed-effects

---

[36]Recorded roll-call votes in the European Parliament do not represent a random sample of votes taken (Gabel and Carrubba, 2004; Carrubba et al., 2006) and may be subject to selection bias (Hug, 2009). If groups call roll-calls on votes on which they are generally more cohesive, the cohesion scores derived from such scores are likely to be upwardly biased. For this to affect the analysis at hand, however, it would have to be the case that such strategic behaviour worked differently for agenda-setting and non-agenda-setting party groups. Note that the analysis presented here attempts to model the effects of (a different form of) selection bias directly: here we are interested in establishing whether the selection of *proposals* that reach the plenary floor affects the cohesion rate of the agenda-setting party.

86

**Table 2.2:** Agenda-setting, polarisation, and cohesion

| | *Party group cohesion* | | | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Agenda-Setting | 0.047*** | 0.069*** | 0.013 | 0.049*** |
| | (0.008) | (0.008) | (0.008) | (0.010) |
| Polarization | $-0.074$*** | $-0.058$*** | $-0.061$*** | $-0.067$*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Interaction | 0.034*** | 0.031*** | 0.055*** | 0.021*** |
| | (0.003) | (0.003) | (0.004) | (0.004) |
| Constant | 0.993*** | 0.793*** | 0.740*** | 0.835*** |
| | (0.002) | (0.007) | (0.008) | (0.008) |
| Covariates | × | ✓ | ✓ | ✓ |
| Policy Area FEs | × | × | ✓ | ✓ |
| EPG FEs | × | × | × | ✓ |
| Observations | 95,443 | 88,804 | 88,804 | 88,804 |
| $R^2$ | 0.131 | 0.129 | 0.142 | 0.236 |

NOTE: OLS regressions with cluster robust standard errors (clustered by legislative proposal) shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

for policy area and party group are included in models 3 and 4 respectively. Across all specifications the interaction effect is positive and statistically significant, implying that the voting cohesion of agenda-setting party groups is less sensitive to increases in polarisation than that of non-agenda-setting groups. Focussing on the most conservative estimates (model 4), an increase of one standard deviation in polarisation for non-agenda-setting EPGs is associated with a decrease in cohesion of approximately 5.5 percentage points. By contrast, for agenda-setting groups, increasing polarisation by one standard deviation is associated with a decrease in cohesion of only 3.9 percentage points. Overall, these results suggest that the effect of internal polarisation on voting cohesion is systematically different for groups who are able to control the plenary agenda than it is for groups without such control.

The evidence presented here suggests that the closer an EPG is to the political centre, the less it will be affected by internal polarisation of its members. This is directly contrary to what we would expect if these groups were unable to exercise negative agenda control. In the absence of agenda control, it is the parties closest to the political centre that are likely to be *most* divided by increasing party polarisation. That centrist groups are more resilient to party polarisation than non-centrist groups suggests that agenda control plays an important role in European Parliament politics.

CONCLUSION

In 2011, MEPs debated a proposal from the Committee on Constitutional Affairs which concerned the electoral procedure by which MEPs are elected. Amongst other suggestions, the proposal recommended the introduction of 25 new MEPs

who would be elected in a pan-European constituency from lists drawn up by the EPGs. The proposal was highly controversial, dividing the parliament largely along pro-integration vs anti-integration lines. The proposal had been blocked by the Conference of Presidents on four separate occasions before it was finally discussed in parliament, only for Andrew Duff MEP – the rapporteur responsible – to withdraw the proposal from consideration and to refer it back to committee for "further informed and expedient consideration". (Duff, 2011) While there was disagreement *between* European Party Groups over the content of the proposal, disagreement *within* the main agenda-setting EPGs was a significant factor behind the extensive delay in the conference. As one MEP put it, "I would like to suggest to Mr Duff that the reason the vote on his report has been postponed is that his group [is] hopelessly split." (Fox, 2011) The argument in this paper is that such intra-party divisions may often lead to significant restrictions on the issues considered by the legislature.

Party leaders who are faced with ideologically heterogeneous parties can normally whip their members to follow a common group line. However, when 'carrot and stick' disciplinary mechanisms are unavailable, leaders may also manipulate the agenda-setting process in order to avoid potentially divisive votes. In the context of a simple spatial model, I argued that cohesion-motivated party leaders must take account of the preferences of non-median party members when deciding whether to pursue legislation. These party members therefore represent veto players in the intra-party decision-making process. When the preferences of these veto players diverge, and a party leader can control the agenda, the degree of gridlock is likely to increase. Consequently, while polarisation of a party's members is likely to have pernicious effects on voting cohesion, negative agenda-setting powers allow party leaders to mitigate these effects, and thereby help to maintain

high levels of cohesion in the face of ideologically heterogeneous legislators.

I evaluated these predictions in the context of the European Parliament, where traditional forms of discipline are held by national parties, but agenda-setting powers are controlled by the leaders of the transnational EPGs. The structure of parliamentary resources in the EP therefore made it possible to isolate the effects of agenda-control – something that has proved difficult in most national settings. Empirical analysis of both roll-call and blocking data provided support for the expectation that when the unity of a political party declines, party leaders block legislation that threatens to divide their members, and that this has consequent effects for the relationship between intra-party polarisation and voting cohesion for agenda-setting parties.

These findings contribute to our understanding of the practice of party politics in the EP. Contrary to previous findings (Hix, Noury and Roland, 2007, 105-131), the analysis revealed that the possession of negative agenda powers helps EPGs to overcome internal divisions between their constituent national parties. This suggests that, when equipped with the legislative tools to do so, EPG leaders are able to control the voting behaviour of their MEPs even in the face of disagreement between their national parties and the consequent declining efficacy of traditional disciplining mechanisms. This has implications for the way in which we think about representation in the European Parliament, and puts the EPGs in a more central role than has previously been acknowledged.

In addition, the paper contributes to a literature which seeks to understand the pace of decision-making in the legislative process in the EU as a whole. Existing work suggests that *inter-institutional* divisions over policy between the Parliament, the Council, and the Commission can contribute significantly to the time it takes for a policy proposal to be concluded (Klüver and Sagarzazu, 2013; Toshkov

and Rasmussen, 2012). The findings in this paper, by contrast, suggest that the pace of the legislative process in the EU is also, at least in part, determined by the degree of preference homogeneity of agenda-setting parties in the Parliament.

More generally, the model I describe provides insights into the relationship between internal party dynamics and legislative gridlock. The central insight of canonical studies of gridlock is that polarisation *between* partisan actors decreases the range of status quo points that are amenable to change (Tsebelis, 2002; Krehbiel, 2010). By contrast, the analysis here emphasises that when party leaders are concerned with maintaining party cohesion, it is polarisation *within* the party that influences the scope of legislative action. In addition to providing theoretical foundations for recent empirical findings (Bevan, John and Jennings, 2011; Haber, 2015), the model may also be useful for understanding the lack of legislative action in other settings.

For example, successive UK governments have blocked or delayed various proposals to reform the House of Lords. The traditional view of policy-making in majoritarian systems such as the House of Commons is that the government is able to efficiently implement its stated policies, with little or no obstruction from other parties. However, my argument suggests that opposition from *within* the governing party's own ranks may contribute to the pace of policy change. This view is supported by qualitative accounts of Lords reform (Russell, 2009).[37] While voting cohesion in Westminster systems is high, this does not necessarily imply that government parties are unrestricted in terms of policy change, as cohesion may be the outcome of strategic agenda control. In general, future work should

---

[37]For example, when describing the Wilson government's failure to implement reform, Russell argues that "Too radical for some, and too cautious for others, the bill generated so much backbench dissent that it was ultimately abandoned." (Russell, 2009, 124)

therefore consider the role of intra-party dynamics for understanding the pace of the legislative process, and the outcomes it produces.

While the structure of politics in the European Parliament is useful for isolating the effects of agenda control from those of traditional party discipline, this comes at potential a cost in terms of generalisability. In particular, the findings in this paper pertain to a legislature in which party group leaders have relatively weak disciplinary powers with which they can cajole legislators into following a common group line. However, the European Parliament is not the only legislature in which party leaders have weak disciplinary powers. In particular, in many presidential systems the key disciplinary mechanisms are not possessed by the legislative party leadership (Carey, 2007). However, in many of these systems party leaders are able to restrict the legislative agenda in a manner similar to that described here. Accordingly, when the preferences of party members in presidential parties diverge, we might also expect to see a concomitant increase in the degree of legislative gridlock. In sum, when cohesion is valuable to party leaders, and when it is not possible to pressure legislators to vote together, it may be better to forego the passage of legislation rather than face damaging divisions on the issues at hand.

# 3

# Never Let a Good Crisis Go to Waste: Agenda Setting and Legislative Voting in Response to External Shocks

Abstract

When exogenous shocks make status quo policies less attractive, legislators become more tolerant to proposed alternatives that are further from their ideal in general political dimensions. This increases the discretion of legislative agenda-setters, and allows them to pass policy that would have been impossible in the absence of a crisis. We argue that this dynamic explains changes in voting patterns of the European Parliament during the period of the financial crisis, given control of the agenda-setting process by pro-integration actors. We observe voting coalitions increasingly dividing legislators along the pro-anti integration dimension of disagreement, but only in policy areas related to the crisis. In line with more qualitative assessments of the content of passed legislation, the implication is that pro-integration actors were able to shift policy further towards integration than they could have without the crisis.

CRISES ARE COMMONLY ASSUMED TO BE CATALYSTS FOR POLITICAL ACTION, opening "windows of opportunity" for dramatic and far reaching reform (Kingdon, 1995; Keeler, 1993; Cortell and Peterson, 1999). Similarly, crises can represent "critical junctures" which are central to explanations of the punctuated dynamic of institutional change (Thelen, 2004; Collier and Collier, 2002; Krasner, 1984; Pierson, 2000; Peters, Pierre and King, 2005; Baumgartner et al., 2009; Baumgartner and Jones, 2002). One way that crises can facilitate political action is by weakening impediments that constrain political actors. When this happens, certain actors are able to 'make an opportunity out of a crisis', and secure changes that would have been impossible previously. However, beyond broad arguments that impediments to political action are removed, we often lack detailed theory of the effects that crises have on specific political decision-making processes. Further, which actors benefit from crises? Although 'policy entrepreneurs' are well positioned to benefit from crises (Kingdon, 1995), it is important to specify why crises represent "an opportunity to be exploited" (Keeler, 1993, 441) for some actors, but not for others. We address these questions by describing a model of the relationship between crises, legislative voting behaviour, and agenda-setting, which we apply to understanding the European Union's response to the 2008 global financial crisis.

The model we describe implies that crises weaken a key impediment to policy change: the opposition of legislators. This provides micro-foundations for the broader 'crisis as opportunity' thesis. Legislatures are a key part of the decision-making apparatus of all democracies and act as a major constraint on policy change under 'normal' political conditions. There exist few accounts of legislative behaviour in times of crisis. In contrast, there is extensive work on the impact of exogenous shocks on other political phenomena such as government duration

94

and termination (Browne, Frendreis and Gleiber, 1986; Lupia and Strøm, 1995), ministerial turnover (Diermeier and Merlo, 2000; Martinez-Gallardo, 2011), policy change (Luong and Weinthal, 2004; Williams, 2009), judicial decisions (Epstein et al., 2005; Clark, 2006) and public opinion (Ladd, 2007; Aldrich et al., 2006). Of the legislative studies that do evaluate the effects of such external shocks, there has been disproportionate focus on the effects of war on voting behaviour in the US Congress (Meernik, 1993; Howell and Rogowski, 2013; Prins and Marshall, 2001; Wittkopf and McCormick, 1998; Cohen, 1982). This literature provides evidence of the 'rally round the flag' effect, but is largely silent on the mechanisms that link crises to individual decisions made by legislators. Howell and Rogowski (2013, 164) encourage scholars to "pay closer attention to the micro-foundations of legislative decision making" in times of war, advice that clearly applies more generally to crisis response. Additionally, while existing accounts highlight the potentially destabilising effects of crises on policy, they do not generally provide specific predictions for the direction that policy will shift in response to a crisis. For example, the institutionalist literature is unclear as to what form new institutions will take following an equilibria punctuating shock. As Blyth (2002, 8) argues, "structural theories of institutional supply are indeterminate as to subsequent institutional form."

Our argument applies the core insight of the agenda setting model originally developed by Romer and Rosenthal (1978) to the context of a legislature facing a crisis in the face of pre-existing multidimensional disagreements. By making the outcomes resulting from inaction less attractive, crises strengthen the position of agenda-setting actors in the policy process. Crises can be understood as shocks to the external conditions which frame legislative deliberations and decisions. In our model, legislators have preferences over the ideological content of the bills that

they pass, but have a common interest in the extent to which policy is well suited to current conditions – which we will call the 'valence' of policy. By changing the external context, a crisis reveals deficiencies in existing policies, makes status quo policies worse for all legislators, and thus encourages them to accept replacements. Accordingly, agenda-setting actors have more discretion during a crisis-period, and are able to propose (and pass) policy that would have been impossible in the absence of a crisis. We show that when standing political disagreements are multidimensional, this can have observable shifts in the voting coalitions that form. Such shifts not only provide evidence that policy is in fact moving towards the agenda setter's position, but also constitute a realignment of the primary dimension of political disagreement.

This model speaks broadly to how crises can both empower agenda-setters and shift the active dimension of politics, and our discussion makes clear that the effects of crises on legislative behaviour are particularly apparent when pre-crisis politics are multidimensional. Accordingly, this model is well suited to understanding the effects of the global financial crisis on voting behaviour in the European Parliament (EP), where politics has traditionally operated in two dimensions: left-right, and pro-anti integration (Kreppel and Tsebelis, 1999; Kreppel, 2000; Hix, 2002; Hix, Noury and Roland, 2006, 2007; Høyland, 2010).

We argue that, in the context of the crisis, MEPs became more tolerant toward policies that they might previously have opposed, and pro-integration agenda-setters (the European Commission, the Council of the European Union, and the leaders of the large European Parliamentary Groups) exploited this tolerance to pass highly integrationist policy. Following the logic of our theoretical argument, this should have led to a shift in the voting patterns of the legislature, with voting coalitions increasingly dividing legislators into pro vs anti integration coalitions

96

rather than left vs right coalitions. We provide evidence that this occurred by showing that votes in crisis-related policy areas indeed shifted towards the pro-anti dimension during the period of the crisis. In order to provide a context for this difference, we combine topic modelling with a two-stage least squares procedure in order to construct synthetic control comparisons to legislation in the pre-crisis period. We show that there was a shift towards voting along the pro-anti integration dimension during the crisis period, but only on crisis-related issues. The crisis did not occasion the sort of shift towards integrationist policy that might have resulted if the crisis simply made MEPs more favourable towards integration in general: changes were confined to the crisis-related policy areas where status quo policies were increasingly viewed as untenable.

Our argument contributes to a developing literature on European political responses to the financial crisis. Much of the work in this area aims to describe policy failures (Taylor, 2009; Berglöf et al., 2009; Begg, 2009; Hodson and Quaglia, 2009; Holinski, Kool and Muysken, 2012) or suggests solutions moving forward (Dabrowski, 2010; Jacoby, 2014; Grahl and Lysandrou, 2014; Wasserfallen, 2014; Hild, Herz and Bauer, 2014; Gros and Schoenmaker, 2014; Claessens et al., 2010). This paper, by contrast, suggests why particular policy responses were taken, and specifically how the European Union came to have such a prominent position in the post-crisis economic governance framework. The EU policy response to the crisis was dramatic and far-reaching, and required overcoming significant pre-existing disagreement in the European Parliament. While some attention has been paid to the crisis response of the Commission (Copeland and James, 2014) and the European Council (Schimmelfennig, 2014), we are unaware of other research that investigates how the crisis affected the decisions of MEPs. While we are not the first to observe that the Commission and the Council were strength-

97

ened vis-à-vis other actors during the crisis, our argument attributes this change to how the crisis weakened the Parliament's ability to block policy changes. That the Commission and the Council appeared to be the central actors in the EU policy response is not the entire story: it was the crisis itself that undermined the Parliament's ability to stand in the way.

THEORY

How do crises affect the decisions of legislative actors? Crises reduce the attractiveness of existing policy, and make legislators more tolerant towards proposed alternatives. When voting on policies, legislators operate in specific economic and political contexts which inform their perception of different policy options, and they prefer to select alternatives that are well suited to current conditions. At the time of adoption, policy will be written to 'fit' the external circumstances relatively well, but policy is static and can only be changed with further legislative effort. External circumstances, by contrast, are dynamic and undergo exogenous changes so that as time passes the degree to which a given policy remains effective may decline. In normal times, slowly changing external circumstances open up only limited opportunities to overcome coalitions opposed to policy change. A crisis constitutes a dramatic change to external conditions which leads to a large decrease in the efficacy of extant policy. This makes legislators much more inclined to accept alternatives to the status quo, which (in expectation) will be better suited to the changed environment.

The form that these alternative policies take depends on which actors control the agenda-setting process. Actors who monopolise proposal power are able to exploit the fact that the status quo has become unpopular in order to pass policy

that previously would have failed to secure a majority. Romer and Rosenthal (1978) show that agenda-setters with the ability to make take-it-or-leave-it offers can exploit situations in which the status quo is unattractive. "The worse the status quo, the greater this threat and, consequently, the greater the gain to the setter from being able to propose the alternative." (Romer and Rosenthal, 1978, 35-36) In the Romer and Rosenthal model a status quo is 'worse' when it is in an extreme position in the policy space, and others have considered the effects of an exogenous shock to the spatial position of the status quo (Tsebelis, 2002). However, for modelling a political crisis, we believe it makes more sense to think of the status quo as worse in non-spatial terms. A crisis entails a sudden change to the external conditions in which existing policies operate, rather than an exogenous change to the policies themselves. We therefore build on these previous models by modelling a crisis not as an exogenous shift in the position of existing policy, but rather as a non-spatial shock to the status quo.[1]

Here, we will use the widely used term "valence" to refer to this non-spatial quality of policy. In models of elections, a similar intuition is commonly incorporated through the addition of a valence term to a spatial utility function, where valence reflects voters' preferences for universally valued candidate characteristics such as integrity, competence, and ability to provide local public goods.[2] In our model, valence is the degree to which policy is well suited to external conditions, and can be expressed formally as the reduced form of a policy dimension on which there is universal agreement (see section B.1 in the appendix). In our empirical

---

[1] We discuss alternative ways of modelling a crisis in more detail below, and in section B.3 of the appendix.

[2] See, for example, Ashworth and Bueno de Mesquita (2009); Enelow and Hinich (1982); Enelow, Hinich and Mendell (1986); Adams et al. (2011); Ansolabehere and Snyder (2000); Groseclose (2001).

analysis we exploit the fact that only certain status quo policies are affected by the crisis in order to identify changes in legislative behaviour between crisis and non-crisis periods.

We consider a case where legislators have preferences over locations in two general policy dimensions $x_1$ and $x_2$, and also prefer policies with higher valence $v$.[3] This yields quadratic-loss random utility functions for the proposal and alternative:

$$u_{iq} = -\left(x_{i1} - x_{q1}\right)^2 - \left(x_{i2} - x_{q2}\right)^2 + v_q + e_{iq} \tag{3.1}$$

$$u_{ip} = -\left(x_{i1} - x_{p1}\right)^2 - \left(x_{i2} - x_{p2}\right)^2 + v_p + e_{ip} \tag{3.2}$$

Example cases of voting under these utilities are depicted in figure 3.1. Consider a situation where there is no valence gap between the status quo and the proposed alternative (top panel, $v_q = v_p$). In the absence of a crisis, voting accords to a simple spatial model. Legislators vote 'yea' if their own ideal point is closer to the proposal ($p$) than it is to the status quo ($q$) and 'nay' otherwise. The dashed cutting-line separates 'yeas' from 'nays'. The dotted circle represents a hypothetical winset[4] – the set of policies that would defeat the status quo in pairwise comparison. Policies located within the winset will defeat $q$ in an up-or-down vote, and policies located outside the winset will fail. The proposal $p$ is determined by the agenda-setter ($AS$), who makes a take-it-or-leave-it proposal

---

[3]This '2-D plus valence' example is the simplest version of the model that reveals relevant observable implications. In appendix section B.2 we also consider a '1-D plus valence' model that captures the central intuition that agenda-setters secure more preferable policy outcomes during a crisis. However, in addition to being a poor match to EU politics, the 1-D model predicts that voting coalitions remain unchanged while the policy proposal positions change between crisis and non-crisis periods. The former are far more easily measured than the latter.

[4]Analytically deriving the winset is not possible without first specifying the 2D preference distribution of legislators. However, an illustrative version is sufficient for our purposes here.

**Figure 3.1:** Crises, legislative voting, and agenda-setting in two-dimensions
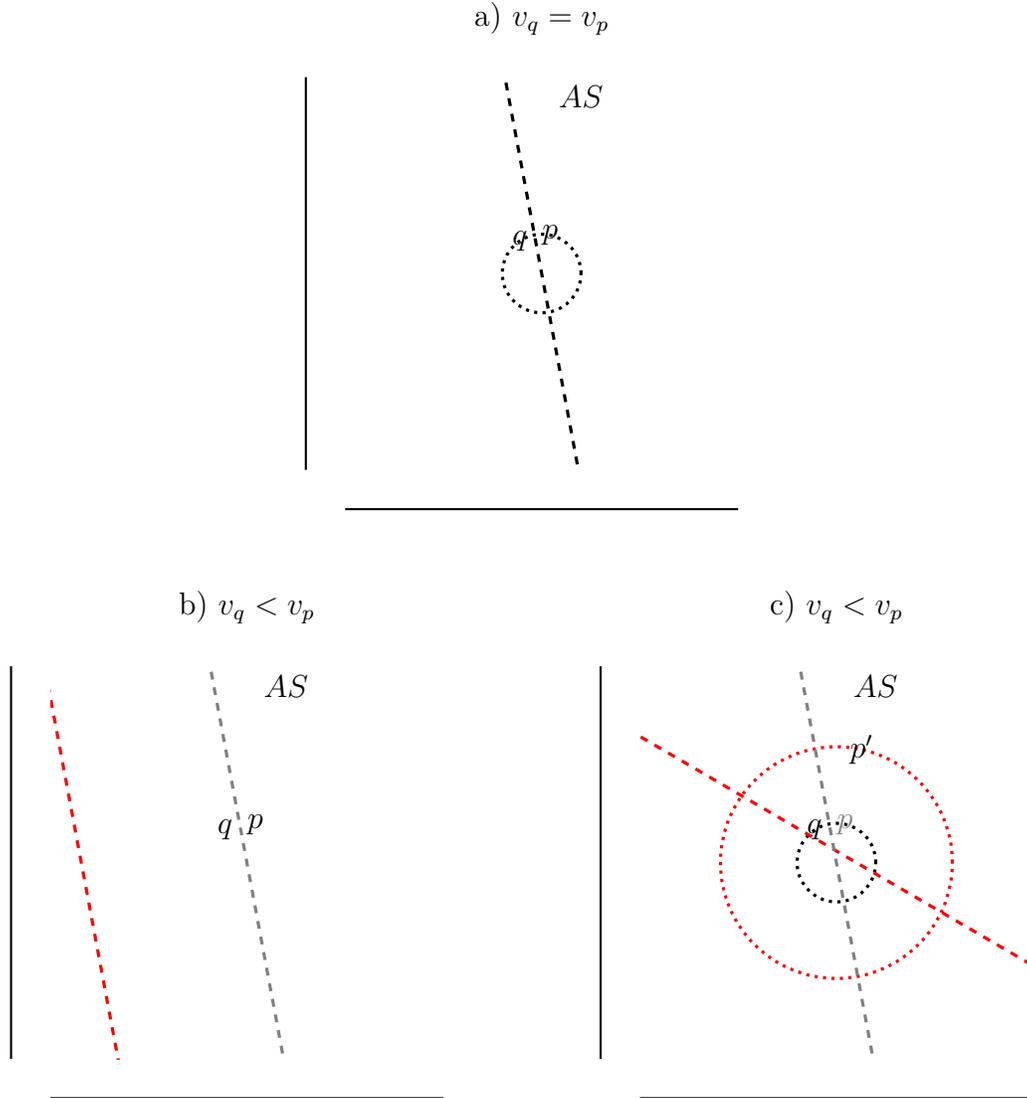
a) $v_q = v_p$



b) $v_q < v_p$

c) $v_q < v_p$



NOTE: In the absence of a crisis (top panel), voting collapses to a simple spatial model, with legislators voting for the proposal $p$ if they are to the right of the cutline, or against the proposal otherwise. If the status quo $q$ receives a negative valence shock, but the proposed policy is fixed at $p$ (bottom left), then the cutline will shift to the left, indicating that some legislators who previously would have voted against $p$, now would vote 'yea'. In equilibrium, the agenda-setting actor ($AS$) will exploit this tolerance to propose policy ($p'$) that better represents her interests (bottom right). The agenda-setter 'makes an opportunity out of the crisis'. We can identify the effects of such a proposal in two-dimensional voting patterns, as the cutting-line rotates in the direction of the ideal point of the agenda-setter.

that is as close as possible to her own ideal point, within the constraint that the policy will be approved by a majority vote (that is, within the winset).

In this example, the agenda-setter is located at a relatively moderate position on the first dimension, but an extreme positive position in the second dimension and so the proposed policy is close to the top of the winset. Given the illustrative winset shown, the proposal mostly moves policy from left to right, rather than south to north. Because of this, the cutting line falls nearly vertically, and the 'yea' coalition is formed of legislators on the right side of the policy space.

Consider now the crisis case $(v_q < v_p)$, where we temporarily hold fixed the positions of $q$ and $p$ (bottom-left panel). The main implication of the decline in $v_q$ is that any given legislator is willing to accept a broader range of policies because the ideological cost of accepting a more distant $p$ is compensated for by replacing the low-valence $q$. The decline in $v_q$ therefore leads some legislators to vote for $p$ despite their relative proximity to $q$, resulting in a larger coalition of support for $p$ in the crisis period. This is depicted by the leftward shift of the cutting-line. If the proposed policy $p$ is held fixed, a crisis will lead to a larger 'yea' coalition than in the non-crisis period.

However, because more policies are able to defeat $q$ in pairwise competition (the winset expands), the agenda-setter can propose a policy closer to her own ideal point that will still win a majority of support. This means that the agenda-setter can propose $p'$ instead of $p$ (bottom-right panel). As $p'$ is within the enlarged winset, it is approved by the legislature, whereas in the equal valence scenario it would have been rejected, and the agenda-setter obtains a policy outcome that would not have been possible in the absence of the crisis.

These figures make clear the agenda-setter's advantage during crisis periods. The worse a valence shock (i.e. the lower $v_q$), the larger the winset, and thus

102

the more discretion the agenda-setter has over policy outcomes. In short, the model captures the intuition that agenda-setters can exploit a crisis. Crises make legislators more tolerant to new proposals, meaning that those with agenda-setting power can trade off the resulting surplus of legislative votes to achieve spatial outcomes that are closer to their own preferences than would have been possible in the absence of a crisis.

There are two major implications of the model. First, the set of legislators voting to approve the agenda-setter's policy changes between non-crisis and crisis periods. Specifically, in the example given in figure 3.1, the cutting-line separating 'yeas' from 'nays' rotates to become closer to horizontal. The more 'northerly' the policy proposal relative to the status quo, the more legislators will vote based on their preferences regarding the second dimension rather than the first, leading to a more horizontal cutline between the voting coalitions. Extending this logic to the general case, a crisis rotates cutting-lines to run perpendicular to the direction of the ideal point of the agenda-setters from the political centre, because the agenda-setter is able to move policy towards her ideal point to a greater degree. The dimension of observed political disagreement shifts towards the dimension along which the agenda setter differs most from the typical legislator, in this case increasingly dividing legislators according to their position in the second dimension rather than the first.

The second implication of the model is that agenda-setters will obtain policies closer to their ideal points during crises. Legislators take the broader policy-making environment into account when deciding on policy, and while always sensitive to deviations from their own policy preferences, they are also concerned with adopting policies that are congruent with current conditions. This means that when crises cause sudden changes in the external environment, existing poli-

cies (the status quo) become less attractive, and make legislators more receptive to alternative proposals. Agenda-setters are therefore able to propose (and pass) policies that more closely reflect their own preferences than would have been possible in the absence of a crisis. The model therefore provides micro-foundations for the idea that crises represent 'an opportunity to be exploited' by agenda-setting actors.

Our decision to model crises as a non-spatial valence shock distinguishes our argument from other plausible mechanisms that could link a crisis to changes in legislative behaviour. First, one could model an exogenous shock as a sudden movement of the status quo in the policy space (as in Tsebelis (2002)). Second, one might also model the effects of a crisis as an exogenous shift in the preferences of legislators. These alternatives both offer plausible descriptions of crisis politics. In some circumstances they lead to the same predictions, in terms of agenda-setter discretion, as the valence-shock model. Specifically, whenever a spatial shock leads to a *divergence* between decisive legislators and the status quo policy, the main implication of our argument holds. The less legislators like the status quo – for either spatial or non-spatial reasons – the greater the costs they face for inaction, and so the greater the discretion of the agenda-setter. In the appendix section B.3 we detail the conditions under which spatial and non-spatial shocks result in equivalent observable implications, and demonstrate that it is not necessary to accept the 'valence-shock' aspect of our model in order to accept most of our argument as to how crises empower agenda-setters.

However, while these explanations may not differ in terms of their observable implications, they do differ in terms of what they imply about counterfactuals. An interesting implication of the valence-shock model is that the winset expands symmetrically in the event of a crisis. The consequence of this is that the worse

the valence of the status quo, the greater the discretion of the agenda-setter to move policy *in any direction.* This contrasts with modelling a crisis as a *spatial* shock – either to preferences or to the position of the status quo – where changes in the winset will be determined by the specific direction of the shock, meaning that agenda-setters benefit only under certain conditions. In general we prefer to conceptualise a political crisis as a non-spatial shock because this better approximates our intuitive understanding of a crisis. Whereas spatial shocks (to either preferences or the status quo) imply that some actors *prefer* the crisis, non-spatial exogenous shocks make the status quo worse *for everyone.*

Crisis in the EU

Europe suffered two major waves of economic crisis between 2007 and the present. First, the collapse of the US subprime mortgage market sparked a global financial crisis which caused major difficulties for European banks (Brunnermeier, 2009). Second, in 2010, that banking crisis evolved into a sovereign debt crisis, as market fears spread that national governments would be unable to meet their guarantees to failing banks (Lane, 2012).

These crises demonstrated that EU economic policies and institutions, constructed in an extended period of growth, were ill-suited to times of economic turmoil. For example, the banking crisis revealed that European banks, which had become large and over-leveraged, represented a more significant risk to the stability of the financial system than was previously understood (Alessandri and Haldane, 2009; Carmassi, Gros and Micossi, 2009; Acharya, Drechsler and Schnabl, 2011). Furthermore, the pre-crisis regulatory framework was shown to be incapable of coping with the systemic nature of the crisis, providing no tools to respond to the collapse of large international banks (European Commission,

2013). As the crisis spread, MEPs were quick to notice the deficiencies in existing regulation.[5] Similarly, the debt crisis revealed structural problems with the design of the currency union as a whole. Existing policy to contain imbalances in public debt and current account deficits between Eurozone countries had proven inadequate, as the main rules to encourage fiscal coordination and discipline – enshrined in the Stability and Growth Pact (SGP) – had been consistently broken (ECB, 2011; Lane, 2012; Holinski, Kool and Muysken, 2012). In the positive economic conditions in which the SGP was formed, governments were able to fund excessive budget deficits relatively cheaply, by borrowing from the international bond markets (De Grauwe, 2011). However, as the crisis hit, and these markets dried up, the sustainability of these policies was called into question.[6] In general, the crisis dramatically reduced the attractiveness of existing status quo policies to legislators, and opened a window of opportunity for economic policy change.

Our model implies that that a relatively wide range of policy options could plausibly have won majority support in the EP during the crisis period, as MEPs should have been willing to make ideological compromises in order to replace defunct policy. Although the policies adopted during the crisis had a distinctive ideological profile, two broad policy responses, which proposed opposing shifts along the integration dimension, were initially discussed. On the one hand, pro-integrationist actors argued for the integration of banking regulation, the creation of new EU financial oversight institutions, and further empowerment of existing institutions to enforce fiscal discipline on member states. Proponents of this in-

---

[5]In a debate following the collapse of Lehman Brothers, a prominent member of the EP argued that "the supervision of the financial markets is not working...the status quo is untenable in the medium and long term." (Daul, 2008)

[6]As one MEP argued: "The economic and financial crisis has revealed all too clearly the shortcomings and weaknesses of the existing instruments and methods for coordinating economic and currency policy." (Seeber, 2008)

tegrationist response included the European Commission President, José Manuel Barroso, who argued that the EU response to the crisis "must be far reaching reform…Europe's contribution must be a big step for an ever closer, ever stronger Union" (Barroso, 2013).

On the other hand, an alternate policy response, supported largely by Eurosceptic actors, focused on streamlining the European institutions to make them more competitive, safeguarding national regulatory powers, and "repatriating" powers from Brussels back to the national level. British Prime Minister David Cameron made this argument in 2013 by emphasising that future EU reforms ought not to include "an insistence on a one size fits all approach which implies that all countries want the same level of integration. The fact is that they don't and we shouldn't assert that they do." (Cameron, 2013) This position was expressed more strongly by Nigel Farage, leader of the United Kingdom Independence Party, who argued that "We need to turn back. People need national control over their currencies and over their economies." (Farage, 2010) Overall, while the crisis led to dissatisfaction with the status quo from across the political spectrum, there was substantial disagreement about the ideal strategy for resolving deficient policy, disagreement that largely reflected the pre-existing dimensions of disagreement over EU integration.

Pro-Integration Agenda Control and Preferences in Two Dimensions

Policy preferences in the EP have been widely described in terms of two major dimensions. One dimension corresponds to the left-right issues that typically shape national-level politics, while the second dimension relates to the scope of authority of European institutions, with those favouring more European powers

at one end and those opposing the expansion of these powers at the other. This structure manifests itself clearly in roll-call (Hix, Noury and Roland, 2006, 2007; Hix and Noury, 2009; Høyland, 2010; Klüver and Spoon, 2013) and expert survey (McElroy and Benoit, 2007, 2011) data. The distribution of European Party Group (EPG) positions over these two dimensions results in an inverted-U shape, where centrist parties (on the left-right dimension) tend to have relatively strong pro-integration preferences, whereas parties towards the extremes of the left-right space tend to be more anti-integrationist. Figure B.3 in the appendix presents the expert survey located positions of the EPGs on these two dimensions for the seventh European Parliament (2009-14).

Although agenda-control in the EU is somewhat diffuse (Hix and Hoyland, 2011), the main agenda-setting actors are united by their pro-integration preferences. First, the European Commission – a supranational body appointed by the governments of EU member states – holds the exclusive right to legislative initiative within the EU. The Commission is the ultimate external gatekeeper in the EU-wide policy process (Hix, Noury and Roland, 2007, 111) and recent literature has emphasised the key role of the Commission as agenda-setter during the crisis period (Copeland and James, 2014). The Commission is usually assumed to be pro-integration (Tsebelis and Kreppel, 1998; Mattila, 2004; Hooghe, 2005), and has generally proved to be so in matters relating to the economic crisis.

Second, the internal agenda of the parliament is largely controlled by the leaders of the EPGs through the Conference of Presidents, a political body responsible for the organisation of parliamentary business (Kreppel, (2002, 210); see also chapter two of this thesis). Through the Conference, party group leaders determine the agenda for plenary sessions, and a voting system which is weighted by party size

allows the larger party groups – such as the EPP, ALDE, and the S&D[7] – to dominate the process. The large parties also hold the vast majority of lower-level agenda-setting offices – such as committee seats, chairs and rapporteurships – which are also distributed according to party group size. Thus, in the internal agenda-setting process of the Parliament, the large party groups are dominant, and have significant abilities to restrict the flow of legislative traffic. These parties are centrist on the first dimension, and distinctly pro-integration on the second dimension of conflict (see figure B.3 in the appendix). This, again, suggests that pro-integration actors monopolise agenda-setting privileges within the EP.[8]

Finally, leaders of national governments also have the ability to exercise agenda-setting powers in the EU policy process. The European Council, which is made up of the leaders of national governments, is responsible for setting the "general political direction and priorities" of the Union (Treaty of Lisbon, 2007). Similarly, Schmidt (2001) argues that the Council of Ministers, which is comprised of government ministers from each member state, has significant informal influence over the shape of policies proposed by the Commission. While the exact role these bodies play in the agenda-setting process is opaque, it is clear that they have some bearing on which issues arise on the legislative agenda. As with agenda-setters in the Parliament and the Commission, the leaders of the national governments are also largely united in their preferences for integration. As Warntjen et. al. (2008) show, preferences for integration in the Council have been positive and

---

[7]European People's Party; Alliance of Liberals and Democrats for Europe; Progressive Alliance of Socialists and Democrats

[8]Although the EPGs are relatively cohesive (Hix, Noury and Roland, 2005, 2007), they are comprised of ideologically heterogeneous national parties. This is particularly the case on the pro-/anti-integration dimension, where EPG positions are "far more pro-European than their constituent national parties." (McElroy and Benoit, 2011, 163) Accordingly, figure B.3 does not reflect the fact that the median voter in the parliament on the pro-/anti-dimension is less integrationist than the position of the large parties might imply.

stable across a long time period.

Thus, the preference structure of the EP and location of agenda-setting actors in the preference space largely reflects the theoretical structure we previously used to illustrate our model in figure 3.1.[9] What then are the implications for the voting coalitions that formed and the policies that passed during the economic crisis?

PREDICTIONS

Our model implies that, as agenda-setters in the EP are uniformly pro-integration, policies passed by the European Parliament during the crisis should be more integrationist than they would have been without the crisis. It is unambiguous that integrationist legislation passed during this period. The legislative response to the financial crisis included many policies that transferred significant powers from the national to the European level. The EU instigated a major set of banking reforms, including: a common rulebook for banking practice; the establishment of a Single Supervisory Mechanism (SSM) for the oversight of risk in the banking system; a Single Resolution Mechanism (SRM) which makes Eurozone governments jointly responsible for the solvency of private banks; and a host of new institutions which aim to limit systemic risk. The European Commission acquired dramatically in-

---

[9]One possible objection is that the 'take-it-or-leave-it' agenda power assumed by our model is unrealistic in the EP, where floor amendments are permissible. If amendments can be used to rein in proposals that are too integrationist, while still replacing the status quo with a higher valence proposal, then pro-integration agenda-setters would not profit from increased discretion during a crisis. However, evidence strongly suggests that amendments tend to change policy on the left-right dimension of conflict, but not the integrationist dimension (Kreppel and Tsebelis, 1999; Kreppel, 2000; Kreppel and Hix, 2003; Hix, Noury and Roland, 2007). There are technical limitations to proposing such amendments, as doing so would require legislators to propose fundamentally reformed institutional structures. This would require significant legislative resources, expertise, and drafting time. The anti-integrationist party groups (the actors with an incentive to propose such amendments) are resource-poor in comparison with the larger groups and the European Commission. Thus, in the context of the EP, it is unlikely that the power of agenda-setters is significantly diminished by the availability of amendments.

creased powers under the new fiscal framework, the harmonisation of banking standards directly affects national law, and the new institutions can be seen as quasi-federal supervisory authorities (Lannoo, 2011, 2).

The response to the debt crisis was perhaps even more integrationist. The most high-profile changes included the creation of the European Stability Mechanism (ESM), a permanent rescue facility for the Eurozone area; legislation to increase the Commission's ability to scrutinise member-state finances; and a legislative 'six pack' which bolsters the Stability and Growth Pact by establishing fiscal goals to which member-states must converge. Again, these reforms entail a significant deepening of integration in economic affairs, empowering supranational actors such as the Commission and the European Central Bank, and transferring sensitive policy competences to the European level. In sum, integrationist policies relating to sovereign finances, macro-economic coordination and banking reform were proposed by the European Commission, and were adopted by legislators in the EP.

However, the fact that integrationist policy passed is not sufficient for our argument, as we suggest that policies that passed after 2008 were more integrationist than was possible before the crisis. Indeed, if our theoretical model captures the dynamics of the EU case, there are clear implications for how voting coalitions in the two-dimensional space of EU politics ought to have changed in response to a crisis. The main observable implication of the model is apparent in the bottom-right panel of figure 3.1, where the cutline separating the 'yea' from the 'nay' voters rotates after the valence shock to become closer to horizontal. We expect a similar rotation of the cutlines in the EP in response to the financial crisis. If agenda-setters proposed more pro-integration policy solutions, the cutting-lines separating voting coalitions should have been increasingly horizontal, dividing pro-

and anti-European MEPs, rather than vertical, dividing right and left MEPs.

We denote the angle of the cutting line of a given vote as $\varphi_j$, and define this angle over an arc of $2\pi$ such that it equals zero when the cutting line is horizontal.[10] Our argument suggests that when a crisis occurs, the valence of existing policy will decline, leading to more integrationist policy proposals, and a shift in the distribution of the cutting-lines. In the context of the EP, for a given set of votes, we expect that the cutting-lines will become, on average, closer to horizontal after the onset of the crisis. In terms of $\varphi_j$, we can characterize the average tendency of coalitions to align with yes votes among pro-integration MEPs using the mean absolute angular deviation (MAAD) from zero:

$$MAAD = \frac{1}{M} \sum_{j=1}^{M} |\varphi_j| \tag{3.3}$$

The closer to zero the MAAD is, the greater the tendency of votes to have yes voters among pro-integration MEPs (of both left and right) and no voters among anti-integration MEPs (of both left and right).

Crucial to our argument is that we only expect MAAD to decline in policy areas that are affected by the crisis. As noted previously, not all status quo policies are affected by any particular crisis. Our argument is policy-domain specific, as it is only status quo policies in crisis-related areas that will receive a valence shock, and so only in votes on these issues that we expect to observe a rotation of cutting-lines. This yields a testable prediction that has the form of a differences-in-differences: we expect that after the onset of the crisis, cutting lines will shift

---

[10]We formally derive the relationship between the cutting line angle and the extent to which policy is moving in the second relative to the first dimension in section B.4 of the appendix. Figure B.3 provides a graphical depiction of different values of $\varphi$.

towards horizontal in crisis-relevant policy areas relative to non-crisis-relevant policy areas.

## Methods and Data

In order to test this prediction, we make use of two main data sources. First, we require voting records for legislators in the EP across the crisis period. We collect this information from `www.votewatch.eu` which keeps a record of every recorded vote in the European Parliament. We collect all votes from the sixth and seventh European Parliaments (2004-2014), therefore including a period before and after the emergence of the crisis in late 2008. Throughout the analysis, we treat votes from the 6th European Parliament (EP6) as 'pre-crisis', and votes from the 7th European Parliament (EP7) as 'post-crisis', an assumption that we discuss below.

Second, we require information that allows us to differentiate between crisis-related and non-crisis-related votes. As explained below, we develop a novel text classification strategy to estimate the degree to which pre-crisis votes were 'crisis-relevant' so that we can make a fair comparison of votes pre- versus post-crisis. For each vote we collect a legislative summary text from the European Parliament website.[11] The summaries give details of the purpose, background, and content of legislation under discussion, and thus provide salient textual information for classification. An example text is provided in appendix figure B.4.

## 2D Scaling with Expert Survey Identification of Dimensions

In order to make the estimated cutlines for EP6 and EP7 comparable, it is necessary to jointly estimate preferences over both Parliaments. We combine the roll-call votes taken in EP6 and EP7, holding the preferences of MEPs serving in

---

[11]`www.europarl.europa.eu`

both constant. To ensure that we can distinguish left-right political preferences from pro-anti integration preferences, it is necessary to use some kind of auxiliary information to orient the latent preference space along those axes. To identify these dimensions, we implement a hierarchical 2D ideal point estimator in Stan (Stan Development Team, 2014) using expert survey data (McElroy and Benoit, 2011) to locate the average positions of party groups in EP6 and EP7. These locations form priors over the average positions of MEPs in each of the two dimensions, with the party group priors for both EP6 and EP7 informing the priors of MEPs who served in both Parliaments.

Where $\beta_{jd}$ are the vote parameters for each dimension $d$ for roll call $j$, and $\theta_{id}$ are the preferences of MEP $i$ on each dimension $d$, and $x_{g(i)d}$ is the expert survey estimate of the party group $g$ of legislator $i$ on dimension $d$, the core of the ideal point model is:

$$
\begin{align}
p(Y_{ij} = 1) &= \Phi\left(\beta_{j0} + \beta_{j1}\theta_{i1} + \beta_{j2}\theta_{i2}\right) & (3.4)\\
\beta_{jd} &\sim N(0, 2^2) & (3.5)\\
\theta_{id} &\sim N(x_{g(i)d}, \sigma_d^2) & (3.6)
\end{align}
$$

Because individual MEPs are treated as draws from the expert survey party group mean, with an estimated degree of dispersion around that mean in both dimensions, the expert survey data provides a weak constraint on the estimated locations of MEPs. The effect of this prior is to orient the 2D ideal point space as close to the survey data as possible, but it only weakly influences the locations of individual MEPs relative to their colleagues, and only to the extent that the prior generally fits the relative locations of MEPs. The estimated cutting angle

$\varphi_j$ is calculated from the estimated values of the $\beta_{jd}$ as described in section B.4 of the appendix.

CRISIS-RELEVANT AND NON-CRISIS-RELEVANT VOTES

Our model implies that there will be a difference in the distribution of the $\varphi_j$ between votes that relate to the crisis and votes that do not, but identifying 'crisis-relevant' votes is non-trivial. One approach would be to classify votes according to their committee of origin so that, for example, votes on reports originating from the Economic and Monetary Affairs (ECON) committee could be crisis-relevant, and all other votes non-relevant. However, relying on a simple committee categorisation is problematic. ECON reports include a diverse selection of legislation, only some of which pertain to the crisis. Similarly, many explicitly crisis-related reports did not originate in the ECON committee.[12] Such an approach would yield a coding that, at best, only roughly approximated our classification of interest.

Instead, we make use of the legislative summaries introduced above to produce a binary coding of 'crisis-relevant' and 'non-crisis-relevant' votes in the seventh European Parliament (EP7). We search the EP7 summaries for five key phrases that indicate direct relevance to the crisis: "financial crisis", "economic crisis", "sovereign debt crisis", "euro crisis", and "eurozone crisis". Of the 6,916 votes held during EP7, our selection procedure codes 1,071 as 'crisis-relevant'. Based on this categorisation, we can then compare the distribution of cutting-angles within EP7. Table 3.1 presents the results of a simple linear regression of the estimated absolute angular deviation, $\varphi$, on the binary 'crisis-relevant' indicator. The coefficient for this indicator in the regression is simply the difference in mean absolute angular

---

[12]For example, an important parliamentary resolution concerning the feasibility of stability bonds (or 'Eurobonds') did not originate in the ECON committee.

deviation (equation 3.3) between crisis and non-crisis relevant votes. As implied by our theoretical model, votes in EP7 on crisis-relevant legislation were marked by significantly ($t = -6.8$, assuming independence) and substantially (about 18%) lower values of the average cutting angle $\varphi$ than non-crisis relevant votes during the same period.

This simple comparison of voting in the seventh European Parliament provides initial support for a major implication of our model. Legislative coalitions on crisis-relevant votes formed more on the pro-anti integration dimension than did non-crisis votes, and there are more than enough votes to say that this cannot be dismissed as the result of unsystematic variation in voting coalitions.

**Table 3.1:** Linear regression of $\varphi$ on 'crisis-relevant'

|  | Absolute Angular Deviation |
|---|---|
|  | $\varphi$ |
| Crisis-relevant | $-0.204$ |
|  | (0.030) |
| Constant | 1.183 |
|  | (0.012) |
| Observations | 6,961 |
| R$^2$ | 0.007 |

| *Note:* | Standard errors in parentheses |
|---|---|

SYNTHESISING A CONTROL GROUP USING LEGISLATIVE TEXTS

The most obvious objection to the preceding comparison of means is that the difference we identify between crisis-relevant and non-crisis relevant votes in EP7 may reflect a pre-existing feature of EP disagreement across different policy domains. Perhaps we are recovering something about the general structure of voting

116

on economic and finance versus other issues, and not a *change* in voting structure that resulted from the crisis. Clearly we are unable to observe the relevant counter-factual: what would voting have looked like in EP7 in the absence of a crisis? In this section, we synthesise the most plausible, feasible control group with which to compare the difference estimated above.

Our point of comparison is with the preceding European Parliament, where voting coalitions were not subject to the crisis effects that our model contemplates. Examining changes in voting coalitions between EP6 and EP7 allows us to compare crisis and non-crisis parliaments. However, to make the relevant comparison, we need to identify votes from EP6 that are substantively similar to the crisis-relevant votes from EP7. One approach would be to manually select a series of votes from EP6 that we deem to be on issues similar to the crisis-relevant votes in EP7. However, this would be ad hoc, and would require a great deal of subjective judgement. It is also sufficiently unclear what it means for a vote to be 'crisis-relevant' in EP6 as to make any strictly binary classification problematic.

To circumvent this problem, we develop a linear probability classification of EP6 votes, using the binary classification of EP7 votes described above as the training data for a model that predicts crisis-relatedness using features of legislative summary texts. The intuition behind our estimation strategy is to use the information contained in the legislative summaries to find votes in EP6 which are about substantively similar issues to the crisis-related votes in EP7, and to use these votes to compare voting coalitions on these issues across the crisis and non-crisis periods. We proceed in three steps.[13]

First, we estimate a series of topic models (Blei and Lafferty, 2006; Roberts et al., 2014) from the corpus of legislative summaries of each vote in EP6 and

---

[13]We give more detail on the construction of our approach in section B.6 of the appendix.

EP7. The key quantity of interest recovered from each of these topic models is a matrix of topic proportions, that describes the fraction of each legislative summary $d \in \{1, 2, ..., D\}$ that is from each topic $t \in \{1, 2, ..., T\}$. These matrices offer a high-dimensional summary of the substantive content of each vote, and give us a basis on which to find thematically similar votes in EP6 and EP7. Choosing the appropriate number of topics is a common problem in topic models, and typical solutions (e.g. Blei, Ng and Jordan (2003)) aim to find the model that best predicts held-out textual data. In our case, we are not interested in predicting *text* data out of sample, but rather in predicting our manual classification of 'crisis-relevant' votes. Because the number of topics that will do this best is unclear *a priori*, we estimate topic models for all $K = 98$ integer topic counts from 3 to 100.

Second, we use the topic proportions for the EP7 votes as explanatory variables in linear regressions, where the dependent variable is the manually coded 'crisis-relevant' binary classification introduced above. We then use the estimated coefficients to generate fitted values, denoted $\hat{\pi}_{j(kd)}$, for all votes in both EP6 and EP7. These values represent the probability that each vote, $j$, is crisis-relevant, given the vector of topic proportions for legislative summary $d$ from topic model $k$. The intuition is that the regression coefficients on the topic proportions indicate the thematic elements (words) that predict a vote being crisis-relevant, and the fitted values thus provide a measure for whether the issues addressed in each vote from both EP6 and EP7 were ultimately relevant to the crisis.

Third, we use the fitted values as explanatory variables in $K$ second-stage linear regressions of the following form:

$$|\varphi_j| = \alpha_k + \beta_{k1} \cdot EP7_j + \beta_{k2} \cdot \hat{\pi}_{j(kd)} + \beta_{k3} \cdot (EP7_j \cdot \hat{\pi}_{j(kd)}) + \epsilon_{j(d)} \qquad (3.7)$$

where $\varphi$ is the angle of the cutting line, $EP7$ is an indicator variable for whether the vote was taken during the seventh European Parliament (i.e. during the crisis), and $\hat{\pi}_{j(kd)}$ measures the crisis-relevance of the vote. Because we are using fitted values for whether the vote was crisis-related, the coefficients remain estimators of the difference between the MAAD of crisis-related ($\hat{\pi} = 1$) and non-crisis-related ($\hat{\pi} = 0$) votes. Our primary quantity of interest is then the estimated $\hat{\beta}_{k3}$ coefficient. This is the interaction between the probability of a vote being crisis-relevant, and that vote being held during the crisis. The theoretical model implies that the interaction coefficient should be negative, implying that crisis-relevant votes in EP7 were marked by increasingly pro-versus-anti integration coalitions, rather than left-versus-right coalitions, relative to non-crisis-relevant votes.

This approach, which is an unusual application of a two-stage least squares estimator, has two attractive features. First, using the legislative summary texts ensures that we are comparing *thematically* or *topically* similar votes in EP6 and EP7. This means that if there had always been a difference between how the EP voted on the issues that ultimately become crisis-related and other issues, we will observe a constant difference in EP6 and EP7, and the difference-in-differences ($\beta_{k3}$) will be zero. Second, using the fitted values for crisis-relatedness for both EP6 and EP7, rather than using the EP7 binary coding we used to train the first-stage classifier, enables a fair comparison of the two periods. If our classifier does not work well, the comparison of the EP7 difference estimated using the binary classification versus that estimated on the fitted values will provide an indication that there is a problem with the comparison we are making.

Two methodological issues remain. First, in order to incorporate estimation uncertainty from the first stage regression model into our estimates at the second stage, we bootstrap both regression models. As votes are grouped within texts,

119

and the topic mixtures vary only at that group level, we use a block bootstrap to account for within-text error correlation in the first stage model (Angrist and Pischke, 2009, 315). We jointly bootstrap both regression stages 1000 times, resampling the texts with replacement, and estimating our quantities of interest at each iteration. Second, the ambiguity over the number of topics to include in the topic models means that there is no *a priori* reason to prefer any one vector of $\hat{\pi}_k$ values, nor any one $\beta_{k3}$ coefficient. However, while we have no a priori reason to prefer any particular number of topics, we can assess which topic model yields the most predictive first stage regression for predicting the manual coding of which EP7 votes were crisis-related. For each of the first stage regressions, we therefore calculate BIC, AIC and Adjusted $R^2$. AIC and Adjusted $R^2$ agree on the 62 topic model, while BIC (which includes a greater penalty for additional parameters) favours the 29 topic model.[14]

## Results

Before turning to our main results, it is important to evaluate the validity of our classification procedure for specifying which EP6 votes were in policy areas that were to become relevant to the crisis once it arrived. First, we can directly examine the votes from both EP6 and EP7 which our model estimates to have high 'crisis-relevant' probabilities ($\hat{\pi}_{j(kd)}$). Table 3.2 presents the titles of the top 20 crisis-relevant texts from the 29 topic model, from both parliamentary terms.[15] The results could hardly be more reassuring. As expected, the classification procedure successfully recovers the explicitly crisis-related votes from EP7. Many of the well-known economic reforms – such as the 'Six pack', the 'Two pack', and

---

[14]In figure B.5 in the appendix we present the three fit statistics for all 98 models.

[15]An equivalent table, for the 62 topic model, is given in table B.1 of the appendix.

the European Semester – feature in EP7 list. The EP6 votes – which occurred before the crisis – are also all directly related to the economic issues that became increasingly significant after 2008. Votes relating to the strengthening of national budgetary positions, public finances, financial markets, credit rating agencies, and the common currency all feature prominently at the top of the EP6 list. The procedure is not simply picking up votes from late 2008 and early 2009 in EP6, as several of the vote titles include the year in which they were voted upon, and they cover the whole of the EP6 period. In general, these results suggest that our classification procedure works remarkably well, and that our synthetic control group is a reasonable basis for comparison.

Second, we can evaluate the degree to which the fitted values enable us to estimate the 'true' difference between crisis-relevant and non-crisis-relevant votes in EP7 using our two-stage regression procedure. We can compare the estimated coefficient on the first stage fitted values for EP7 from our second-stage model (equation 3.7) with the difference in means from our manually coded votes given in table 3.1. Recall that we are using the fitted values even for EP7 where we have the direct binary coding in order to make sure that the comparison with EP6 is a fair one. If the directly calculated difference from the manually-coded data and the two-stage estimate based on the fitted values constructed from the topic model estimates are similar, we can be confident that, at least for EP7, our topic model approach is approximating the 'true' difference that we calculated previously.

The middle panel of figure 3.2 compares the estimates from our manual coding of crisis-relevant votes (red horizontal line, equivalent to table 3.1) and the coefficients estimated using the fitted probabilities from each of the 98 models. The solid black points and intervals show the estimated coefficients for EP7 preferred

121

**Table 3.2:** Top 'fitted values' votes - 29 topics

|    | EP6 vote titles | EP7 vote titles |
|----|-----------------|-----------------|
| 1  | Strengthening of budgetary positions and coordination of economic policies | Macro-financial assistance to Armenia |
| 2  | Public finances in economic and monetary Union EMU in 2004 | Economic governance & strengthening of surveillance of budgetary positions and coordination of economic policies 'Six pack' |
| 3  | 2006 annual report on the euro area | Macro-financial assistance to Georgia |
| 4  | Financial markets & banks affiliated to central institutions, large exposures, supervisory arrangements, and crisis management | Economic governance: implementation of the excessive deficit procedure. 'Six pack' |
| 5  | Public Finances in EMU 2006 | Macro-financial assistance to Ukraine |
| 6  | Public finances in EMU 2007 and 2008 | Macro-financial assistance to Serbia |
| 7  | Credit institutions: taking up and pursuit of the business. Recast | Economic governance: strengthening of economic and budgetary surveillance of Member States experiencing or threatened with serious difficulties with respect to their financial stability in the euro area. 'Two pack' |
| 8  | European Globalisation Adjustment Fund: redundancies in mobile phone sector | Macro-financial assistance to Bosnia and Herzegovina |
| 9  | Credit rating agencies | Economic governance: effective enforcement of budgetary surveillance in the euro area. 'Six pack' |
| 10 | Report on the ECB annual report for 2007 | Economic governance: financial assistance for Member States whose currency is not the euro |
| 11 | Lamfalussy follow up - Future structure of supervision | Improving the economic governance and stability framework of the Union, in particular in the euro area |
| 12 | ECB annual report for 2003 | Long-term sustainability of public finances for a recovering economy |
| 13 | Resolution on the G20 Summit April 2009 | European Central Bank annual report for 2011 |
| 14 | ECB annual report for 2003 | ECB annual report for 2010 |
| 15 | Medium-term financial assistance for Member States' balances of payments | Financial institutions: capital requirements for the trading book and re-securitisations; supervision of remuneration policies |
| 16 | EMU@10: The first 10 years of Economic and Monetary Union and future challenges | Macro-financial assistance to Kyrgyzstan |
| 17 | Mobilisation of the European Globalisation Adjustment Fund: redundancies in textiles sector | Further macro-financial assistance for Georgia |
| 18 | Facing oil challenges | Feasibility of introducing stability bonds |
| 19 | Euro zone enlargement | EBRD: subscription by the EU to additional shares in the capital |
| 20 | Euro & adoption by Slovenia of the single currency (Article 122(2), Treaty TEC) | European Semester for economic policy coordination: implementation of 2013 priorities |

by BIC and AIC/Adjusted $R^2$. Aside from the very small topics, which generate imprecise estimates, nearly all of the topic models yield a significant negative estimate of the EP7 difference. Although there is a tendency to overestimate the magnitude of the coefficient, the estimates based on the selected 62 topic model are among the closest to the true difference in means. This gives us confidence that the topic modelling approach is indeed measuring the quantity of interest from EP7.

With these results in hand, we now turn to the interaction coefficient, which corresponds to a difference-in-differences estimate of the change in the difference between crisis-related and non-crisis-related votes between EP6 and EP7. Our theoretical expectation is that the interaction between the EP7 indicator and the fitted value for a vote being crisis-relevant will have a negative sign. This would imply that coalitions on crisis-relevant votes formed increasingly on the pro-versus-anti integration dimension of conflict during the crisis period, relative to non-crisis-relevant votes, relative to that difference during the non-crisis period. Table 3.3 gives the results of the models preferred by BIC and AIC/Adjusted $R^2$, and the bottom panel of figure 3.2 graphically depicts the individual $\beta_{3k}$ estimates, again highlighting the selected models in black.

Crisis-related votes in EP6 were characterised by voting coalitions that were somewhat *more* left-right than other votes, although this is inconsistently significant across the various topic models (top panel, figure 3.2). Combined with the fact that crisis-related votes in EP7 were significantly more pro-anti than other votes, this leads to significant differences in differences, not only in the two models with the best first stage fit, but in all topic models except two of the poorly fitting ones with very small numbers of topics. The negative difference-in-differences indicates that cutting lines on crisis-relevant votes were closer to horizontal in EP7,

**Figure 3.2:** Estimated effect of crisis-relevant and EP7 interaction
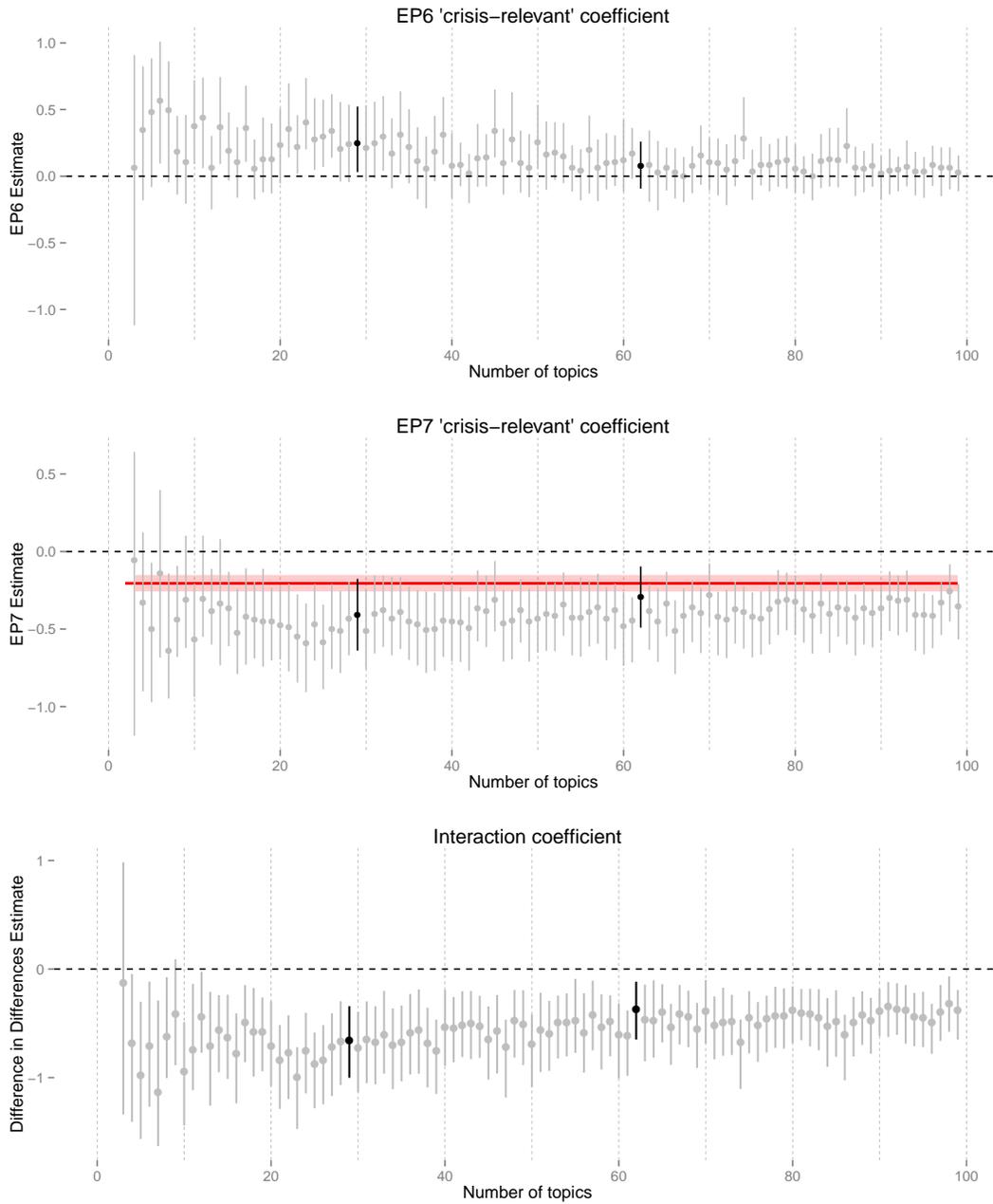


NOTE: The top two panels show estimates of the EP6 (top) and EP7 (middle) difference between crisis- and non-crisis-related votes. The bottom panel shows the difference in differences.

**Table 3.3:** Second stage linear regressions – BIC and AIC/Adjusted $R^2$ models

|  | Absolute Angular Deviation | |
|---|---|---|
|  | 29 topics | 62 topics |
| $\hat{\pi}$ | 0.076 | 0.245 |
|  | (0.089) | (0.123) |
| EP7 | -0.056 | -0.024 |
|  | (0.046) | (0.047) |
| $\hat{\pi} * \text{EP7}$ | -0.368 | -0.655 |
|  | (0.14) | (0.167) |
| Constant | 1.243 | 1.231 |
|  | (0.029) | (0.028) |
| Observations | 12736 | 12736 |

NOTE: The table presents estimates from the two best-fitting models, as selected by BIC (29 topics) and AIC/Adjusted $R^2$ (62 topics) at the first stage. Bootstrap standard errors are given in parentheses.

relative to non-crisis votes, relative to the same difference in EP6.

Recall that the purpose of creating the synthetic control comparison using EP6 was to rule out the possibility that the kinds of issues that became crisis-relevant had always exhibited relatively pro-anti voting coalitions, even before the crisis. The estimates here suggest otherwise: pro-integration coalitions formed more frequently on crisis-related votes in EP7 relative to non-crisis-related votes but the opposite was true in EP6. The effect is both statistically significant and substantively large. Recall that the MAAD was 20% lower on crisis-related votes than on non-crisis related votes in EP7 (table 3.1). Given the positive coefficient in EP6, the change in voting once the crisis began was larger than this.

Overall, these results indicate that the coalition structure of voting in the Eu-

ropean Parliament changed meaningfully after the onset of the financial crisis in those issue areas that the crisis affected. This is what we expected to observe if pro-integration agenda-setters were able to exploit the crisis in order to pass integrationist policy that would previously have failed to win a majority of support.

## Threats to Inference

One concern with the above analysis is that the change observed in voting behaviour could be the result of factors other than the crisis. In particular, two alternative explanations deserve attention. First, changing voting behaviour could be the result of a change to the composition of the Parliament after the European elections in early 2009. The EP became more fragmented after the election, with smaller parties winning seats from the larger parties, with the implication that fewer pro-integration MEPs were elected. This fragmentation may have lead to more 'grand coalition' votes, where the large party groups vote together due to their decreased parliamentary strength (Hix, 2009).

Second, the European Parliament changed the rules governing which roll-call votes were recorded in EP7. Previously, roll-call votes were recorded only when requested by a political group or one-tenth of the MEPs. Previous research has shown that roll-calls were called on approximately one-third of all votes (Hix, 2009; Carrubba et al., 2006). However, from June 2009, and the start of EP7, all final legislative votes were automatically taken by roll-call. The effects of roll-call selection in the European Parliament are unclear (Carrubba et al., 2006; Yordanova and Mühlböck, 2015), but it is possible that this change could result in increasingly pro-anti voting coalitions. For example, if roll-call votes had previously been avoided on final votes that were supported by a pro-integration coalition, then the rule change would possibly have resulted in increased observations of

pro-integration coalitions (and, thus, lower MAAD scores) in EP7.

While we are unable to entirely discount these alternative explanations that involve the EP6/EP7 changeover, if either the electoral explanation or the rule change explanation were true, we would expect to observe decreasing MAAD scores *across all policy areas* rather than just those related to the crisis. The logic of these arguments is that there was some structural or institutional change that affected the entire parliament in 2009, but our analysis uncovers significant change in voting behaviour only on crisis-relevant issues. As table 3.3 makes clear, there is essentially no change in the average cutting line on non-crisis-relevant votes between the two parliaments. The EP7 coefficient gives the change in MAAD for non-crisis relevant votes, and although the coefficient is slightly negative in both the 29 and 62 topic models, it is statistically indistinguishable from zero and far smaller in magnitude than the interaction effect. Any alternative explanation for the findings presented here must explain both the change in behaviour over time, and the fact that change occurs only in crisis-related votes.

A possible objection to the theoretical framing that we have provided for our analysis is that the crisis did not affect the valence of the status quo, but rather influenced the *spatial* elements of legislators' utility by making MEPs more favourable to increased integration. To account for the fact that observed changes are only in crisis-related policy areas, it would need to be the case that the crisis changed preferences of MEPs in just those areas, which is possible if you take the view that the crisis specifically signalled a need for more integration in only those policy areas. As discussed in our theoretical section, and in section B.3 of the appendix, this argument is plausible, but not necessarily incompatible with our own. Both spatial and non-spatial crisis models in this context engage with the idea that the crisis somehow changed the incentives to integrate for MEPs. We think it

makes more sense to think about the quality of status quo policy, rather than the spatial preferences of legislators for integration, being differentially affected by the crisis, and so we understand the effect of the crisis on voting behaviour as being transmitted through the non-spatial component of utility. In general, however, the most interesting theoretical implications of both our story and the changing preferences story focus on the same counterfactual. Under either account, the primary dimension of conflict in the EP shifted towards pro-anti votes in crisis-relevant areas and policies were passed following the financial crisis that would not have passed in the absence of the crisis.

Conclusion

When José Manuel Barroso, the President of the European Commission, gave his State of the Union speech to the European Parliament in 2013, he argued that, "If we look back and think about what we have done together to unite Europe throughout the crisis, I think it is fair to say that we would never have thought all this possible five years ago." (Barroso, 2013) The degree of integration in financial and economic affairs following the crisis was indeed unprecedented, and the argument we have made here is that these policies succeeded because the crisis strengthened the position of pro-integration agenda-setting actors (including Mr Barroso). One implication of our empirical analysis, given our theoretical model, is that such significant increases in EU competences might not have occurred in the absence of a crisis.

More generally, our model provides micro-foundations for the intuition that crises represent 'opportunities to be exploited' by industrious agenda-setters in the legislative process. Exogenous shocks decrease the efficacy of existing policy

128

in the context of changing real world conditions, and make status quo policies less attractive to all legislators. Because legislators want to replace deficient policy, those with proposal power are able to secure outcomes that would be impossible without a crisis. In contrast to previous literature on crises, we demonstrated how a specific impediment to reform is reduced by exogenous shocks, and also provided predictions about the direction of policy movement during crisis periods which have empirically observable implications for voting patterns which we were able to test.

Our model may also be a useful heuristic for understanding the legislative effects of other crises, particularly when pre-existing policy disagreement is multidimensional. For example, in 1957, Lyndon Johnson, then US Senate majority leader and a powerful agenda-setter, recognised that the civil rights bill proposed by President Eisenhower was likely to be filibustered by the Senate southern Democrats. The opposition of these legislators was a significant constraint on executive action, and forced Johnson to admit amendments that significantly weakened the enforcement of the bill (Jeong, Miller and Sened, 2009). By 1964, however, Johnson, now President, was able to pass the more robust Civil Rights Act. It is commonly accepted that the racial tensions of the early 1960s gave momentum to the civil rights movement, and offered Johnson a window of opportunity in which to pass reform (Keeler, 1993, 462). One reading of this is that legislators' preferences shifted towards wanting civil rights legislation, but our model indicates that the marginal legislators could instead have simply recognised that the status-quo was increasingly untenable. As a pro-civil rights agenda-setter, Johnson was able to pass reforms that had previously proved intractable in the legislature, shifting patterns of voting towards a north-south dimension during this period (Poole and Rosenthal, 2011, 141-142). Our model has an important implication for the

129

counter-factual: what policies might have been successfully advanced by an anti-civil rights President in the context of the diverse events of the early 1960s, from the "March on Washington" to the Birmingham church bombing? Civil rights legislation might now seem like the obvious policy response, but there is no shortage of historical crises that have been exploited by political agenda setters to achieve less righteous ends. The kinds of crises we model facilitate shifts in any policy direction.

A further theoretical implication is that strategic agenda-setters may have an incentive to exaggerate crisis severity in order to maximise their discretion over policy outcomes. There are anecdotal suggestions that certain EU institutions behaved in this manner during the financial crisis. For example, the bond-buying policy of the European Central Bank (ECB) enabled indebted governments to secure enough liquidity to stave off immediate sovereign default, but stopped short of providing a blank cheque which would have fundamentally reassured nervous market actors. Although not itself an agenda-setting actor, the ECB's piecemeal strategy allowed other pro-integration actors such as the Commission to put additional pressure on national leaders and MEPs to agree to reforms of the Eurozone's institutional architecture. As one observer argues, "The central bank cannot directly compel democratically elected leaders to comply with its wishes, but it can refuse to bail their countries out and thereby permit the crisis to pressure them to act."(Bergsten, 2012) In short, by emphasising the deficiencies of existing policy, and exaggerating the likely future trajectory of a crisis, agenda-setting actors can cajole decision-makers into passing the policies that they propose.

We describe how crises enable agenda-setters to overcome legislative opposition to policy change, but there is no explicit role for voters in our model. An enrichment of the model would be to make legislators subject to voter pressure.

130

However, for this to make a difference to the power of the agenda-setter, voters would have to respond to crises by sanctioning some courses of action whilst prohibiting others. More likely, we believe, is that voters' main desire is for politicians to 'get something done' in the face of a crisis, thus endowing agenda-setting actors with a *public* mandate that reinforces the *legislative* mandate they gain in our model. If anything, this will further discourage legislators from voting for the status-quo. As Keeler (1993, 441) argues, a sense of public urgency "may serve to override …caution …and allows for unusually rapid and uncritical acceptance of reform proposals intended to resolve the crisis." This urgency therefore makes the electorate more permissive of policy proposals, and so reinforces agenda-setters discretion. The incorporation of electoral effects into our model may well serve to reinforce the central implication that agenda-setters benefit, regardless of what they aim to use the crisis to accomplish.

# 4

# Legislative Role Models: Female Ministers, Participation, and Influence in the UK House of Commons

Abstract

When women are promoted to high political office, do they serve as role models to other women in politics? I evaluate a female role-model hypothesis by examining patterns of participation and influence in parliamentary debates in the UK House of Commons. In the context of a difference-in-differences design which exploits variation in the gender of cabinet ministers over an 18-year period, I demonstrate that appointing a female minister increases the proportion of words spoken by other female MPs in relevant debates by approximately one third, compared to when the minister is male. Further, I develop a new measure of influence in parliamentary speech, based on the degree to which the words used by one legislator are subsequently adopted by other members in debate, which I use to show that female cabinet ministers also increase the influence of female backbenchers. To explore the mechanisms that drive these results, I introduce a new quantitative metric of ministerial responsiveness based on the linguistic similarity between a backbencher's speech and a minister's reply, and show that female cabinet ministers are significantly more responsive to the speeches of female backbenchers than are male ministers.

> Many years ago I worked in the House of Commons for a woman
> that I admired very much called Barbara Castle. She was my
> role model because I felt, well, if Barbara can do it then I can do
> it. (Boothroyd, 2013)

———————————————————————————

Baroness Boothroyd, Former Speaker of the House of Commons.

WHEN WOMEN ARE PROMOTED TO HIGH POLITICAL OFFICE, do they serve as role models to other women in politics? The factors that determine the appointment of women to political leadership roles have been the subject of increasing study in recent years (Heath, Schwindt-Bayer and Taylor-Robinson, 2005; Escobar-Lemmon and Taylor-Robinson, 2008; Bochel and Bochel, 2008; Krook and O'Brien, 2012; O'Brien, 2015), but we know considerably less about the implications of these appointments for the behaviour of other politicians, or for the representation of women's interests in politics more generally. This is surprising as research suggests that female leaders may be especially consequential for influencing the behaviour of other women in a group. In particular, the idea that successful or prominent women can act as 'role models' receives empirical support in a number of different settings, including electoral politics (Wolbrecht and Campbell, 2007; Beaman et al., 2008; Gilardi, 2015), education (Gilbert, 1985; Nixon and Robinson, 1999; Rask and Bailey, 2002; Bettinger and Long, 2005; Dee, 2007; Brajer and Gill, 2010; Beaman et al., 2012) and business (Wang and Kelan, 2013; Bertrand et al., 2014). However, this line of research has not thus far considered the possible effects of female role models within the legislature. As the quote in the epigraph suggests, the potential for successful women to act as role models for other women in the legislature is acknowledged by female politicians themselves, and yet this idea has not previously been subjected to systematic

empirical scrutiny.

In this study, I address this gap in the literature, and move beyond anecdotal evidence, by evaluating a female role-model hypothesis in the context of the UK House of Commons. I focus on one particularly visible leadership role in the legislature – cabinet ministers in the UK government – and I study the effects of the appointment of female cabinet ministers on the participation and influence of other female members of parliament (MPs) in plenary debates.

Analyses of parliamentary speechmaking are increasingly common in political science research (Quinn et al., 2010; Proksch and Slapin, 2012; Lauderdale and Herzog, 2016), and they offer important advantages for improving our understanding of patterns of representation in legislative politics. For example, when speaking is a mechanism for collective decision-making, inequalities in participation and influence may reflect deeper inequalities between groups (Karpowitz, Mendelberg and Shaker, 2012). Furthermore, the ways in which individuals interact in group discussions can provide important insights into relative distributions of power, particularly with regard to gender (Karakowsky, McBey and Miller, 2004). Understanding the conditions under which female legislators participate and hold influence in political debates is therefore important for evaluating the representation of women's interests in politics more broadly. The goal of this paper is to examine one factor that might affect women's experiences and behaviour in plenary debate: the presence of female role models in high-powered positions in the legislature.

I argue that the appointment of a female cabinet minister may have both symbolic and behavioural consequences which affect other female MPs' willingness to participate in debate, and the influence they enjoy as a result of their participation. When women are appointed to high-office, this sends a signal to other female

134

legislators about the benefits to be gained from participating in policymaking, and may help to break down historically constructed stereotypes concerning the appropriateness of female political rule. Furthermore, female ministers' debating styles are likely to be more conducive to, and encouraging of, the participation of other female MPs in parliamentary debate. In the UK, cabinet ministers are highly visible actors in the policy process and play a central role in the parliamentary debates that relate to their ministries, speaking frequently to answer questions and to propose legislation for consideration. Consequently, I expect the appointment of a female minister to lead to higher levels of female participation and influence in debates that are presided over by the new minister.

Causally identifying such role-model effects is, however, empirically challenging. Ministries to which women are appointed are likely to differ in several ways from ministries presided over by men, and these differences may confound any simple cross-ministry estimates. In particular, the factors that drive the appointment of female ministers to certain ministries are almost certainly correlated with the probability that women participate in policy debates pertaining to those ministries. For example, women are more likely to be appointed to traditionally "feminine" cabinet posts (Escobar-Lemmon and Taylor-Robinson, 2008; Krook and O'Brien, 2012), and female legislators are also disproportionately likely to contribute to debates that deal with traditionally "feminine" policy areas (Taylor-Robinson and Heath, 2003; Bird, 2005; Catalano, 2009). If this is the case in the UK, then simple estimates of the relationship between cabinet minister gender and female debate participation will be upwardly biased.

The strategy here makes progress by examining the participation of female MPs in a framework which exploits *within-ministry* variation in the gender of the cabinet minister. By assigning each debate to a specific ministry, I compare

135

the level of female debate participation in a ministry before and after a switch in the gender of the minister, and compare this difference to changes in female participation in other ministries where the gender of the minister remains constant. This approach – which is equivalent to a 'difference-in-differences' design in a multi-period setting – allows me to rule out any omitted variable bias that could be attributed to any fixed tendencies of women to engage with the work of particular ministries and not others. Using this design-based framework to analyse over half a million Commons' speeches between 1997 and 2015, I demonstrate that when women are appointed to high-profile cabinet positions, other female MPs are more likely to contribute to legislative debates that pertain to the relevant female-occupied ministries. Appointing a female minister increases the *participation* of women MPs in relevant debates by between 11% and 64% over the level of female participation under male ministers.

These results are robust to a number of alternative specifications and provide strong evidence of a role-model effect, but in isolation they reveal relatively little about how these debate contributions are received by others in the House. If women speak more after the appointment of a female minister, but the issues that they raise are ignored by other parliamentarians, then the substantive importance of the role-model effect may be questioned. I address this issue by building on new techniques for identifying important speakers in political debate (Erkan and Radev, 2004; Fader et al., 2007), which I use to examine the *influence* of female MPs. I model the speeches of a parliamentary debate as a directed graphical network, and assess the relative *linguistic centrality* of members' speeches within a debate-graph in order to infer how influential each MP is in each debate. The strategy is based on the assumption that the more that an MP's language is adopted by other MPs in subsequent speeches, the more influential is the MP.

Using this measure I show that in addition to becoming more loquacious, women also become more influential in debate when their female colleagues are elevated to high-office.

The mechanisms that lie behind the role-model effect are likely to be many and varied. While the symbolic effects of the appointment of a female minister are in essence unobservable, I provide evidence consistent with the idea that female ministers behave systematically differently towards female MPs than do male ministers. Drawing on research in social linguistics which emphasises the importance of facilitative speech styles for encouraging speech from one's conversational partners (Hannah and Murachver, 1999, 2007; Thomson, Murachver and Green, 2001), I introduce a new quantitative measure of ministerial *responsiveness* which captures the degree to which ministers engage with the words used by backbenchers in their speeches. A minister is more responsive when the language they use to reply to a backbencher is more similar to the words that the backbencher uses. I use this measure to demonstrate that female ministers are substantially more responsive than their male counterparts to the speeches made by female MPs, but that there is no gendered difference in ministerial responses to the speeches made by male MPs.

Next, I discuss the importance of role models in the legislature. In section three, I outline the data, sample, and identification strategy, and in section four I analyse how the appointment of a female minister affects the participation of other female MPs. The fifth section introduces the strategy for measuring influence, and present results using this strategy. The sixth section considers the importance of ministerial responsiveness in accounting for the role-model effect, and the seventh section considers alternative explanations. A final section concludes.

Existing research provides evidence for a female role-model hypothesis outside of the legislative setting. For example, in countries with higher proportions of female representatives, women are more likely to discuss politics, and to participate in political activities such as demonstrating, petition signing, and joining political parties (Wolbrecht and Campbell, 2007). The election of female politicians has been shown to have substantively important effects on the educational attainment and career aspirations of adolescent girls (Beaman et al., 2012) and to increase the propensity for other women to stand for elections (Beaman et al., 2008; Gilardi, 2015).[1] Beyond political science, assignment to same-sex teachers can significantly improve educational achievement (Dee, 2007; Nixon and Robinson, 1999; Gilbert, 1985); influence the course choices of students later in their university life (Rask and Bailey, 2002; Bettinger and Long, 2005); and improve communication between students and teachers (Brajer and Gill, 2010). In addition, the appointment of women to corporate boards has been shown to increase the number of women occupying other leadership positions within business (Wang and Kelan, 2013; Bertrand et al., 2014). Overall, these studies provide evidence of positive role-model effects for women in diverse organisational settings. Why, then, might these role-model effects also translate to the legislative context?

Legislators face a budget constraint in terms of the time available to them when taking decisions about how to allocate their attention to different policymaking activities. For example, legislators might devote substantial time to drafting legislation, serving on committees, attending to constituency work, or speaking in debates in parliament. Rational legislators will therefore devote relatively more

---

[1]Though see Broockman (2014) for contrasting evidence.

time to those activities that bring them higher utility, and refrain from partici-pating in activities that have higher opportunity costs. In this section I discuss a number of impediments faced by female politicians deciding whether to spend time debating policy on the parliamentary floor, and suggest why the appoint-ment of a woman to a legislative leadership position may help to mitigate these impediments.

A key finding in the electoral literature is that women see themselves as less qualified to run for political office than men, even when they have comparable credentials and experience (Fox and Lawless, 2011). Similarly, holding constant objective levels of political knowledge, both women and men tend to view women as less informed about political matters (Mendez and Osborn, 2010). These pat-terns have been offered as explanations for the fact that women are less likely to run for political office than men (Fox and Lawless, 2004). In the legislative sphere, if women see themselves as less qualified for office than comparable men, women may also see themselves as less qualified for participating in certain aspects of the policy process. For example, there is evidence that women tend to stand for, and be elected to, predominantly "feminine" cabinet assignments and committee positions within legislatures (Escobar-Lemmon and Taylor-Robinson, 2008; Krook and O'Brien, 2012). Similarly, evidence from the House of Commons suggests that women contribute significantly more to policy debates that concern traditionally feminine issues, but less to debates associated with more masculine policy areas (Bird, 2005; Catalano, 2009). When both women and men view women as less suitable for contributing to legislation in certain policy areas, it is less likely that women will participate in the process that shapes such legislation.

In addition, parliamentary politics, and political debate in particular, may be especially subject to gender-imbalances. Theorists have suggested that the politi-

139

cal culture of parliament is contra-indicated to female influence in political discussion. These arguments propose that parliament has long been seen as a masculine institution, where female behavioural traits are considered less important and less effective than male ones. The implication of this 'gendered' nature of the practice of politics, is that women are subject to pressures that discourage them from participating in policymaking. Lovenduski (2005, 48), for example, argues that "the most difficult obstacle [for women] is the deeply embedded culture of masculinity that pervades political institutions." In the specific context of UK politics, the declamatory and adversarial style of Westminster debate (Childs, 2004) is seen as particularly antithetical to the participation and influence of women in the policy-process.

An interesting series of recent experimental papers demonstrate that the gender balance in a political discussion groups can have significant effects on women's experiences in debate. For example, as the proportion of women in a group decreases, women are likely to be interrupted more often by men (Mendelberg, Karpowitz and Oliphant, 2014); discussion will focus less on traditional "women's issues" (Mendelberg, Karpowitz and Goedert, 2014); and each individual women will speak less (Karpowitz, Mendelberg and Shaker, 2012). As Karpowitz et al. (2012, 534) summarise: "In mixed-gender discussions, women will speak less and be less influential than men. These disadvantages will increase as the group gender composition skews toward males." These studies also find that group composition interacts with the decision-making rule under which the groups operate. When groups operate under majority-rule (as opposed to unanimity), women experience less conducive speaking environments. This is particularly relevant when thinking about parliamentary settings, where women normally constitute a small proportion of discussants, and discussions almost always take place under majoritarian

140

decision rules.

Finally, participation in policymaking is costly, and politicians of both sexes will engage in the political process only to the degree that the costs of participation are outweighed by the benefits that they receive. However, evidence suggests that female politicians face a greater degree of uncertainty than their male counterparts over the benefits that accrue from participating in policymaking. For example, women are systematically under-represented in leadership positions (Davis, 1997; Heath, Schwindt-Bayer and Taylor-Robinson, 2005; Krook and O'Brien, 2012), and tend to be appointed to leadership roles in unfavourable circumstances (O'Brien, 2015). Even when women are appointed to cabinet positions, they tend to control low prestige portfolios (Studlar and Moncrief, 1999; Russell and De-Lancey, 2002), and, during scandals, women are more likely to receive adverse press coverage, and are more likely to stand down (Larcinese and Sircar, 2012). When the benefits of participating in the policy process are low or uncertain, rational politicians will refrain from engaging in the costly process of becoming policy experts, and will be less likely to engage in policymaking activities, including participating in legislative debate.

In appendix section C.1, I provide descriptive evidence that female politicians are indeed underrepresented in parliamentary debates in the House of Commons. In the period I study, women held approximately 23% of the seats in parliament, but uttered just 17% of the words in parliamentary debate. Even controlling for party, women speak on average 18% less than if speaking time were allocated proportionally according to male and female parliamentary seat shares. Although this evidence does not reveal the factors that cause such a gender-gap, the data suggest that in the UK case, in addition to being under-represented numerically in terms of the number of seats they hold in parliament, women are also significantly

under-represented in policy debates on the House floor.

Why would the appointment of women to positions of power encourage other female legislators to participate in plenary debate? I focus on two broad arguments. First, when female legislators are promoted to positions of high office, they may serve as examples of success to other women in the legislature. According to this view, female role models have *symbolic* effects, as their appointment sends important signals to other women that change the incentives for participating in debate. Second, although a narrow conception of role models would emphasise purely these symbolic effects, female leaders may also behave systematically differently than their male counterparts, and differences in their behaviour may change the incentives for other female legislators to participate in parliamentary debate. In this view, it is the *interaction* between female role models and other women in the group that affects the incentives for participation.

First, when women are promoted to positions of high-political office, this serves as an informative signal to other women regarding their suitability for, and the rewards to be gained from, participating in plenary discussions. For example, if female politicians do see themselves as under-qualified relative to male politicians, then observing the success of *one* woman in a policy area may send a signal that women *in general* are qualified to contribute to that domain. In social psychology, this argument is closely tied to how individuals perceive their own qualities in relation to those of others. As Lockwood (2006, 37) argues, when women see themselves as unsuited for certain activities, "the success of another woman…may have a positive impact on their self-perceptions." Female legislative role models that lead to such changes in self-perception may therefore encourage further participation of other women in plenary discussion.

In addition, the appointment of a woman may also reduce uncertainty regard-

142

ing the potential benefits of participation. The elevation of a female legislator indicates that the government is willing to promote women, and if government promotions are based, at least in part, on legislators' effort in policymaking activities, then the appointment of a woman to key ministries or committees demonstrates that such investments can lead to political rewards. In the literature on role models in education, Nixon and Robinson (1999, 186) suggest, "The amount by which the uncertainty is reduced will be a function of how closely the student can identify with her role model and how easily she can envision herself achieving what her role model has achieved." Cabinet ministers, committee chairs, and other positions of high office, are typically drawn from the existing pool of legislators, meaning that other members are likely to identify closely with the newly appointed figures. Female legislators will therefore update their beliefs about their qualifications for participating in the policy process, and the gains to be accrued from participation, when they observe other similar women being rewarded for making such investments.

Furthermore, female appointments may break down historically constructed stereotypes regarding the appropriateness of female leadership. The historical marginalisation of women in high-power roles may create entrenched perceptions that certain policy areas, and even politics in general, represent distinctly "male domains" (Sapiro, 1981, 712). Research in social psychology suggests that group-based stereotypes are often the source of negative evaluations of the capabilities of group members – something that is particularly apparent in the context of women's suitability for leadership roles (Eagly and Johnson, 1990; Eagly and Karau, 2002) – and that exposure to role models can help to undermine stereotypic beliefs (Dasgupta and Asgari, 2004). By breaking with historical patterns, the appointment of women to powerful cabinet positions may therefore reverse the

impression that women are unsuitable for participation in politics. As Mansbridge (1999, 628) suggests, descriptive representation of previously marginalised groups creates "a social meaning of 'ability to rule' for members of a group in historical contexts where that ability has been seriously questioned." The consequence of such a shift may further reinforce beliefs that women can play an active role in policymaking, and thus make them more likely to participate in plenary debates.

Taken together, these arguments suggest that the appointment of a female legislative leader might have important signalling effects which affect the incentives for other women in parliament to participate in debate. However, the symbolic *presence* of female role models, while important, is not necessarily the only mechanism through which a role-model effect in the legislature might operate. Agsari et al. (2010) find, for example, that the motivational effects of female role models in other settings are driven, at least in part, by the quantity and quality of *interactions* between role models and other women in a group. This suggests that the mechanisms underpinning role-model effects may also be due to the differential ways in which male and female leaders behave toward their fellow group members. Consequently, one potential source of a female role-model effect in legislative debates is in differences in the debating styles of male and female legislative leaders.

Evidence from previous research suggests that male and female leaders differ systematically in their leadership styles. For example, Eagly and Johnson (1990) find that women tend to be more democratic in their approach to leadership. In the legislative context, Kathlene (1994) finds that female committee chairs act more as moderators or facilitators, rather than directors, of committee discussions, speaking less and make fewer interruptions than their male counterparts. Similarly, Karpowitz et al. (2012, 534) suggest that female rhetorical styles are, in general, less aggressive, more inclusive, and more cooperative than male speech

144

patterns.

In the UK context, it is argued that female politicians in the House of Commons encourage a more cooperative, approachable, and practical form of politics than their male colleagues (Lovenduski and Norris, 1996; Bochel and Briggs, 2000). Female MPs also recognise this difference, with many suggesting that women in parliament tend to employ a distinct form of language and debating style (Childs, 2000). Cabinet ministers have institutionally privileged positions that almost always mean that they speak first in debates, and speak more often than backbench MPs (Rogers and Walters, 2006, 287-310). Therefore, it is possible that the appointment of a female cabinet minister will lead to a qualitative change in the interactions between ministers and backbenchers in debate. Consequently, cabinet ministers may not only set the content of the agenda (Laver and Shepsle, 1994), but may also guide the *tone* of parliamentary debate for other members. If female ministers provide a more conducive environment for female legislators, this may lead to a greater willingness on the part of other women to participate more fully in plenary debate.

Similarly, an extensive literature in social linguistics also provides evidence for differences in conversational style between women and men. In general, women are characterised by facilitative styles of speech, marked by high levels of politeness and responsiveness, while male speech is seen as less facilitative (Hannah and Murachver, 1999, 2007; Thomson, Murachver and Green, 2001; Holmes, 2013). These styles are strongly predictive of the speaking time of conversational partners. As Thomson et al. (2001, 171) suggest, "because women are more likely than men to function as facilitators in conversation, they are more likely to elicit speech from their partners." An important component of these styles is the degree to which an individuals' contributions to discussion are responded to and

145

acknowledged by other participants (Hannah and Murachver, 2007). Legislatures are often marked by highly gendered conversational dynamics in which male contributions to policymaking are "heard" more than female contributions (Kathlene, 1994; Hawkesworth, 2003). Accordingly, one potential locus of a role-model effect is in the differential *responsiveness* of male and female high-office-holders. If female cabinet ministers provide higher quality responses to the speeches of female legislators than do their male counterparts, the status of women in legislative debate is likely to increase when a woman is appointed. Such an increase in status is likely to be concomitant with increases in the degree of influence that women enjoy, and thus their willingness to participate in plenary debate.

In summary, female legislators face diverse impediments when considering the decision to participate in plenary debate, and the appointment of women to high political office may serve to mitigate some of these impediments. Female legislative leaders represent important symbols for other women – signalling that women are qualified for participating across a range of issue areas, and that there are significant gains to be made from engaging with the policymaking process. Furthermore, differences in the legislative behaviour of male and female high-office holders may also affect the participation decisions of female legislators. In the context of the House of Commons, cabinet ministers are highly visible actors who play a central role in parliamentary debate, making them good candidates to be role models for other women in parliament. Accordingly, the central implication that I test in the next section is that when a female MP is appointed to lead a ministry previously held by a man, other female MPs will be more likely to *participate* in debates that pertain to that ministry than they would have been previously.

In addition, participation and influence in parliamentary debate are closely related concepts (Kathlene, 1994, 573), and empirical research suggests that inequal-

146

ities in participation between men and women are also associated with gender-based inequalities in influence (Karpowitz, Mendelberg and Shaker, 2012). Accordingly, in the subsequent section I go beyond analysing participation and evaluate the hypothesis that the appointment of a female minister will also be associated with an increase in the level of *influence* that female MPs experience in plenary debate.

DATA, SAMPLE, AND METHODOLOGY

I study all House of Commons floor debates between May 1997 and May 2015. I collected this information from `theyworkforyou.com`, a public website that catalogues all speeches made by UK MPs. The full sample contains 17,749 debates, comprising just over a million individual speeches. In this section, I am interested in comparing the volume of speeches delivered by women in debates pertaining to ministry $m$ at time $t$ when the minister for ministry $m$ is female to the counterfactual in which the minister is male.

The key independent variable is the gender of the minister responsible for a ministry at a given point in time. The dummy variable, $FemaleMinister_{mt}$, is equal to one when the minister responsible for a given ministry $m$ in time $t$ is a woman, and zero otherwise.

$$FemaleMinister_{mt} = \begin{cases} 1, & \text{if } Minister_{mt} \text{ is female} \\ 0, & \text{otherwise} \end{cases} \qquad (4.1)$$

Figure 4.1 shows the variation in this variable over time for all 23 ministries included in the sample. Ministries are sorted by the proportion of the time period that the ministry is occupied by a female minister. Orange bars pertain to periods

147

**Figure 4.1:** Gender of ministers over time
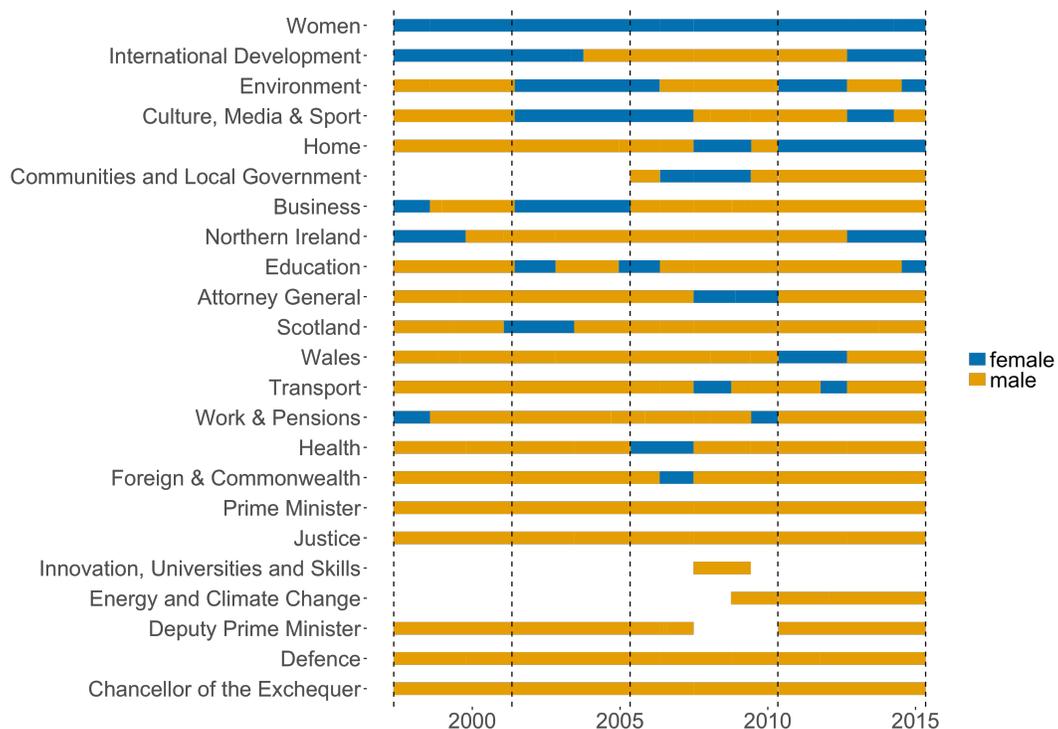


NOTE: The figure shows the distribution of the independent variable over time. While some ministries are never held by a woman (those all in orange), and the Women's ministry is always presided over by a woman (all in blue), the gender of the minister in several ministries varies over time.

148

in which the minister responsible is male, and blue bars represent female ministers. The only ministry that is always held by a woman is the Women's ministry. There are several ministries for which the responsible minister is never a woman, including the Justice ministry, the Defence ministry, as well as the positions of Prime Minister and Chancellor of the Exchequer. While I include all 23 ministries in the empirical analysis, identification of the role-model effect relies only on those ministries which see a change in the gender of the cabinet minister over time.

The empirical analysis requires that each debate is mapped to an individual ministry. As the total number of debates is large, manual categorisation is not feasible. In order to assign debates to ministries, I note whether a current cabinet minister speaks in a given debate, and assign the debate to the ministry for which that cabinet minister is responsible. In the cases where more than one cabinet minister speaks, I assign the debate to the ministry of the most frequently appearing cabinet minister in the debate. As cabinet ministers speak regularly in the debates for which they are responsible (to propose legislation and field questions from other members), this serves as an efficient way of categorising the debates. As some debates do not contain speeches from any cabinet ministers,[2] the final sample for analysis contains 5573 debates consisting of approximately 650,000 speeches.

The outcome variable is the proportion of words spoken by female legislators in debate $d$ pertaining to ministry $m$ in month $t$, which is calculated by dividing the number of words spoken by women in a debate by the total number of words

---

[2]These are mostly procedural debates, and debates held on days where the opposition party controls the agenda (Rogers and Walters, 2006, 287-310)

spoken by all legislators.

$$PropWordsWomen_{dmt} \; = \; \frac{\text{\# words spoken by women}_{dmt}}{\text{\# words spoken by men and women}_{dmt}} \quad (4.2)$$

When calculating this proportion, I exclude the speeches made by the ministers themselves, ensuring that the figures are not artificially inflated by female ministers speaking more after they are appointed. I also remove speeches made by the Speaker of the House of Commons, which are almost exclusively procedural.[3]

Simple comparisons of the difference in the proportion of words spoken by women between debates held under male and female ministers are likely to result in biased estimates of the effect of minister gender. Systematic differences between ministries almost certainly affect the degree to which female legislators choose to participate in legislative debate. For example, previous research shows that women are significantly more likely to participate in legislative debates that relate to areas of traditional concern to women, including health care, social provision, and children and family issues (Little, Dunn and Deen, 2001; Catalano, 2009; Pearson and Dancey, 2011). Figure C.2 in the appendix suggests that unobserved ministry characteristics such as these are clearly influential in the data here. Women speak significantly more in ministries such as 'Women', 'Communities and Local Government', and 'Health', and significantly less in debates per-

---

[3]In the appendix, I consider an alternative dependent variable: the *ratio* of words spoken by women. This measure is simply the proportion of words divided by the proportion of parliamentary seats held by women in month $m$. I also re-ran the analysis using dependent variables that measure the proportion and ratio of *speeches*, rather than words. In general, the word-based measures are preferred to the speech-based measures, as they account not only for the frequency of debate contribution, but also the length of legislators' contributions to debate. However, as the results in the appendix demonstrate, the choice between these various measures is inconsequential to the substantive and statistical conclusions. All definitions of these variables, and summaries of the statistical results can be found in section C.2 of the appendix. Results are also statistically and substantively very similar if speeches by the Speaker are kept in the data.

taining to the 'Defence', 'Foreign and Commonwealth', and 'Justice' ministries. If female ministers are disproportionately appointed to ministries in which the rate of female participation is already high, then naive comparisons between debates presided over by female and male ministers are likely to be upwardly biased.

In order to overcome these problems, and to estimate the causal effect of the appointment of a female minister of female debate participation, I estimate fixed-effects regressions of the following form:

$$PropWordsWomen_{dmt} = \beta_1 * FemaleMinister_{mt} + \lambda_m + \delta_t + \epsilon_{dmt} \quad (4.3)$$

where $PropWordsWomen_{dmt}$ is defined in equation 4.2, $\lambda_m$ is a ministry fixed-effect that washes out any omitted variable bias from unobserved ministry characteristics that are fixed over time (such as the degree to which a ministry deals with policy that is traditionally of greater concern to women), $\delta_t$ is a year-month fixed-effect to control for common shocks across ministries in a given month, and $\epsilon_{dmt}$ is an idiosyncratic error term. $\beta_1$ is the coefficient of interest, and captures the (reduced-form) causal effect of the appointment of a female minister on the participation of women in House of Commons debates for those ministries that experienced a change in minister gender over time.

This fixed-effect design is equivalent to a multi-period 'difference-in-differences' in the style of Angrist and Pischke (2009, 234). $\beta_1$ identifies the effect of switching from a male to female minister based on the within-ministry variation of the outcome variable among those ministries that see changes in the gender of the minister over time. By accounting for fixed characteristics of ministries that might predict both female debate participation and the appointment of a female minister, the model compares changes in female debate participation in ministries that expe-

rience a switch in minister gender to ministries where the gender of the minister remains constant, while differencing out the general trends across ministries in a given month.

Identification of the causal effect relies on changes in minister gender being exogenous to the level of female debate participation, conditional on time and ministry fixed-effects. Accordingly, the key identifying assumption of the analysis is that treated ministries would have followed the same trend as non-treated ministries in the absence of treatment. I relax this 'common trends' assumption by estimating further models which include ministry-specific linear ($\lambda_{m1}$) and quadratic ($\lambda_{m2}$) time trends:

$$
\begin{aligned}
PropWordsWomen_{dmt} &= \beta_1 * FemaleMinister_{mt} + \lambda_{m0} + \delta_t \\
&\quad + \lambda_{m1}t + \lambda_{m2}t^2 + \epsilon_{dmt}
\end{aligned} \tag{4.4}
$$

where $t$ is a time variable. Furthermore, in contrast to the typical multi-period 'difference-in-difference' model, in this setting the treatment (the presence of a female minister) switches on and off over time. That is, once appointed, a female minister might also leave office, and ministries often see multiple female ministers (appointed at different times) over the study period. Accordingly, in order to account for the possibility that differential *local* trends within ministries might confound the causal effect, I also estimate generalised additive models (GAM) which include non-parametric ministry-specific time trends:

$$
\begin{aligned}
PropWordsWomen_{dmt} &= \beta_1 * FemaleMinister_{mt} + \lambda_{m0} + \delta_t \\
&\quad + \lambda_{m1}f(t) + \epsilon_{dmt}
\end{aligned} \tag{4.5}
$$

The models that include these various ministry-specific time trends represent extremely conservative specifications, as the addition of these trends means that all unobserved and smoothly varying confounding differences are removed from the estimate of $\beta_1$, meaning that only sharp changes to the trend in the outcome variable that occur at the same time as the change in minister gender contribute to this estimate. As none of the substantive or statistical results change noticeably when this crucial identifying assumption is relaxed, this lends significant support to the empirical design I employ. In addition, I provide further evidence for the validity of the identification assumption by estimating a dynamic panel model, which estimates the treatment effect in the time periods before and after the actual change in minister gender. This model allows me to test the whether the treated and non-treated ministries experienced systematically different levels of female debate participation in the period leading up to the treatment. The results from the dynamic model suggest that this is not the case, and thus reduce concerns that the effect I observe is a feature of some factor other than the appointment of a female minister. Finally, as there are only 23 ministries in the data, I follow standard practice in the literature and construct bootstrapped clustered standard errors at the ministry level for all models (Angrist and Pischke, 2009; Cameron and Miller, 2015).[4]

---

[4]Specifically, I bootstrap the regression model 1000 times, resampling ministries from the full data with replacement, and estimating equations 4.3 and 4.4 at each iteration. Because the GAM model is computationally very burdensome, I do not bootstrap this model, and the standard errors may therefore underestimate the uncertainty in the data. Nevertheless, the GAM model provides point estimates which are almost identical to the other models.

Before turning to the main results, I present two simple graphical analyses. First, figure 4.2 shows the evolution of the dependent variable over time in the ministries that experienced a change in the gender of the minister. The y-axis in the figure gives the proportion of words spoken by female MPs in each debate (scaled from 0 to 1), and the x-axis gives the date of the debate. Blue line segments represent periods in which the presiding minister is female, and orange segments represent male ministers.

The plot provides clear evidence of a role-model effect whilst also revealing heterogeneity across ministries. In many cases, the appointment of a female minister is accompanied by an increase in the proportion of words spoken by other female MPs. The effect appears to be particularly pronounced in the 'Business', 'Home', 'Local Government', and 'International Development' ministries. By contrast, there is less evidence of an effect in other ministries, though in no cases does the appointment of a female minister appear to lead to a *decrease* in the proportion of words spoken by other female MPs. This figure therefore provides initial evidence of the hypothesised role-model effect.[5]

Second, figure 4.3 presents results which are akin to a regression-discontinuity design. This analysis aims to isolate the effect of a change in the gender of a minister on the dependent variable defined in equation 4.2. In a standard difference-in-difference analysis, the treatment usually occurs at a fixed point in time and affects treated units but leaves untreated units unaffected. The multi-

---

[5]In the regression analyses below, which also control for general trends in female participation over time (i.e. across ministries), I average over this underlying heterogeneity. Although not my primary concern here, future work could address the factors that contribute to the variation in the role-model effect across different ministries.

**Figure 4.2:** Proportion of words spoken by women in treated ministries, over time
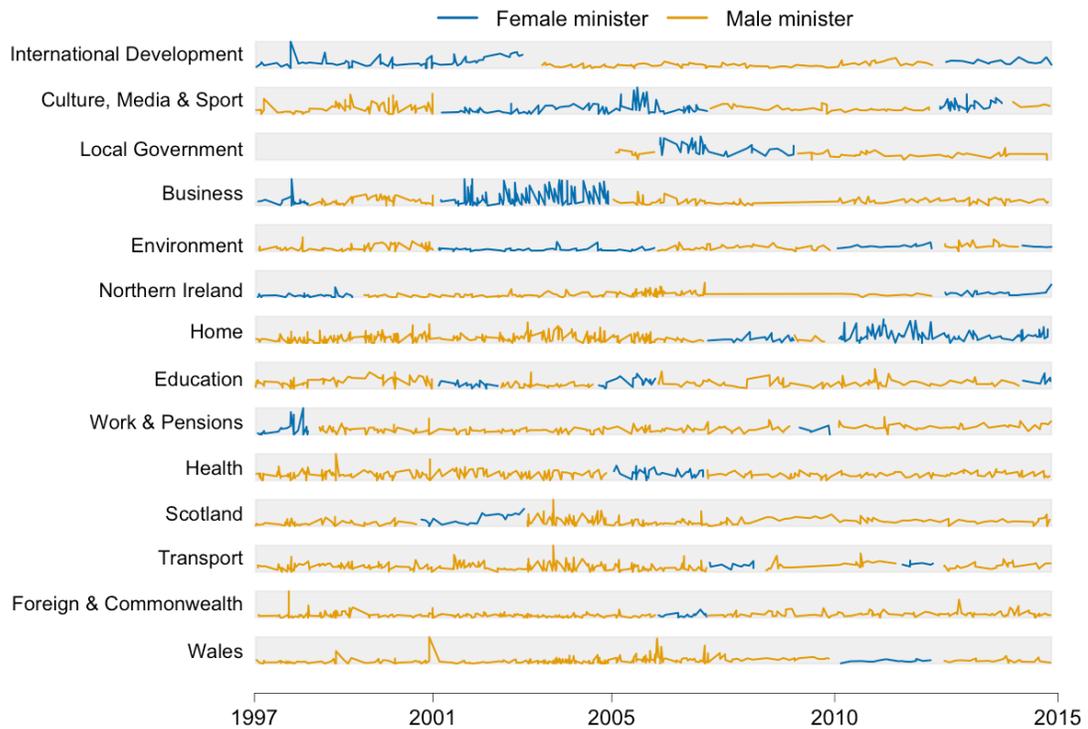


NOTE: The plot shows the proportion of words spoken by women in each debate, in each ministry that experienced a change in the gender of the presiding minister. The y-axis is the proportion of words spoken by women in a debate (scaled from 0 to 1), and the x-axis is the date of the debate. Blue segments represent periods when the minister in charge of a given ministry is female, and orange segments represent periods when the minister is male.

155

period model is somewhat different, as the treatment switches on at different points in time for different ministries (as shown by figure 4.1). The plot presented in figure 4.3 compares the average proportion of words spoken by female MPs in debates for ministries that appoint a female minister over time to the ministries that never appoint a female minister. I define a variable which measures the number of months before and after a change between male and female ministers. This variable is equal to zero in the month that a change occurs. Using this re-centred variable, I then calculate the averages for both treated and untreated ministries, and then plot them over time along side separate local linear regression curves for the treated and control ministries.

**Figure 4.3:** The effect of female ministers on the participation of female MPs in debates
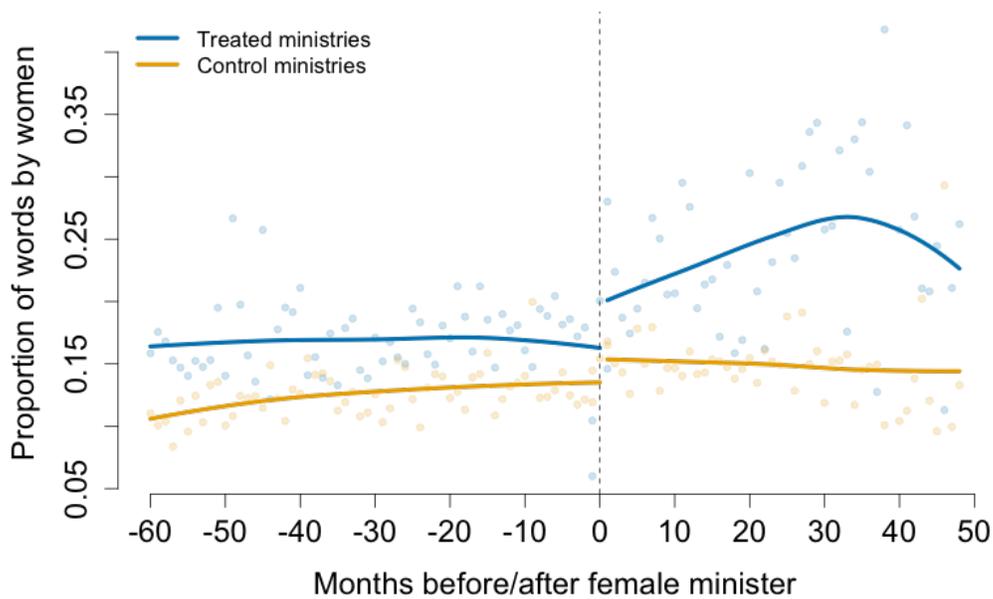


NOTE: The figure shows the average proportion of words spoken by women in treated (blue) and control (orange) ministries in each month leading up to and following a change in the sex of a minister.

The figure makes clear that while the treated and untreated ministries follow

very similar trajectories before a female minister is appointed, there is a sharp (positive) discontinuity when a female minister is appointed in the treated ministries, but a considerably smaller discontinuity for the ministries that do not appoint a female minister. Furthermore, while the proportion of words spoken by women in the treated ministries grows significantly after the treatment, the trajectory for the untreated ministries remains essentially flat over time. Overall these graphical analyses provide initial support for the main hypothesis, and give relatively clear evidence that the rate of female participation in House of Commons debates increases markedly when the minister responsible for a particular ministry changes from male to female.

Table 4.1 presents the results of the regression analyses. Model 1 presents the naive estimate of the effect of a female minister, without controlling for ministry or year-month fixed-effects. Models 2 and 3 introduce these fixed-effects separately, and model 4 presents the results of the 'difference-in-differences' model which includes both ministry and time fixed-effects. The coefficient of the main variable of interest, $FemaleMinister$, is positive and significant in all four of these models, but it decreases noticeably when accounting for ministry. This suggests that female ministers are indeed appointed to lead ministries where the level of debate participation of other female MPs is already high. Nevertheless, the effect remains significant in the specification in model 4, implying that the appointment of a female minister leads to an increase in the degree of debate participation of other female MPs in the House of Commons. The size of the effect is also substantial. Based on model 4, the appointment of a female minister increases the proportion of words used by women by over 5 percentage points of total words. This corresponds to an increase of approximately 35% over the average speech rate of women in

157

debates under male ministers, with a 95% confidence interval of 8% to 61%.[6]

The main effect is also robust to a number of alternative specifications. Models 5 and 6 introduce linear and quadratic ministry-specific time trends, and model 7 presents the results of the GAM regression, which includes non-parametric ministry-specific time trends. As stated above, the inclusion of these trends relax the crucial identifying assumption that treated and non-treated ministries would have followed parallel trends in the absence of treatment. The table shows that the effects are highly robust, regardless of these alternative specifications, and the effect size is consistent: based on the estimates in model 6, the appointment of a female minister increases the proportion of words spoken by other female MPs by between 11% and 64%. That the inclusion of ministry-specific time trends changes the estimates so little is encouraging, as it rules out the possibility that the documented effect is driven by either global or local trends in unobserved confounding variables.

As a final robustness check, figure 4.4 plots the coefficients estimates from the dynamic panel ('leads and lags') model. Here I code a binary indicator for the first 6 months of the treatment period in a given ministry, and then add four leads and two lags of this indicator in addition to the full set of fixed-effects and linear and quadratic time-trends. In line with other approaches (Autor, 2003), the final lagged variable captures all treated periods from twelve months until the end of the treatment period for a given ministry. The coefficients therefore represent the estimated difference in the outcome between treated and untreated ministries in the periods before and after the treatment occurs.

The results strongly support the identifying assumption, as I find no significant 'placebo' effects in the two years prior to the change in minister gender.

---

[6]The results are almost identical when considering the ratio measure (table C.1).

**Table 4.1:** Effect of appointing a female minister on female debate participation

| | | | | *PropWordsWomen* | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Female minister | 0.087*** | 0.089*** | 0.056*** | 0.055** | 0.048** | 0.059*** | 0.043*** |
| | (0.025) | (0.026) | (0.018) | (0.021) | (0.021) | (0.021) | (0.010) |
| Constant | 0.158*** | 0.134*** | 0.163*** | 0.117*** | 0.036 | −0.125 | 0.212** |
| | (0.010) | (0.025) | (0.024) | (0.034) | (0.120) | (0.251) | (0.100) |
| Month FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Ministry FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Effect Size % | 55 | 56 | 36 | 35 | 30 | 38 | 27 |
| 95% CI | [25,86] | [24,89] | [14,57] | [8,61] | [5,56] | [11,64] | [14,40] |
| Observations | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 |
| $R^2$ | 0.047 | 0.100 | 0.139 | 0.191 | 0.210 | 0.224 | 0.233 |
| Adjusted $R^2$ | 0.047 | 0.068 | 0.135 | 0.159 | 0.175 | 0.186 | |

NOTE: Models 1-6 represent OLS fixed-effect regressions for the period 1997-2015. Regression coefficients are shown with bootstrapped cluster-robust standard errors (clustered by ministry) shown in parentheses. The outcome variable is *PropWomenWords* as defined in equation 4.2, and the independent variable is "Female minister" as defined in equation 4.1. The baseline corresponds to debates held under a male cabinet minister. Model 4 corresponds to equation 4.3, and models 5 and 6 include linear and quadratic ministry-specific time trends in addition to ministry fixed-effects and month fixed-effects (as per equation 4.4). Model 7 is a GAM model including non-parametric, ministry-specific, flexible time trends (equation 4.5). The "Effect Size" row indicates the percentage increase in female participation relative to the average female participation rate under male ministers. *p<0.1; **p<0.05; ***p<0.01

**Figure 4.4:** Dynamic panel model estimates
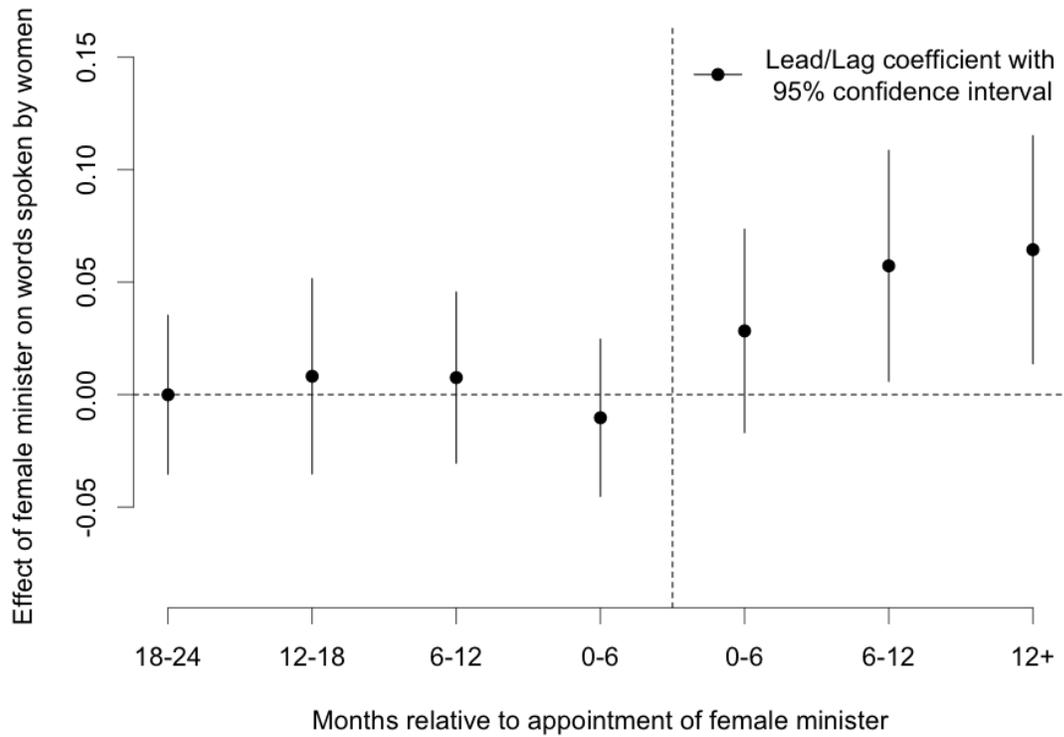


NOTE: The plot presents estimates of switching from a male to a female minister before and after the actual change occurred. The vertical dashed line indicates the timing of the change, and the points indicate (at six month intervals) the difference between treated and untreated ministries at the given time point. Estimates are generated from a dynamic panel regression including ministry and time fixed-effects, ministry-specific linear and quadratic time trends, and indicator variables for four leads and three lags of the change in minister gender. Confidence intervals are constructed by bootstrapping the regression model, blocking on ministry.

This strengthens the plausibility of the design, as it suggests that there are no unobserved variables leading to differential trends in the outcome between the treatment and control ministries prior to the appointment of a female minister. Furthermore, there is a large difference between the treatment and control ministries once a female minister is appointed, and the effect is significantly different from zero after the first six months. That the coefficient on the first post-treatment period is positive but not significant might be attributed to the conservative coding of the treatment period – I measure the gender of a cabinet minister on the 1st day of each month, and therefore it is possible that some debates which occur early in the month in which a female minister is appointed are coded as treated whilst in reality these debates are still presided over by a male cabinet minister. This coding would cause a downward bias in the estimate, and might explain the insignificant coefficient on the first post-treatment indicator here.

Overall, the results presented in the graphical analyses, the main specification, and in robustness checks, provide strong support for a female role-model hypothesis: when a female minister is appointed, other women speak approximately one third more in debates pertaining to that ministry than when the responsible minister is male.

Female ministers and influence

The findings in the previous section indicate that female backbenchers are more likely to participate in the policymaking process when the responsible minister is a woman. However, changes in relative levels of participation tells us little about how these debate contributions are received by others in the House. While partic-

ipation and influence are likely to be linked,[7] if women are speaking at increasing rates, but the issues and concerns that they raise are largely ignored by other parliamentarians, then the substantive importance of the documented role-model effect may be limited. In this section, I use the texts of the parliamentary speeches to provide evidence that female backbenchers do not only speak more after the appointment of a female minister, but also that they play a more influential role in political debate than under male ministers.

Which features of text might identify 'influential' speakers? Rather than directly analysing the content of each speech in an attempt to infer influence in isolation, I instead study the links *between* speeches in order to assess the influence of any particular speech in a debate. I consider an MP to be influential when the issues and concerns she raises in her speeches are adopted and discussed by other members in subsequent speeches. Having other people pick up on your framing of an issue is a way of controlling how the debate proceeds: it means other people are taking up your perspective, whether or not they agree with it. Influential MPs are therefore literally 'shaping the debate'. The intuition behind the measurement strategy is to identify distinctive language that first appears in the statement of one MP, but then gets used subseqeuntly by later MPs.[8]

To proceed, I apply a method developed in machine learning for detecting influence in text corpora. The method treats a corpus of texts as a graphical network, where influential documents are identified by their lexical centrality in the network

---

[7]"The same conditions that create disproportionate *silence* by women also create disproportionate *authority* for men." (Karpowitz, Mendelberg and Shaker, 2012, 542, emphasis added)

[8]Recent experimental research in political science (Karpowitz, Mendelberg and Shaker, 2012) measures the *perceived* influence of discussion participants by asking participants to indicate the most influential discussants in a preceding debate. Such an approach is clearly not possible here. Rather, the strategy outlined below attempts to *infer* speaker influence by modelling the diffusion of distinctive language throughout a debate.

(Erkan and Radev, 2004; Mihalcea and Tarau, 2004). Debates can be viewed as clusters of documents that are related to each other in the language that they use. Some speeches within a debate will share similar language, while others will share less information with one another. The crucial intuition behind the model employed here is that those speeches that are similar to many other speeches within the same debate are more central to the topic, and speakers of central speeches are more influential in a legislative debate.

I assess the influence of a speech, $i$, by calculating how many 'references' $i$ receives from other speeches within the debate.[9] One speech, $j$, can be understood to 'reference' another, $i$, when it occurs after $i$ in the debate and when it comprises language which is sufficiently similar to that used by $i$. By using similar language to $i$, $j$ is implicitly indicating that $i$ is relevant and important for the discussion at hand. Of course, there are myriad reasons why one speech may use similar language to another (direct quotation; expression of criticism; statement of support; coincidence). However, the goal here is not to assess the substantive meaning of each link. Rather, we assume that a speech that is linked to (shares language with) many other speeches is being *collectively referenced* and thus can be considered an important and influential speech within the debate. A simple way of assessing influence would therefore be to simply count the number of references each speech receives. That is, to count up how many speeches are similar (given an appropriate minimum similarity threshold) to the speech we are interested in. Here, I take a more nuanced approach which considers not only the number of

---

[9]The use of the term 'reference' here does not imply that one member is literally referring to the speech of another member (as would be the case, for instance, in the phrase "the honourable member makes an important point in her speech"), nor does it imply that the member is directly quoting another member's speech. Rather, I use the term as a heuristic for describing the tendency for the vocabulary used in the speech of one member to be subsequently used in the speeches of other members.

references a given speech receives, but also incorporates information about the influence of the referencing speeches. Thus, the more references $i$ receives, and the higher the influence of the referencing speeches, the higher is the influence $i$ within the debate.

I draw on the work in Fader et al. (2007) which describes a model for identifying salient participants in political discussion. This method aims to measure the influence of speeches in a debate by analysing the debate as a network in which speeches are nodes and the similarity between the speeches are edges. The method proceeds in two steps: first, I construct similarity graphs for all speeches in each debate; second, I analyse the graphs using an iterative ranking algorithm to calculate a vector of centrality scores, $P$, which correspond to the influence of each speech in each debate.

Construction of a debate-specific similarity graph, $S_d$, begins with the selection of a metric which measures how linguistically similar two speeches are to one another. I follow Fader et al. (2007) and Erkan and Radev (2004) and use term-frequency-inverse-document-frequency (tf-idf) cosine-similarity. I use a 'bag-of-words' model to represent each speech as an $N$-dimensional vector, where $N$ is the number of unique words in the entire corpus. Each element in the vector is a count of the number of times a given word, $w$, appears in a given speech, $s$, multiplied by the logged *inverse document frequency* of that word, to create a weighted term-frequency score, $v_{ws}$, for each word in each speech. Where $N$ is the total number of unique words in the corpus, and $n_w$ is the number times that word $w$ appears in the corpus, and $tf_{ws}$ is the number times that word $w$ appears in speech $s$, the score for $w$ in $s$ is given by:

$$v_{ws} = tf_{ws} * log(\frac{N}{n_w}) \tag{4.6}$$

164

A high value of $v_{ws}$ occurs when a word is used frequently in a given speech, but infrequently in the corpus as a whole. The weights thus filter out very common words such as 'stopwords', and ensure that the vector representation of the speeches mostly reflects topically-salient features of the political debate.

Having calculated the tf-idf vectors for each speech in the corpus, I construct $D$ similarity matrices (one for each debate), the typical element of which is: $S_d(i,j) = sim(v_i, v_j)$, the cosine-similarity of the weighted word-count vectors of speeches $i$ and $j$ in debate $d$. Each graph (again, one for each debate) therefore consists of nodes that represent speeches in a debate, and edges which are placed between speeches for which $sim(v_i, v_j)$ is greater than some threshold value, $S_{min}$.[10] The edges are then weighted by the similarity scores.

The method presented here differs from the original formulation in Fader et al. (2007) and Erkan and Radev (2004) in that I construct *directed* rather than *undirected* graphs for analysis. Because the cosine-similarity relation is symmetric (i.e. because $S_d(i,j) = S_d(j,i)$), previous work has only considered undirected networks where edges between nodes run in both directions and receive the same weight. However, as I conceptualise influence as the degree to which language used in one speech is adopted in subsequent speeches, it is necessary to take the temporal ordering of debate into account when constructing the graphical network. Put simply, it does not make sense for speeches that occur later in the debate to 'influence' speeches that occur earlier in the debate. To address this issue, I focus on only the upper triangle of the similarity matrices, $S_d$, while setting all elements in the lower triangle to zero. The consequence of this is that 'references' from one speech to another can only flow in one direction: later speeches can

---

[10]Throughout the analysis I set $S_{min}$ to 0.1, in line with Erkan and Radev (2004).

reference earlier ones, but not vice versa.[11] While this is an important theoretical distinction between my approach and previous work, using a directed graph makes no difference to the computation of the influence scores.

As described above, the influence of a speech is determined by the number of references it receives from other speeches within a debate (i.e. by the number of speeches which are linguistically similar to it), and by the influence of the referencing speeches. In the simplified case where all edges receive a weight of 1, an intuitive way of formulating this idea is to imagine that each speech has an influence value, and that this value gets distributed to the speeches that it references:

$$p(i) = \sum_{j \in adj(i)} \frac{p(j)}{deg(j)} \qquad (4.7)$$

Where $p(i)$ is the influence of speech $i$, $adj(i)$ is the set of speeches that have edges with $i$, and $deg(j)$ is the degree of node $j$ (the degree of a node is simply the number of edges that connects the node to other nodes). This formulation emphasises that a speech is more influential when it is referenced by many other speeches ($adj(i)$), when the influence of the referencing speeches ($p(j)$) increases, and when the referencing speeches reference relatively few other speeches ($deg(j)$). Weighting the edges of the network by $S_d(i,j)$ allows references to vary in strength (according to the similarity between speeches $i$ and $j$) and we can reformulate

---

[11]An implication of this choice is that a speaker is more likely to be influential when he or she speaks earlier in the debate. As discussed below, and as I demonstrate in figure C.3 in the appendix, although the influence scores correlate with debate position, they clearly measure distinct concepts. Nevertheless, it is of course possible that influential speeches may be made in the closing stages of a debate, and this would clearly not be captured by my measure. An alternative approach would be to allow references to run in both directions (i.e. by using an undirected graph). However, I opt for the former approach, as an undirected graph would run the risk of counting as influential those MPs who simply *summarise* preceding speeches.

equation 4.7 to include the weights in $S_d$ via:

$$p(i) = \sum_{j \in adj(i)} \frac{S_d(i,j)}{\sum_{k \in adj(j)} S_d(k,j)} p(j) \tag{4.8}$$

Equation 4.8 makes clear that the reference that speech $i$ receives from speech $j$ is determined by the linguistic similarity between $i$ and $j$ (the numerator), and the similarity between $j$ and all of the speeches that $j$ references (the denominator). Fader et al. (2007) and Erkan and Radev (2004) show that computation of the vector of influence scores, $P$, is achieved by calculating the left eigenvector of the row-normalised similarity matrix $S_d$ via the *PageRank* algorithm, which was originally designed for computing webpage prestige in the Google search engine (Page et al., 1999). I implement the algorithm using the iGraph package in $R$ (Csardi and Nepusz, 2006).

Figure 4.5 provides two plots to highlight the intuition behind the measurement procedure. The left-hand plot depicts the similarity matrix, $S_d$, for an example debate with 14 separate speeches. Speakers are sorted according to the order in which they participated in the debate, such that Taylor is the first speaker and Boothroyd is the last speaker. As explained above, I only allow one speech to reference another when it occurs later in the debate than the speech it is referencing. Accordingly, the bottom triangle of the matrix is empty. I also exclude the possibility that a speaker can reference herself (as indicated by the grey shaded boxes in the figure). The orange-shaded squares indicate the cosine similarity between two speeches, and are scaled such that when the similarity between a pair of speeches is 1 (i.e. when the speeches are identical in terms of the weighted word vectors) the orange square will fill the dashed box that contains it. Several elements of the upper triangle are empty, and these cases correspond to the speech pairs where

167

**Figure 4.5:** Schematic example of 'influence' in a debate
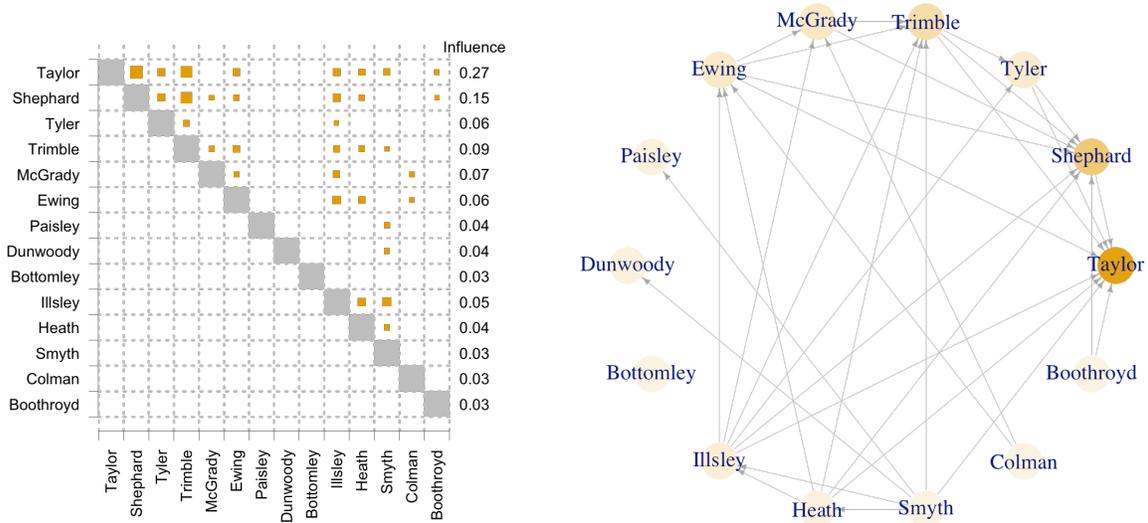


NOTE: The left panel shows the 'reference' patterns for an example debate. Speakers are sorted according to the order in which they speak in debate (such that Taylor was the first speaker in this debate, and Boothroyd the final speaker). The orange-shaded squares indicate the similarity between two speeches and are scaled such that when two speeches are identical, the orange square will fill the dashed box that contains it. Larger orange squares therefore indicate a greater linguistic similarity between two speeches, and thus a stronger 'reference' from one speech to another. The right panel depicts the similarity matrix as a network graph. An edge exists between two speeches when the similarity between the two speeches is greater than the threshold $S_{min}$. The nodes are shaded so that more influential speakers are darker.

the similarity between the speeches is lower than $S_{min}$. The left panel shows, for example, that Taylor's speech is referenced by many subsequent speeches, while Tyler's speech is referenced only by Trimble and Illsley. The right margin of the plot gives the vector of influence scores for this debate as calculated from the *PageRank* procedure. In this debate, Taylor's speech has an influence score of 0.27 and Tyler's speech has an influence score of just 0.06. The right-hand panel depicts the same similarity matrix as a directed network graph, with speeches as nodes and edges as the 'references' flowing from one speech to another. Consistent

with the left-hand panel, Taylor's speech is referenced by many other members, while other speakers receive very few references. Bottomley, Smyth, Colman and Boothroyd, for instance, make speeches which are not sufficiently similar to any subsequent speeches and therefore these speakers receive no references.

A potential objection is that the measure here may be driven by other features of parliamentary speech. Crucially, we may be concerned that influence is proxying for speech *length*. If this is the case, then finding that the appointment of a female minister increases the influence of other female MPs would be unsurprising, as the previous section has already demonstrated that women are using relatively more words in debate after such an appointment. Additionally, because references only flow from later speeches to earlier ones, there may be a relationship between influence and the *position* that a speech occurs in a debate. In the example in figure 4.5, there appears to be a correlation between speech position and influence, with earlier speeches being more influential than later ones. In figure C.3 in the appendix I investigate the relationship between influence and both speech length and debate position across all debates in the sample. As the figures show, there is a very weak relationship between length and influence (the average correlation across all debates is 0.09), and although there is a stronger negative association between influence and debate position, the influence measure is clearly picking up information above and beyond simple debate ordering (the average correlation is $-0.49$).

Validation is essential for text-based measures of political concepts (Grimmer and Stewart, 2013), and the influence measure proposed here has been subjected to validity checks in previous work.[12] I test two relatively unambiguous intu-

---

[12]Fader et al. (2007) show that the influence scores calculated for speeches made in the US Senate correlate strongly with membership and seniority in Senate legislative committees.

169

itions about which actors in the House of Commons we expect to be influential in parliamentary debate. First, government ministers should be on average *more* influential than other MPs when participating in plenary debate. Ministers play a crucial role in setting the agenda for parliamentary business, and their speeches are frequently used to outline policy that we would expect others to comment on extensively. Second, the Speaker of the House should be on average *less* influential than other members. The majority of the Speaker's contributions are procedural, and have little to do with the substantive matters under discussion. Therefore, the language the Speaker uses should not be adopted frequently by other members. I test these expectations by regressing the influence score on binary indicators for whether the MP delivering the speech was either the cabinet minister responsible for the current debate, or the Speaker. The results, presented in table C.4 in the appendix, strongly support the expectations: speeches made by cabinet ministers are on average 62% more influential than those of other MPs, while speeches made by the Speaker are 12% less influential than speeches made by other members. This provides reassuring evidence regarding the face validity of the measure of influence described above.

With this measure in hand, I now analyse the effect of the appointment of a female cabinet minister on the influence of female MPs. I use a similar fixed-effects identification strategy as employed above, but in contrast to the previous analysis here I concentrate on changes at the individual speech – rather than debate –

level.[13] I estimate models of the form:

$$
\begin{aligned}
influence_{s(imt)} \;=\; & \beta_1 * FemaleMP_i + \beta_2 * FemaleMinister_{mt} + \\
& \beta_3 * (FemaleMP_i * FemaleMinister_{mt}) + \\
& \lambda_{m0} + \lambda_{m1}t + \lambda_{m2}t^2 + \delta_t + \epsilon_{s(imt)}
\end{aligned}
\tag{4.9}
$$

where $influence_{s(imt)}$ represents the influence of speech $s$ by member $i$ in a debate pertaining to ministry $m$ at time $t$. $FemaleMP_i$ is a binary variable, equal to one when the MP delivering the speech is female, and zero otherwise. $FemaleMinister_{mt}$ is equal to one when the minister responsible for ministry $m$ and time $t$ is female, and zero otherwise. $\beta_1$ captures the average difference in influence between male and female MPs when the minister is male. $\beta_2$ represents the marginal effect of a female minister on the influence of male MPs, and the equivalent effect for female MPs – and the main quantity of interest – is given by $\beta_2 + \beta_3$. The role-model hypothesis implies that $\beta_2 + \beta_3 > 0$, i.e. that female MPs' influence increases after the appointment of a woman minister. As with the previous analysis, in addition to ministry and time fixed-effects ($\lambda_{m0}$ and $\delta t$, respectively), I also relax the common trend assumption with the addition of ministry-specific linear ($\lambda_{m1}$) and quadratic ($\lambda_{m2}$) time trends. I also provide estimates for a GAM model, which includes ministry-specific non-parametric time trends. Finally, as in the previous analysis, errors are clustered at the ministry level to account for correlation of the error term within ministries. Table 4.2 presents the results.

Model 1 gives the results of a naive specification without controlling for ministry

---

[13]As in the previous analysis, I exclude all speeches made by cabinet ministers to avoid artificially inflating the influence scores for female MPs. Speeches made by the Speaker of the House are likewise excluded.

**Table 4.2:** Effect of appointing a female minister on MPs' debate influence

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | | | | *influence* | | | |
| Constant | 0.008*** | 0.014*** | 0.010*** | 0.017*** | 0.031*** | 0.030*** | 0.067*** |
| | (0.0005) | (0.0001) | (0.001) | (0.002) | (0.002) | (0.002) | (0.025) |
| Female minister | 0.0003 | −0.0001 | 0.0003 | 0.001 | 0.0001 | 0.00003 | −0.001*** |
| | (0.001) | (0.001) | (0.001) | (0.0005) | (0.0004) | (0.0004) | (0.0002) |
| Female MP | −0.0004 | −0.0002 | −0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0001 |
| | (0.0003) | (0.0003) | (0.0002) | (0.0002) | (0.0002) | (0.0002) | (0.0001) |
| Interaction | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.0002) |
| Ministry FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Month FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Observations | 466,987 | 466,987 | 466,987 | 466,987 | 466,987 | 466,987 | 466,987 |
| R² | 0.001 | 0.017 | 0.030 | 0.045 | 0.052 | 0.051 | |
| Adjusted R² | 0.001 | 0.017 | 0.030 | 0.045 | 0.051 | 0.050 | 0.060 |

NOTE: Models 1-6 present OLS fixed-effect regressions for the period 1997-2015. Regression coefficients are shown with bootstrapped robust standard errors (clustered by ministry) shown in parentheses. The outcome variable is the *influence* of individual speeches, and the independent variables are an indicator for the gender of the MP ("Female MP"), an indicator for the gender of the minister responsible for a given debate ("Female minister") and an interaction between the two. Model 4 corresponds to the baseline model without ministry-specific time trends, while models 5 and 6 correspond to equation 4.9 and add linear and quadratic time trends in addition to ministry fixed-effects and month fixed-effects. Model 7 presents results from the generalised additive model, which includes non-parametric ministry-specific time trends. *p<0.1; **p<0.05; ***p<0.01

172

or time fixed-effects. The naive estimate indicates that while the appointment of a female minister has no effect on the influence of *male* MPs in parliamentary debates, *female* MPs' influence does increase when a female minister is appointed. The introduction of ministry (model 2) and time (model 3) fixed-effects, does not appear to change the estimate dramatically, and the estimate in model 4 also supports the story: the appointment of a female minister is significantly related to an increase in the influence of female MPs in parliamentary debate, but has no effect on the relative influence of male MPs. Models 5 and 6 include ministry-specific linear and quadratic time trends, and model 7 includes non-parametric time trends from the GAM. As before, the fact that the effect does not disappear once controlling for these trends gives additional support to the design-based identification strategy.

The influence measure is not straightforward to interpret in terms of the magnitude of the coefficients and so I present the estimated marginal effects for male and female MPs from these models in figure 4.6. The figure shows the percentage change in influence for male (orange lines) and female (blue lines) MPs after the appointment of a female minister, relative to a baseline where the minister is male. Under all models, the marginal effect for male MPs is close to zero, and is never statistically significant. For female MPs, the effect is always positive and significant, and the magnitude of the effect is non-trivial: based on the results in model 6, under a female minister, female MPs are 24% [5%, 42%] more influential compared to the baseline level of influence when the minister is male. In sum, the results in this section indicate that, consistent with a role-model effect, the appointment of a female minister leads to an increase not only in the degree to which female MPs participate in plenary debate, but also in the level of influence that female MPs enjoy when debating with their fellow parliamentarians.

173

**Figure 4.6:** Marginal effect of female minister on male and female influence
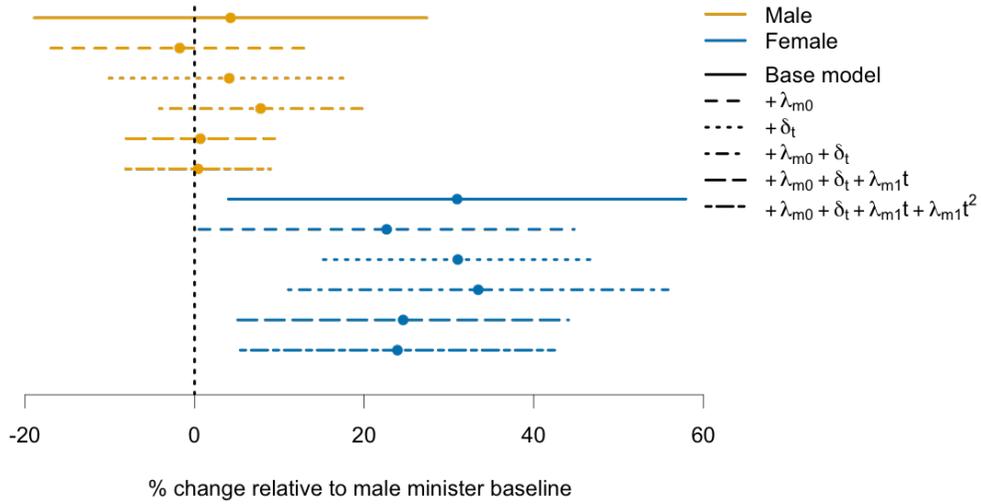


NOTE: The plot shows the marginal effect of the appointment of a female cabinet minister on the debate influence of male (orange lines) and female (blue lines) MPs, relative to the average level of influence when the minister is male.

## Ministerial responsiveness

The analysis in the previous sections demonstrated reduced-form evidence of a female role-model effect in the House of Commons, both in terms of participation and influence. How might we account for these effects? The processes underpinning these findings are likely to be many and varied, and isolating the mechanisms behind causal effects is notoriously difficult with observational data (Imai et al., 2011). However, in this section I provide evidence consistent with one potential mechanism: the responsiveness of female ministers to female MPs. In the next section I consider some alternative explanations for the findings. Although these explanations do not constitute all of the possible factors that might link the appointment of a female minister to the increased participation and influence of

174

female MPs, they do represent some of the more plausible possibilities.

As demonstrated above, female MPs come to play a more central role in parliamentary debate following the appointment of a female minister. One explanation for this finding might be that female cabinet ministers behave in a systematically different manner towards female MPs than do male ministers. In particular, we might imagine that female ministers are more *responsive* to the speeches of female MPs. Such a hypothesis is consistent with findings in the literature on social linguistics: "conversational partners who offer encouragement and are attentive and responsive are more likely to elicit frequent and active participation from speakers in the conversation...When a conversational partner offers little encouragement and appears inattentive, the active participation of speakers diminishes." (Hannah and Murachver, 1999, 157) If female ministers are disproportionately 'responsive' to women, this may therefore give female MPs greater reason to invest in the process of participating in debate. When female MPs receive ministerial responses to their speeches that are of higher quality, this is likely to serve as a signal that they are valued colleagues in the House, and may encourage higher levels of participation in future debates. Similarly, the measure of influence outlined in the previous section is based on the idea that speakers are more influential when the language that they use is adopted by other members is subsequent speeches. Accordingly, if female cabinet ministers provide fuller responses to the contributions of female MPs than do male ministers, then this could directly explain the empirical results presented above.

What are the important properties of responsiveness? First, a response is the occurrence of one phenomenon *after* the occurrence of another phenomenon. Second, a responsive speech is necessarily *reactive*, and involves engaging with or replying to concepts raised in an original speech. To measure 'responsiveness', I

175

therefore assume that a speech, $j$, responds to another speech, $i$, when it occurs directly after $i$ and when it engages with the same thematic content as $i$. I also consider one speech to be more responsive to another when that speech is longer, on the assumption that longer responses provide more information to the original speaker than shorter ones, and give a greater impression of attentiveness and fullness of reply than shorter responses.[14]

I define a metric which measures how similar two (consecutive) speeches are in terms of the words that they use. Making use of the vector-representation of speeches described in equation 4.6, the responsiveness of speech $j$ to speech $i$ is given by:

$$res_{j \rightarrow i} = sim(i, j) * n_j \tag{4.10}$$

where the first term on the right-hand side of the equation is the cosine-similarity between the two tf-idf vectors, and $n_j$ is the number of words in speech $j$. When all elements of $v_i$ and $v_j$ are positive, as they are here, the cosine-similarity of two documents is bounded between zero and one. An intuitive interpretation of $res_{j \rightarrow i}$ is therefore the (weighted) number of words in speech $j$ that are responding to speech $i$.[15]

I provide two types of validation for this measure. First, within a debate, MPs might use similar words even when they are not responding to one another.

---

[14] The modelling of 'responsiveness' here differs from previous approaches. For example, Eggers and Spirling (2014) evaluate the changing levels of ministerial responsiveness to questions of backbench MPs in the 19th century House of Commons by analysing the relative frequency with which ministers speak directly after backbenchers in parliamentary debate. By contrast, I focus on the degree to which – conditional on a minister speaking after a backbencher – the language used by a minister is *similar* to that used by the backbencher.

[15] Note that as $i$ occurs prior to $j$, it therefore cannot be understood to 'respond' to $j$. For this reason, $res_{i \rightarrow j}$ is not meaningful in our context, and I calculate equation 4.10 only for sequentially adjacent speeches.

Debates are normally focussed on a small number of topics, the discussion of which will lead MPs to use similar language regardless of whether they are talking directly to one another. Note that weighting the term-frequency scores by the inverse-document-frequency does not solve this problem, as the idf vectors are calculated *across* debates, meaning that while words common to all debates are down-weighted, words that are common *within* a debate may still have high weights due to their relatively low levels of usage in the corpus as a whole. However, if the measure defined in equation 4.10 captures responsiveness, and not merely topicality, then speeches that are adjacent to one another should demonstrate higher responsiveness scores than speeches that are not adjacent. Table C.5 in the appendix tests this hypothesis. From each debate in the corpus, I randomly sample two speech pairs. One of the pairs is adjacent, and one is non-adjacent. I then regress the responsiveness score on a binary indicator which is equal to one for an adjacent pair of speeches, and zero otherwise. The coefficient on this indicator is statistically significant, and implies that adjacent speeches are approximately 40% more responsive than non-adjacent speeches. This provides strong evidence that equation 4.10 is capturing something distinct from topicality: comparing pairs of speeches *within the same debate*, those speeches that follow directly after each other are more responsive than speeches that are non-adjacent.

Second, in a subset of debates, government ministers go before the House to field questions from backbenchers, and are required to provide answers to these questions. In these 'Question Time' debates, questions by backbenchers need not address the same topic as the question just answered by the minister. For example, a first backbencher might ask the minister about schools, to which the minister will provide an answer, and then a second backbencher might ask about child care provision, to which the minister must also respond. In these debates, we

should therefore expect that when a minister's speech follows a backbencher, that speech should be more responsive than when a backbencher's speech follows that of a minister. For each speech in each 'Question Time' debate, I code whether the speech is made by a minister responding to a backbencher, or a backbencher asking a new question.[16] I then regress the responsiveness score on a binary indicator which is equal to one when the speech is made by a minister in response to a backbencher. The results in table C.6 show that ministerial replies are 153% more responsive than are questions posed by backbenchers to the minister. This indicates that the measure is accurately recovering intuitive properties of the concept of responsiveness.

I now turn to the main analysis. To reiterate, if female MPs speak more and become more influential because they receive higher quality responses from female ministers than male ministers, then ministerial speeches subsequent to female speeches should be marked by higher levels of $res$ when the presiding minister is female. I therefore subset the data to those speeches made by backbench MPs which are immediately followed by speeches made by ministers, and estimate models of the following form:

$$
\begin{aligned}
res_{s(imt)} \;=\; & \beta_1 * FemaleMP_i + \beta_2 * FemaleMinister_{mt} + \\
& \beta_3 * (FemaleMP_{mt} * FemaleMinister_{mt}) + \\
& \lambda_{m0} + \delta_t + \lambda_{m1}t + \lambda_{m2}t^2 + \epsilon_{s(imt)}
\end{aligned}
\tag{4.11}
$$

The unit of analysis in these models is a speech made by a backbencher, which is immediately followed by a speech made by a minister. Thus, $res_{s(imt)}$ is the

---

[16]To simplify the analysis, I exclude all instances where a backbencher follows from another backbencher or a minister follows from another minister.

response *received* by a speech $s$ made by MP $i$ in a debate pertaining to ministry $m$ at month $t$. $FemaleMP_i$ is a binary variable, equal to one when the MP is female, and zero otherwise. $FemaleMinister_{mt}$ is equal to one when the minister responsible for ministry $m$ and time $t$ is female, and zero otherwise. $\beta_1$ indicates the difference in responsiveness received by male and female MPs when the minister is male. $\beta_2$ captures the effect of the appointment of a female minister on the responses received by male MPs. $\beta_3$ therefore captures the interaction between the gender of the MP speaking, and the gender of the minister responding. A positive $\beta_3$ coefficient would indicate that the appointment of a female minister leads to an increase in ministerial responsiveness to speeches by female MPs, conditional on ministry and time fixed-effects. As before, I include ministry-specific linear and quadratic time trends, and I also provide estimates for a GAM which includes non-parametric versions of these trends. Also as before, errors are clustered at the ministry level to account for correlation of the error term within ministries.

Table 4.3 presents the results. The interaction effect of interest, $\beta_3$, is positive, significant, and sizeable in magnitude across all model specifications. To interpret the substantive magnitude of these effects, I plot marginal effects in figure 4.7, where the baseline is the average responsiveness of male ministers to male and female speeches. Under a male minister, the average response to a speech by a female has a *res* score of 23. Based on the estimates in model 6, this implies that the appointment of a female minister increases the responsiveness to female speeches by 33% [7%, 59%]. By contrast, the appointment of a female minister has no discernible effect on the responsiveness to male speeches: across all models in table 4.3, the coefficient on "Female minister" is small in magnitude, varying in sign, and in all cases statistically indistinguishable from zero. However, when the first speaker is a woman, then the gender of the responding minister matters.

179

**Table 4.3:** Effect of appointing a female minister on the responsiveness to MPs' speeches

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | | | | *Responsiveness* | | | |
| Female | −1.488*** | −1.540*** | −0.776 | −0.922* | −0.872 | −0.862 | −0.744** |
| | (0.434) | (0.455) | (0.557) | (0.548) | (0.563) | (0.559) | (0.336) |
| Female Minister | 0.557 | −0.492 | 0.914 | 0.402 | 0.486 | −0.127 | −0.739 |
| | (1.278) | (1.419) | (0.929) | (0.913) | (1.259) | (1.090) | (0.573) |
| Interaction | 5.823*** | 5.719*** | 5.736** | 5.768*** | 5.828*** | 5.730*** | 5.438*** |
| | (2.188) | (2.179) | (2.243) | (2.200) | (2.227) | (2.153) | (0.840) |
| Constant | 24.432*** | 19.969*** | 27.338*** | 24.947*** | 19.130*** | 20.289*** | 22.510*** |
| | (0.629) | (0.074) | (5.478) | (4.807) | (4.653) | (4.529) | (1.766) |
| Ministry FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Month FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Observations | 110,492 | 110,492 | 110,492 | 110,492 | 110,492 | 110,492 | 110,492 |
| $R^2$ | 0.001 | 0.004 | 0.011 | 0.014 | 0.015 | 0.015 | |
| Adjusted $R^2$ | 0.001 | 0.004 | 0.009 | 0.012 | 0.013 | 0.013 | 0.019 |

NOTE: Models 1-6 present OLS regressions for ministerial responses, and model 7 presents the results of the GAM. Regression coefficients are shown with cluster-robust standard errors in parentheses (clustered on ministry). The outcome variable is *res* as defined in equation 4.10. "Female" is an indicator variable equal to one when the first speaker is female, and zero when the first speaker is male. "Female Minister" is equal to one when the responding minister is female, and zero when the minister is male. "Interaction" is the product between these two variables, and is the interaction of interest. *p<0.1; **p<0.05; ***p<0.01

180

**Figure 4.7:** Marginal effect of a female minister on the responsiveness to male and female MPs
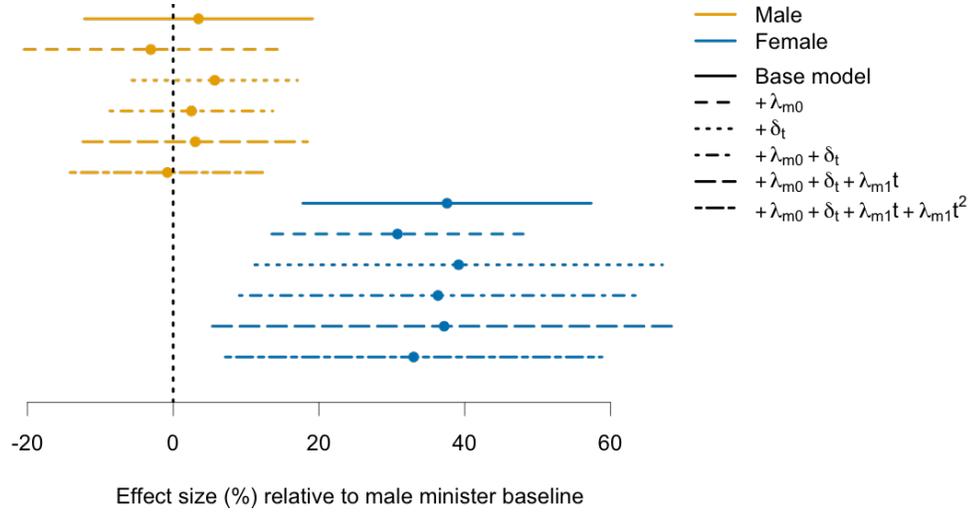


NOTE: The plot shows the marginal effect of the appointment of a female cabinet minister on the responsiveness to speeches by male (orange lines) and female (blue lines) MPs, relative to the average level of responsiveness when the minister is male.

In sum, the analysis suggests that female MPs receive systematically different responses from male and female ministers. These results help to explain the increase in influence of female MPs detailed in the previous section. Female MPs become more influential in parliamentary debate (the language that they use in debate is adopted more often in subsequent speeches) after the appointment of a female minister, and this effect is at least partially driven by higher levels of responsiveness of the female minister herself. This may also explain the increase in the participation of female MPs in debate, as higher levels of ministerial responsiveness indicate that the concerns of female MPs are receiving more attention from powerful government figures, and send a signal that the issues that female MPs raise are worthy of governmental concern.

181

The central claim made in this paper is that that female cabinet ministers serve as role models to other women in the legislature. I have provided evidence that the appointment of a female minister is associated with an increase in the participation and influence of other female MPs in parliamentary debate, and that female ministers respond in a systematically different fashion to female MPs than do male ministers. I do not claim that the differential level of responsiveness is the *only* mechanism through which the role-model effect could operate. It is possible, for example, that the driving force behind female MPs' increased willingness to participate stems from the purely symbolic effects of appointing a female minister rather than the behavioural differences that such an appointment may lead to. Such effects are very difficult to study empirically as, by definition, they rely on essentially unobservable signals that result from the promotion of a woman to high office. Regardless, even if the results above are attributable to such symbolic effects, they would remain consistent with a role-model hypothesis, albeit operating through a different mechanism to the one outlined above.

More concerning is the possibility that the reasons for the increase in female participation and influence are completely distinct from the hypothesised role-model effect. I consider two alternative explanations here. First, the increase in female participation and influence could be the result of strategic behaviour on the part of the opposition party. If appointing women to visible positions confers a valence advantage to the governing party, opposition parties may respond to the appointment of a female government minister by appointing a woman to lead the competing *shadow* ministry (Gilardi, 2015; Matland and Studlar, 1996). If this is the case, the increase in participation may not be due to a role-model effect at

all, but rather to the fact that institutional rules give both ministers and shadow ministers more time to speak on the House floor than other MPs.

I investigate this hypothesis in appendix section C.3 by analysing the relationship between the gender of a *newly appointed shadow minister* and the gender of the *current government minister* in a given ministry. If opposition parties are behaving strategically, then the probability that a female shadow minister is appointed should be positively associated with the presence of a female government minister. As my regressions show, there is little empirical support for such an argument. This suggests that it is unlikely that the effects documented in the main analysis are driven by the strategic appointment of female shadow ministers by opposition parties.

Second, ministerial positions in the House of Commons come with significant agenda-setting powers (Laver and Shepsle, 1994), and ministers determine the direction and substance of legislation deriving from their ministries (subject to cabinet approval). One possible explanation for the increase in female participation and influence in floor debates is the idea that female ministers may propose legislation that focuses on topics which are traditionally of greater interest to women, and on which women's contributions are more respected. While such a finding would itself be interesting, it would undermine the notion that female ministers are acting as role models, and suggest instead that female MPs increase their level of participation thanks to a substantive change in the legislative agenda.

In section C.4 of the appendix, I investigate this hypothesis by examining whether topics that are typically associated with high levels of female participation become more prevalent when a female minister is appointed. I use statistical topic models to estimate which legislative topics are associated with high levels of female participation under male ministers, and then assess the degree to which

183

these topics increase when a female minister takes office. I find no evidence that female ministers are disproportionately introducing legislation that is traditionally associated with high levels of female participation. Although female ministers may have different legislative priorities compared to their male counterparts, it does not appear to be the case that differential agenda-setting dynamics explain the role-model effect discussed in this paper.

Conclusion

In a debate in the House of Commons on International Women's Day in 2003, Joan Ruddock, a Labour Party MP, paid tribute to the minister for Women and the Secretary of State for Trade and Industry, Patricia Hewitt:

> "It is a great pleasure, as it always is, to participate in a debate that is dominated by women. I want to start by congratulating my right honourable Friend the Minister for Women, who is a great role model for us – not just in her role as Minister for Women…but by being the head of a substantial Government Department." (Ruddock, 2003)

That female parliamentarians themselves recognise the importance of role models in the legislature makes it all the more surprising that such a premise has been missing from the academic literature. In this paper, I provided evidence for a female role-model effect in the House of Commons by showing that the appointment of a female cabinet minister is associated with an increased propensity for other female MPs to speak in parliamentary debates under the jurisdiction of the new minister. Further, I find that female MPs also become more influential in debates under the purview of female ministers. While there are many mechanisms through which a role-model effect may operate, I show that female ministers respond in

a systematically different fashion to the speeches of female MPs than do male ministers, while the responsiveness to male MPs' speeches is constant regardless of minister gender.

These results have implications for the study of representation in legislative politics more broadly. Legislatures are hierarchical institutions in which some actors have access to positions which confer important powers to the office holder. While the general consequences of these institutional powers are well-studied (Laver and Shepsle, 1994; Cox and McCubbins, 1993, 2005), there has been less written about the implications of female occupation of such roles for the representation of women. Cabinet posts, committee chairs, and other high-profile legislative offices are normally marked by high levels of visibility and prestige, and make the politicians that hold these posts natural focal points for the public, but also for other members of the legislature. The results here suggest that when women hold high-profile offices, they have significant effects on the behaviour of other legislators, and, crucially, that their appointment can increase the voice of *other* women in the policy process.

On top of the fact that women are significantly underrepresented in terms of their numerical power in most parliaments, in the UK case it is also apparent that women contribute less to parliamentary debates than their male colleagues. The evidence presented here pertains to just one legislative setting, and comparative evidence on the extent to which male and female legislators participate would be useful for establishing a more general understanding of the gender gaps in the policymaking process. Regardless, the results here suggest that any such gender gaps in participation may be ameliorated as more women are promoted to positions of high office – a trend that has been increasing in recent years in some areas of the world (Escobar-Lemmon and Taylor-Robinson, 2008).

Furthermore, a central focus of legislative scholars studying gender issues has concerned the link between descriptive representation – the number of women elected to parliament – and substantive representation – the incorporation of women's interests into policy outcomes (Dahlerup, 1988; Phillips, 1995; Lovenduski and Norris, 2003; Mansbridge, 2005; Childs and Krook, 2009). While there is growing empirical evidence for this link (Wängnerud, 2009), the mechanisms that connect increasing numbers of women in parliament to qualitative changes in political outcomes have not been fully articulated (Beckwith and Cowell-Meyers, 2007).

One possibility is that it is not merely the number of women who gain elected office that matters for substantive representation, but also the heights to which those women rise once they have been elected. A limited amount of experimental research indicates that when women take leadership roles, collective decisions tend to reflect distinctly female preferences (Humphreys, Masters and Sandbu, 2006). More research is needed to examine the down-stream effects of female leadership on policy outcomes, but the findings here indicate a possible mechanism through which policy change may occur: female leaders promote increased participation and influence of other women in policymaking. Tracing out a full causal relationship between female leadership and policy outcomes that enhance the substantive representation of women is a difficult empirical task, but the results here suggest, at the very least, that the appointment of women to high-office can have non-negligible effects on the behaviour of other legislators. The findings therefore provide empirical support for recent recommendations to extend the study of women's legislative representation "from critical mass to critical actors" (Childs and Krook, 2009, 125).

In addition, future work should also consider the potential for a role-model effect

for other disadvantaged groups in different legislative settings. Historically, political elites have disproportionately shared characteristics of the dominant groups in society, and several groups remain significantly underrepresented in the policy process. It would be profitable in the US case, for example, to examine whether the elevation of African-American members to senior positions in the Congressional hierarchy is associated with a concomitant increase in the participation of black legislators in policymaking.

Finally, a growing formal literature examines the consequences of leaders' communication strategies in collective decision making (Riker, 1996; Dewan and Myatt, 2007, 2008, 2012; Bolton, Brunnermeier and Veldkamp, 2008). However, thus far, the empirical literature on communication and leadership has lagged behind (Ahlquist and Levi, 2011, 15). In part, this is due to the difficulty of operationalising reliable measures of spoken communication and establishing credible identification strategies that isolate the effects of leaders in observational settings. This paper makes progress on both fronts. First, the identification strategy I employ suggests that by exploiting variation over time in the identity of political leaders, it is possible to estimate causal effects of leadership on parliamentary outcomes. Second, the measures of influence and responsiveness introduced here could be profitably applied to other questions of rhetoric and parliamentary leadership. More generally, recent advances in quantitative text analysis provide political scientists with new opportunities to study important questions of communication and leadership. I leave such endeavours for future work.

# 5

# Conclusion

The papers in this thesis addressed two central questions. First, the thesis was concerned with establishing how the actions of the legislative leadership affect the behaviour of other parliamentarians. In particular, in the first paper I argued that by *selecting* the legislative proposals that are allowed to progress to the parliament floor, cohesion-motivated party leaders are able to prevent roll-call votes which threaten to divide their members. The second paper suggested that by *proposing* legislation during crisis periods, industrious agenda-setters are able to change the dominant dimension of politics and realign voting coalitions in their favour. The third paper argued that by occupying highly visible positions in the legislative hierarchy, leaders can act as *role models* to other parliamentarians which can encourage their participation in the policymaking process.

Second, the thesis emphasised that these behavioural effects also have important implications for parliamentary outcomes. The first paper demonstrates that when party leaders opt to block divisive legislation in order to prevent party splits, policy gridlock in the system increases. In the second paper, the model I describe implies that the shift in voting behaviour that occurs subsequent to a crisis is the result of policy moving towards the preferences of the agenda-setting actor in the parliament. The centralisation of agenda-setting powers therefore provides

legislative leaders with significant discretion over policy outcomes in periods of crisis. Finally, the third paper suggests that the appointment of descriptive role models can change the representation of interests in political discussion. Particularly in instances where certain demographic groups have been under-represented historically, the elevation of a role model to high political office can help address representational gaps that persist within the legislature.

In this final chapter, I summarise the findings of each paper and broaden my discussion of the implications of this research. I conclude by commenting on the limitations of the analyses, and outline a number of potential avenues for further work.

Substantive contributions and further implications

The internal dynamics of parliamentary parties have long been of interest to scholars of legislative politics. Although the inner-workings of parties are interesting in their own right, intra-party politics can have important consequences for the policymaking process as a whole. As Laver & Shepsle (1999, 23) argue, we "need to consider what goes on inside parties if we want to include an account of party decision making in a model of some political process." Chapter two investigated party leaders' use of cohesion-inducing strategies in order to shed light on the relationship between party management and legislative outcomes. I argued that when party leaders are motivated to maintain high levels of voting cohesion, and are unable to discipline their members to follow a common party line, they can restrict the range of proposals which are allowed to progress onto the legislative agenda. By blocking potentially divisive bills, party leaders' strategic agenda-setting decisions can significantly increase the cohesion of their parties in roll-call votes.

Empirically, chapter two addressed two shortcomings of existing research. First, previous studies have struggled to disentangle the effects of agenda control and 'carrot and stick' discipline on party cohesion, because party leaders often have access to both mechanisms in national parliaments. By situating the study in the context of the European Parliament – where the main disciplinary powers are held by national party leaders but the agenda is controlled by leaders of the European Party Groups – I was able to distinguish between the effects of these mechanisms on party cohesion.

Second, I presented a new source of legislative data which allowed for a novel and direct test of the agenda-setting argument. Existing studies typically require analysts to make significant inferential leaps from the theoretically implied, but empirically unobserved, blocking behaviour of party elites to observed patterns of voting behaviour in roll-call votes (Krehbiel, 2006). This new data therefore represents a substantial contribution to the existing literature, as it isolates a critical juncture in the agenda-setting process in which party leaders are able to remove proposals from the plenary agenda. I used this data to document the frequency with which proposals are blocked, and I introduced new techniques to measure the internal division of the pivotal agenda-setting party on each proposal. By relating the frequency of blocking to the measure of agenda-setter polarisation, I was able to provide evidence that when the party of the agenda setter is more divided, the probability that proposals will be blocked increases. In combination, these innovations allow for a closer mapping between theory and empirics than has been possible in previous research.

Chapter two also has broader implications for our understanding of the collective action problems faced by political parties and their legislative leaderships. When acting independently, rational decision-making by individual legislators can

lead to Pareto inferior outcomes, and the centralisation of powers to the party leadership is key if atomistic legislators are to secure potential joint gains (Fiorina and Shepsle, 1989). However, by using these powers to enforce collective effort by party members, leaders' actions may have externalities which affect the policy process more generally. In particular, the choice over which cohesion-inducing tools party leaders employ may be consequential: while strong disciplinary mechanisms will enable a party to push forward policy proposals, reliance on negative agenda control as a strategy for maintaining voting cohesion can limit the scope of the parliamentary agenda. Chapter two suggests that, in certain circumstances, party leaders may therefore face a trade-off between voting cohesion and legislative gridlock. This thesis does not specify the conditions under which party leaders will forego voting cohesion in order to advance the policy interests of (small) majorities of their parties, but it does highlight that, when traditional disciplining tools are weak, leaders cannot always have both.

The twin financial and sovereign debt crises that struck Europe in and after 2008 had severe consequences for the economies of European countries. The institutional architecture developed to deal with these crises transferred significant powers to actors at the EU level, integrating many policy competences that had previously been held exclusively by national governments. The theoretical model in chapter three provided an interpretation of the European crisis which emphasised the important role played by pro-integration agenda setters in shaping these institutional reforms. I argued that the severity of the financial crisis revealed deficiencies in existing policies, which increased legislators' tolerance to new policy proposals. In turn, integrationist agenda-setting actors in the EU were able to exploit this tolerance and implement new policies that would have been extremely

unlikely to have been approved by the Parliament in the absence of the crisis. I used the spatial model to demonstrate that when pre-crisis politics is multidimensional, the effects of a crisis can be observed in the changing composition of the winning coalition in parliamentary votes. By combining a probabilistic classification of 'crisis-relevant' proposals with an ideal point model which allowed me to estimate the composition of the winning coalition on each vote, I showed that coalitions in the European Parliament shifted in ways consistent with the model on votes that pertained to the crisis, but not on other votes.

This argument provides more general insights into the relationship between politics and policymaking during periods of crisis. In particular, scholars have analysed the effects of crises for a variety of political outcomes, but there has been surprisingly little work focused on the relationship between external crises and legislative behaviour. As described above, the findings reveal that crises can have significant implications for the voting coalitions that form in legislative roll-call votes. More importantly, however, the model implies that such shifts in voting behaviour can be attributed to the additional discretion that agenda-setting actors enjoy over policy during crisis periods. The argument I provide suggests that policy choices in periods of crisis are determined by those actors who are in strong institutional positions before such crises begin. That crises may open "windows of opportunity" for industrious political actors is a commonly held view. The model I present goes beyond this conventional wisdom, and suggests that it is specifically leaders who possess proposal powers that are best situated to "make an opportunity out of a crisis", and, during crises, it is toward those actors that we should expect policy to shift.

This perspective may be helpful for understanding the political dynamics of other crises. For example, as with the financial crisis I discuss, the unprecedented

192

increase in migrants arriving in Europe since 2014 has uncovered significant deficiencies in current EU policies. Pro-integration actors have the power to initiate legislation pertaining to migration at the EU level, and the European Commission has recently drafted legislative proposals that would create a new common border force equipped with powers to overrule national authorities (Commission, 2015). However, support for the Commission's proposal is limited, and, in contrast to the case discussed in chapter three, anti-integrationist responses to the migrant crisis would not require legislation at the European level. This implies that the agenda-setting power of pro-integration actors is diluted in the area of migration. My model implies that the relatively equal distribution of proposal powers between EU and national levels will have consequences for the policies that are adopted in response to this crisis. In this case, although there is increasing dissatisfaction with status quo policies, because the ability to propose policy alternatives is diffuse, reforms to asylum and border protection are likely to be less integrationist than were the reforms to the financial architecture in the post-financial crash world. As partial evidence in support of this view, several countries within the Schengen free-movement area have recently reintroduced national border controls in an attempt to curb the number of migrants.

The final paper (chapter four) investigated gendered patterns of participation in legislative politics. By collecting and analysing a longitudinal dataset of over a million parliamentary speeches, chapter four presents findings which indicate that women are under-represented in UK politics not only in terms of their numerical strength in parliament but also in terms of their participation in legislative debate. To the extent that inequalities in parliamentary speaking time are reflected in the process of policymaking as a whole, this descriptive result should be of concern

to normative theorists who put a premium on the equal participation of different demographic groups in political affairs (Phillips, 1995; Dovi, 2002; Mansbridge, 1999). The findings in chapter four reinforce the idea that, despite their increasing numbers, women's experiences in parliament remain different from those of their male counterparts.

Furthermore, the results also suggest that the representation of women's interests in politics can be affected not only by the number of women elected to the legislature, but by the position that women – once elected – hold in the parliamentary hierarchy. The empirical analysis revealed causal evidence of a female role-model effect in the legislature. When a woman is appointed to the post of cabinet minister in the House of Commons, the participation of other female MPs in debates that relate to that ministry increases by approximately one third. In addition, by developing a new measure of *influence* in parliamentary debate, I was able to show that – as well as increasing female participation in debates – the appointment of a female minister also increases the influence that women enjoy when discussing policy with their fellow parliamentarians. In explaining the mechanisms that underpin these results, I also developed a new measure of debate *responsiveness* and used this to show that female cabinet ministers engage more fully with the speeches made by female backbenchers than male ministers do.

Taken together, these results have implications for the way we think about the representation of historically disadvantaged groups in legislative politics. Normative scholars have argued that democratic societies that have historically denied representation to certain groups should make institutional commitments that guarantee the participation of those groups in contemporary political life (Dovi, 2002, 729). In general, recommendations derived from this literature suggest that an important element of such 'descriptive representation' is the need to increase

194

the number of disadvantaged group members who are elected to parliamentary bodies. However, chapter four implies a complementary approach for increasing the substantive representation of group interests: the appointment of group members to positions of high political office. While increasing the number of women, or ethnic minorities, or LGBT members of parliament is likely to help in redressing historical biases, the elevation of members of these groups to positions of power may also have consequences for the representation of group interests independent of simple 'numbers-based' approaches (Beckwith, 2007).

The findings also have broader implications for women's representation in other organisational settings. For example, increasing attention is paid to the representation of women on corporate boards (Matsa and Miller, 2013; Wang and Kelan, 2013; Commission, 2012). As a recent UK government report on this issue argued, "the relatively low number of successful female role models often compounds stereotypes and reinforces perceived difficulties in rising up the corporate ladder" (Davies, 2011, 17). A number of governments have embraced policies to increase the number of women on boards, and a driving motivation behind this agenda is the notion that when women are promoted, their success can challenge existing norms of business culture, and inspire other women at earlier stages of their careers. The findings presented here are consistent with this view, and suggest that, in the political world at least, the promotion of high-achieving women can have significant motivational effects on other women in an organisation.

Institutional privileges enjoyed by political leaders lie at the heart of many accounts of parliamentary politics, but in addition to controlling important parliamentary levers of power, leaders can also influence behaviour thanks to the highly visible nature of the positions that they hold. The results in chapter four support the notion that political leaders can act as focal points to other legislators,

helping them to coordinate their actions in uncertain environments (Dewan and Myatt, 2007, 2008, 2012; Bolton, Brunnermeier and Veldkamp, 2008). Female cabinet ministers in the UK appear to be focal points for other female legislators, providing important signals that encourage women to participate more in the policymaking process. In addition, by demonstrating that different leaders display distinctive communicative styles in debate, the findings show that the relationship between parliamentary leaders and their followers is conditioned not only by the institutional powers that leaders wield, but also by the way that leaders interact with followers during political exchanges. While institutional resources are important, they do not represent the sole source of a leader's influence in legislative settings.

Finally, the identification strategy that I employ in chapter four also helps to overcome a thorny empirical issue that has proved difficult in previous research: variation in leadership is often endogenous to the outcomes we are most interested in studying. Previous work has largely relied on experimental evidence to address this issue (Wilson and Rhodes, 1997; Eckel and Wilson, 2007; Komai and Grossman, 2009; Komai, Grossman and Deters, 2011). These studies provide important findings regarding the effects of leadership on group decisions, but few researchers have attempted to isolate a causal effect of the identity of political leaders in observational settings. As Ahlquist and Levi (2011, 18) suggest "the artificiality of the settings and the relative inattention to external validity pose serious limits to what these experiments tell us about how the world actually works." The studies that do isolate a causal effect of leadership outside of the laboratory tend to focus on atypical situations in which leaders are randomly assigned to different decision-making groups (Humphreys, Masters and Sandbu, 2006; Beaman et al., 2012). The strategy I present results in plausible causal

196

evidence from an observational setting by exploiting variation in the identity of leaders over time. This strategy demonstrates substantively meaningful effects of female leadership in the legislature, and future work might profit from employing similar panel-based studies for detecting leadership effects elsewhere.

LIMITATIONS AND FUTURE WORK

The empirical findings presented in this thesis concern a specific set of parliamentary outcomes in the context of single legislative settings. As argued in the introduction, making credible inferences about the effects of leadership behaviour is a complicated problem in cross-country studies, as legislatures differ on many relevant institutional dimensions, making it difficult to isolate distinct theoretical mechanisms. Nevertheless, it is clear that single case studies of legislative behaviour may not be representative of broader patterns cross-nationally. To what extent are the regularities described above useful for understanding the role of political leaders in other contexts?

The findings in chapter two suggest that when party leaders have control over the plenary agenda, increases in intra-party heterogeneity will be associated with increased levels of legislative gridlock. This finding applies specifically to the context of the European Parliament, where leaders' negative agenda-setting powers are in fact somewhat *weaker* than they are in many national contexts – EPG leaders in the European Parliament can block proposals that come before the Conference of Presidents, but they cannot do so unilaterally. Accordingly, in systems where party leaders have a monopoly over agenda-setting powers, the effects of internal party division on gridlock may plausibly be *larger* than those estimated in this thesis. Of course, this is only likely to be the case when party leaders are unable to enforce cohesion in other ways. For instance, party leaders

in many parliamentary systems have a near-monopoly over control of the plenary agenda, but we would not in most circumstances expect intra-party polarisation to translate into systemic gridlock, because the same leaders also control many perks and privileges which can be used to keep their members in line. By contrast, legislative party leaders in presidential systems – where disciplinary powers are weaker (Carey, 2007) – might be more likely to face the trade-off described in chapter two, with internal party divisions more likely to result in gridlock.

The model of crisis politics developed in chapter three is also vulnerable to concerns about external validity, as we provide evidence that is restricted not only to one legislature, but which also applies to a single crisis period. An alternative approach would be to compare policy outcomes across multiple legislatures which are subjected to a common external shock, but where the preferences of agenda-setting actors vary from system to system. If our model is a good description of crisis politics, such a study should reveal that crisis responses differ according to the preferences of the agenda-setting actors in each country. This type of analysis, however, would require overcoming significant empirical obstacles such as measuring partisan preferences towards a crisis scenario across many political systems, and assuming away important variation in the powers associated with agenda-setting offices cross-nationally. By focussing on the dynamics of parliamentary behaviour *within* a specific political context, chapter three removes much of the ambiguity over the mechanisms that drive behaviour in the EU response to the financial crisis, albeit at a cost in terms of generalisability.

In contextualising the results presented in chapters two and three, it is also important to note that powers of political leaders in the European Parliament, and in the EU more generally, differ from those possessed by national leadership figures along many dimensions. For instance, in contrast with most domestic

parliaments, agenda-setting powers in the EU are broadly distributed across many actors (the EPG leaders, the Commission, the Council, etc). At the national level, agenda-setting offices are typically concentrated in the hands of *government* leaders, though, as Döring (1995, 223-246) shows, there is considerable variation in governments' agenda-setting power across domestic systems. Accordingly, in order for the findings to be generalised to other settings, it is clearly important for future work to take such institutional variation into account.

By contrast, despite the variation in their formal powers, legislative leaders are highly visible actors in the political process across many different parliamentary settings. Therefore, it seems plausible that the role-model effects demonstrated in chapter four may also be relevant for understanding representation in other legislatures. Future work could profitably apply a similar design to that used here in order to investigate whether role models matter for women in other systems, and also for other historically disadvantaged groups. It is only by extending the analysis to additional contexts that we can validate the findings presented in this thesis externally, but the ubiquitous presence of high-profile leaders and historically disadvantaged groups in modern legislatures suggests that such work could reveal important additional evidence.

In sum, rather than aiming to provide broad generalisations of legislative behaviour, this thesis prioritises establishing precise and credible inferences of the effects of legislative leadership in specific contexts. However, while I have opted for empirical precision over external validity, such a decision need not be zero-sum: this trade-off might be overcome by extending the analyses introduced in these papers to other legislatures. In addition to helping to generalise the results described here, such work would also undoubtedly uncover interesting heterogeneity cross-nationally.

Some additional limitations deserve discussion here. First, one objection to the results presented in chapter two is that they do not account for the length of time that legislative proposals are kept off the parliamentary agenda by EPG leaders. If proposals are shelved only temporarily, this would call into question the effects of negative agenda control on policy outcomes for the legislature as a whole. It is not necessary for such proposals to be delayed indefinitely in order for leaders to enforce cohesion – even relatively small delays on time-sensitive legislation may be sufficient to persuade recalcitrant legislators to follow the party line – but the consequences for legislative gridlock are clearly less serious if blocking is only temporary. A more nuanced approach would therefore do more to measure the *duration* of any such delay. Data limitations prevented me from pursuing such an approach here, but recent work in the UK context (Haber, 2015) suggests that data on legislative delay can help to further clarify the relationship between party divisions and legislative gridlock. In future work I intend to collect new data for measuring such delays in the European Parliament policy process.

Second, while I explore a number of the more plausible mechanisms behind the role-model effect in chapter four, alternative explanations may still account for at least some of the patterns I report. For example, one alternative rationale for the existence of a female role-model effect – both in politics and elsewhere – is that when women succeed, they help to break down historical stereotypes which, by favouring masculine characteristics over feminine ones, have inhibited women's progress in many organisational settings (Stout et al., 2011; Asgari, Dasgupta and Cote, 2010; Lockwood, 2006). While the theoretical arguments for such a mechanism are strong, empirically documenting changes in cultural attitudes is a formidable task. Interviews with parliamentarians have provided important insights into the gendered dynamics of parliaments in the past (Childs, 2000),

and such an approach may well be beneficial in establishing further mechanisms that lie behind the causal estimates presented in this thesis. Overall, to the extent that the presence of a high-profile woman does have motivating effects for other women, it seems likely that the mechanisms that underpin these effects will be many and varied. The results here provide an incomplete account of these mechanisms, and future work should examine factors linking role-model appointments and legislative outcomes in more detail.

In addition, chapter four tells us little about the direct consequences of female leadership for the *substantive* representation of women's interests in parliamentary outcomes (Pitkin, 1967). While the data and methods I present in chapter four move us somewhat closer to this notion by analysing women's influence in parliamentary debate, they do not provide direct evidence that female leaders substantively improve policy outcomes for other women. There are two main difficulties in providing an empirical answer to this question. The first is that causally identifying the effects of female leaders is very difficult in observational settings, as the appointment of a female leader is clearly endogenous to many of the substantive outcomes that scholars may wish to investigate. The design employed in chapter four makes progress on this issue, and could be usefully applied to other outcomes variables. However, the second difficulty is that it is not clear how best to measure the concept of substantive representation in a principled manner (Wängnerud, 2009, 61-65). One potential way forward would be to track the progress of policy amendments proposed by female legislators, and see whether the frequency and success of such amendments increases when policy is under the jurisdiction of a female leader. This approach is not, unfortunately, possible in the House of Commons, as successful backbench amendments are relatively rare, and the proposers of amendments are not well documented in the parliamentary

archives. Nonetheless, an amendment analysis might help to establish the effects of female leaders on substantive representation in other contexts.

Finally, this thesis introduced a number of new quantitative measures derived from digitised political texts. In chapters two and three I developed probabilistic approaches for assigning legislative texts to dimensions of substantive interest for which researchers already have well-defined measures of party preferences. Chapter four developed two new metrics of political discourse which measure the influence and responsiveness of participants in plenary debate. I provided a number of validation tests for each new measure, but future work could develop these measures further and subject them to additional testing in order to make them available to legislative scholars more broadly. Validation is an essential stage in the development of automated measures, and seems especially important when considering metrics that aim to capture complex human concepts such as influence and responsiveness. Moving forward, I plan to run a series of validation experiments to compare the quantitative measures developed in this thesis to hand-coded measures of the same concepts.

Further work on developing and validating these measures is justified by the potential value they have for answering important questions regarding political leadership. For example, although the relative influence of different actors is clearly important for our understanding of political conflict, we have so far lacked systematic approaches for measuring which politicians are influential in the cut and thrust of legislative debate. The influence measure I describe in chapter four therefore addresses an important gap in the methodological toolkit of legislative scholars, and might be used to shed light on a host of important research questions. More generally, the rapid expansion of new forms of digitised legislative data – many of which have been used in this thesis – and the development of

new statistical methods for analysing this data have created unprecedented opportunities to improve our understanding of legislative politics. The papers in this thesis have offered a small contribution to this broader research agenda, and represent a starting point for further quantitative research into legislative leaders, their parties, and the outcomes of the parliamentary process.

# A

## A.1 Roll-rate of the UK Conservative Party

In this section I analyse the 'roll-rate' of the UK Conservative Party in the period before the party left the EPP group to form the new ECR group. I use the concept of a 'roll' as defined in Cox and McCubbins (2005), which is measured as any vote on which a majority of a party votes to reject a given bill, but the bill nevertheless passes on the house floor. I analyse 6199 votes from the 6th EP, and compare the roll-rate of the Conservative Party to the roll-rate of other national parties. Table A.1 presents the results of a linear probability model, in which the dependent variable measures 1 if a given party was rolled on a given vote, and 0 otherwise. The independent variable is an indicator for the UK Conservative Party. Model 1 in table A.1 compares the roll probability of the Conservatives to that of all other parties in the parliament. Model 2 compares the roll probability of the Conservatives to other national parties within the EPP group.

The results clearly demonstrate that the Conservatives were rolled much more frequently than other parties during the 6th European Parliament. Focussing first on model 1, while the average roll-rate for all national parties in the parliament was approximately 28%, the Conservative party's roll-rate was over 20% higher. In model 2, the Conservative roll-rate is more than *twice* as a high as other national parties within the EPP.

**Table A.1:** Roll rates – UK Conservative party vs other parties

| | Rolled | |
|---|---|---|
| | All parties | EPP parties |
| | (1) | (2) |
| Conservatives | 0.062*** | 0.170*** |
| | (0.003) | (0.005) |
| Constant | 0.277*** | 0.169*** |
| | (0.0004) | (0.001) |
| Observations | 1,200,058 | 289,882 |
| $R^2$ | 0.0003 | 0.004 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |

## A.2   A SPATIAL MODEL OF VOTING COHESION WITHOUT AGENDA-CONTROL

The analysis in the main body of the text suggests that while intra-party polarisation will reduce the cohesion of European Party Groups, this relationship will be weaker when an EPG holds the *median* position in the Conference of Presidents, as when this is the case the leader of the EPG will be able to block potentially divisive proposals from reaching the parliamentary floor. As agenda-setting power in the EP is a function of the *position* of the EPG in the policy space, it is necessary to clarify expectations regarding the level of cohesion of median and non-median parties in the absence of negative agenda control. That is, if in the absence of agenda control we would also expect median parties to be more cohesive than non-median parties, empirical tests of hypothesis 2 may not identify the effects of purposive agenda control by party leaders in the Parliament.

In this section, I therefore focus attention on expectations for party cohesion in a parliamentary setting in which no actor is able to control the plenary agenda.

The discussion of this simple model establishes baseline expectations about the relationship between party position, ideological polarisation, and voting cohesion which are then contrasted with expectations derived in the main text.[1]

Consider a parliamentary agenda constructed from a set of $J$ independent policies, in which each $j \in J$ is unidimensional. Bills are considered under an open-amendment rule on the plenary floor meaning that all policies pass at $x_m$, the position of the median member of the parliament. Each legislator, $i$, votes for a bill $j$ when $x_i$ is closer to the position of the median legislator than to the status quo outcome $x_q$. Thus, $i$ votes yea if and only if:

$$-(x_i - x_m)^2 > -(x_i - x_q)^2 \tag{A.1}$$

Parties are treated as collections of likeminded individuals, where, for each policy issue $j$, the positions of party members $x_{ij}$ are iid draws from a normal distribution characterised by a mean parameter $\mu_{pj}$ and a variance parameter $\sigma_{pj}^2$. Each legislator from party $p$ on policy issue $j$ has a policy position given by $x_{i(p)j} = N(\mu_{pj}, \sigma_{pj}^2)$, where $\mu$ captures the average placement of members of party $p$ on policy $j$, and $\sigma^2$ captures the idea that parties are more ideologically united on some policy issues than on others. The subscripts on these parameters ($p$ and $j$) indicate that both party positions and party polarisation can vary across parties within policy issues, and within parties across issues.

We are concerned with the effect that the party parameters $\mu$ and $\sigma^2$ have on the cohesion of a party's members in plenary votes in the absence of any agenda-

---

[1]This simple model in this section is equivalent to the 'floor agenda' model in Cox and McCubbins (2005), and similar to the model presented in Krehbiel (1993). The main difference is that other models focus on the subset of bills that will be considered and passed by the parliament, while here I am specifically interested in voting cohesion.

setting activity. A party is completely cohesive on a bill when all of its constituent members vote either for or against the bill. By contrast, a party is divided when some members vote to approve the bill, while other members vote in opposition. We can therefore characterise the voting cohesion of party $p$ on bill $j$ by the probability that two randomly selected members, $a$ and $b$, will vote together on $j$.[2] Denoting this probability as $C_{pj}$, and the cutpoint separating the yea voters from the nay voters on a given vote as equal to $c = (x_m + x_q)/2$, then probability that $a$ and $b$ are either both less than $c$ or both greater than $c$ (on a given roll-call vote) is given by:

$$
\begin{aligned}
C_{pj} &= \Pr[(x_a < c) \cap (x_b < c)] + \Pr[(x_a > c) \cap (x_b > c)] \\
&= \Phi((c - \mu_{pj})/\sigma_{pj})^2 + (1 - \Phi((c - \mu_{pj})/\sigma_{pj})^2) \\
&= 1 - 2\Phi((c - \mu_{pj})/\sigma_{pj}) + 2\Phi((c - \mu_{pj})/\sigma_{pj})^2 \qquad \text{(A.2)}
\end{aligned}
$$

where $\Phi$ is the cumulative distribution function for the standard normal distribution. As can easily be seen from this formulation, the cohesion of a party on a given vote is therefore increasing in the distance between $c_j$ and $\mu_{pj}$, and decreasing in $\sigma_{pj}^2$. This implies the intuitive notion that the closer the average member of the party is to the cutpoint, the less cohesive the party will be overall in a roll-call vote. Similarly, on a given vote, when party members are more ideologically dispersed (i.e. when $\sigma^2$ is large), the party is more likely to be divided. I assume that status quo positions are uniformly distributed across the policy-space and centred on the position of the floor median, which in turn means that the cutpoints for each bill ($c_j$) are also uniformly distributed around $x_m$. The expected value of $C_p$

---

[2]A similar characterisation of voting cohesion is used by Desposato (2005). In the empirical analysis, I use this approach to estimate the cohesion of each EPG on each vote in the 6th and 7th European Parliaments.

across $J$ votes is therefore:

$$E[C_p|\mu, \sigma^2] \;\; = \;\; \frac{\sum_1^J 1 - 2\Phi((c_j - \mu)/\sigma) + 2\Phi((c_j - \mu)/\sigma)^2}{J} \qquad (A.3)$$

We are concerned with the *interaction* between the parameters $\mu$ and $\sigma$, and the effect that this interaction has on the expected level of voting cohesion. As there is no closed-form expression for equation A.3, I proceed by using computer simulations to investigate the relationship between $\mu_{pj}$, $\sigma_{pj}$, and $E[C_p]$. Each simulation represents a policy $j$, where the status quo is drawn randomly from a uniform distribution. For each status quo, I calculate the cohesion score (equation A.2) over a range of $\mu$ and $\sigma$ values, and then take the average score for each combination of $\mu$ and $\sigma$ across all simulations (as per equation A.3).[3] The righthand panel of figure A.1 presents the (smoothed) average level of cohesion for a party as it traverses the policy space for low and high values of $\sigma$. The lefthand panel gives the average cohesion level across the range of $\sigma$ for two hypothetical parties: one close to the median, and one further away.

The lefthand figure demonstrates that as $\mu$ approaches $x_m$ the voting cohesion of the party will decline, but that this decline is more pronounced for the more polarised (high $\sigma$) party. More importantly, the righthand panel of figure A.1 shows that while increasing $\sigma$ leads to a monotonic decrease in voting cohesion, the strength of this relationship is stronger the *closer* the party is to the position of the floor median. This implies that – in the absence of agenda control – it is when a party is close to the centre of the policy space that the party's cohesion level is *most* affected by the level of intra-party polarisation: the opposite prediction of a

---

[3]In particular, I draw 1000 values for $x_q$ from a uniform distribution on the range [-10,10]. I vary $\mu_{pj}$ from -9 to 9, and $\sigma_{pj}$ from 0.01 to 3.

**Figure A.1:** Voting cohesion as a function of party position and polarisation in the absence of agenda control (simulation)
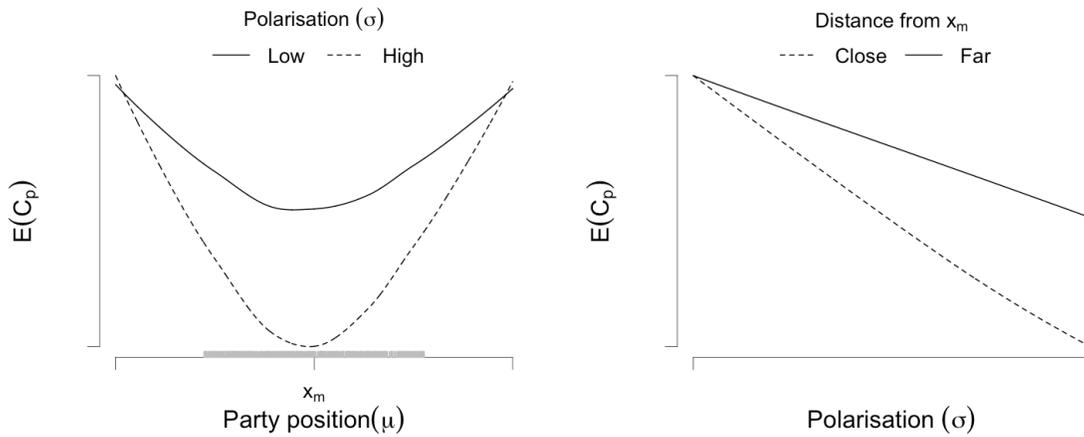


NOTE: The plot on the left shows the relationship between party position and voting cohesion across a set of simulated parliamentary votes. Status quo points are uniformly distributed on the range [-10,10], meaning that cutpoints are also uniformly distributed around the position of the median legislator (cutpoints are depicted as grey tick marks at the bottom of the figure). When the party is located closer to the centre of the policy space, the voting cohesion of the party declines, as the party will find itself divided more often. The righthand plot depicts the relationship between polarisation ($\sigma^2$) and cohesion. While increases in ideological polarisation lead to decreases in voting cohesion regardless of party position, the figure also demonstrates that, in the absence of agenda control, parties close to $x_m$ are particularly sensitive to polarisation.

model in which the party can control the legislative agenda (hypothesis 2 in the main text).

The intuition here is straightforward. In the absence of agenda-control, we should expect centrist parties to be on average more divided on roll-call votes than extremist parties, as their members find themselves on opposite sides of the (centrally distributed) cutting-lines more often. More importantly, the voting cohesion of centrist parties is greatly reduced by increased ideological polarisation, while for extremist parties the effects of polarisation on cohesion are less pronounced. When a party is central, increases in the ideological diversity of its members will result in more instances when members of the party find themselves on opposite sides of an issue. When a party is positioned at an extreme position in the policy space, polarisation is less consequential, as even relatively high levels of ideological difference between members may not translate into disunity in voting: the members of extremist parties are sufficiently far from the point separating 'yeas' from 'nays' that they will vote together despite their relative ideological differences.

This simple model, in which no agenda-setter is able to prevent some subset of $J$ from being considered, leads to the following expectations:

HYPOTHESIS 3 *As parties approach the median floor position of a given policy dimension, the voting cohesion of the party will decline*

HYPOTHESIS 4 *As the legislators of a party become ideologically more polarised on a given policy dimension, the voting cohesion of the party will decline.*

HYPOTHESIS 5 *The effect of ideological polarisation on voting cohesion will be stronger the closer a party is to the median position of a given policy dimension.*

Hypothesis 5 reveals that if EPG leaders hold the median position in the Conference of Presidents *but this position does not afford them agenda-control powers* then they will be *more* affected by increases in intra-party heterogeneity than when they hold non-centrist positions. This contrasts directly with hypothesis 2 in the main text, which suggests that when EPGs hold median positions, they will be able to block proposals that threaten to divide them, and therefore it is when they hold these positions that they will be *less* affected by increases in intra-party disagreement. In sum, this analysis reveals that hypothesis 2 therefore does indeed identify the effects of agenda control on voting cohesion in the European Parliament.

**Table A.2:** Median party group by expert survey policy dimension, EP6 & EP7

| Dimension | EP6 | EP7 |
|---|---|---|
| Collective Security | SOC | SOC |
| Decentralisation/Subsidiarity | EPP-ED | EPP-ED |
| Deregulation | EPP-ED | EPP-ED |
| Economic (Spending v. Taxes) | EPP-ED | EPP-ED |
| Environment | ALDE | ALDE |
| EU: Authority | EPP-ED | EPP-ED |
| Social | SOC | SOC |

```
TITLE: Prudential requirements for credit institutions and investment firms


PURPOSE: to strengthen prudential requirements for credit institutions and
investment firms that relate strictly to the functioning of banking and financial
services markets and are meant to ensure the financial stability of the operators on
these markets as well as a high level of protection of investors and depositors.
PROPOSED ACT: Regulation of the European Parliament and of the Council. BACKGROUND:
the extent of the financial crisis has exposed unacceptable risks pertaining to the
current regulation of financial institutions. According to IMF estimates,
crisis-related losses incurred by European credit institutions between 2007 and 2010
are close to 1 trillion or 8% of the EU GDP. In order to restore stability in the
banking sector and ensure that credit continues to flow to the real economy, both
the EU and its Member States adopted a broad range of unprecedented measures with
the taxpayer ultimately footing the related bill. In this context, by October 2010
the Commission has approved 4.6 trillion of state aid measures to financial
institutions of which more than 2 trillion were effectively used in 2008 and 2009.
The level of fiscal support provided to credit institutions needs to be matched with
a robust reform addressing the regulatory shortcomings exposed during the crisis.
Priorities and challenges: it should be noted that one of the priorities of the
Commission in the reform of EU financial services regulation has been to ensure that
the banking sector is able to fulfil its fundamental purpose, namely lending to the
real economy and providing services to citizens and businesses in Europe. The
proposal is designed to tackle regulatory shortcomings in the following areas:
Management of liquidity risk: existing liquidity risk management practices were
shown by the crisis to be inadequate in fully grasping risks linked to
originate-to-distribute securitization, use of complex financial instruments and
reliance on wholesale funding with short term maturity instruments. Definition of
capital: institutions entered the crisis with capital of insufficient quantity and
quality. Given the risks they faced, many institutions did not posses sufficient
amounts of the highest quality capital instruments that can absorb losses
effectively as they arise and help to preserve an institution as a going concern.
Counterparty credit risk: the crisis revealed a number of shortcomings in the
current regulatory treatment of counterparty credit risk arising from derivatives,
repo and securities financing activities. It showed that the existing provisions did
not ensure appropriate management and adequate capitalisation for this type of risk.
Options, discretions and harmonisation (entire Regulation): in 2000, seven banking
directives were replaced by a single Directive. This directive was recast in 2006
...
```

**Figure A.2:** Example legislative text summary

**Figure A.3:** Proportion of test set correctly predicted, by topic count
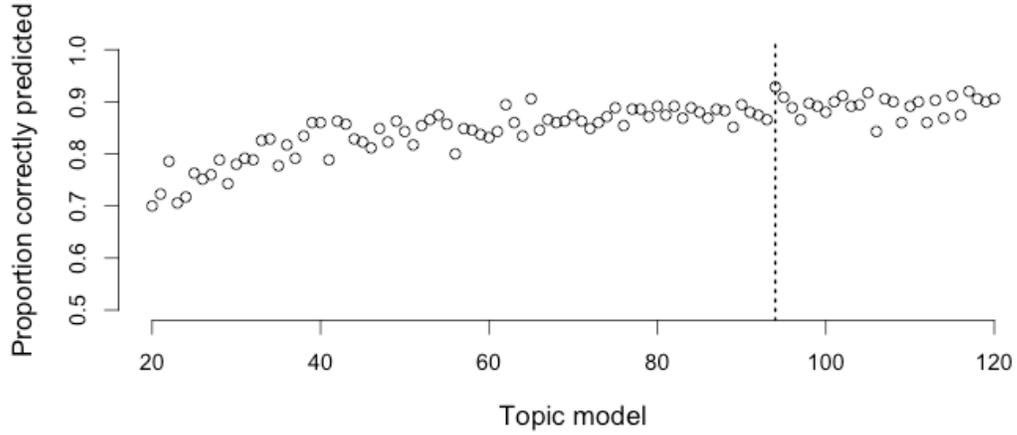


NOTE: The figure shows the proportion of the test set of legislative summaries that are correctly predicted by the multinomial model.

A.3  DISCRETE CLASSIFICATION METHOD

In this section I replicate the main 'blocking' results using a similar method of classification, with the nuance that here I assign proposals to the (single) policy dimension on which they have the highest probability from the penalised multinomial logistic model. Figure A.4 gives the results for all $K$ topic models, and table A.5 gives the results from the 94-topic model.

**Figure A.4:** $\beta_1$ estimates by topic model – discrete classification



**Base model**

**Full model**
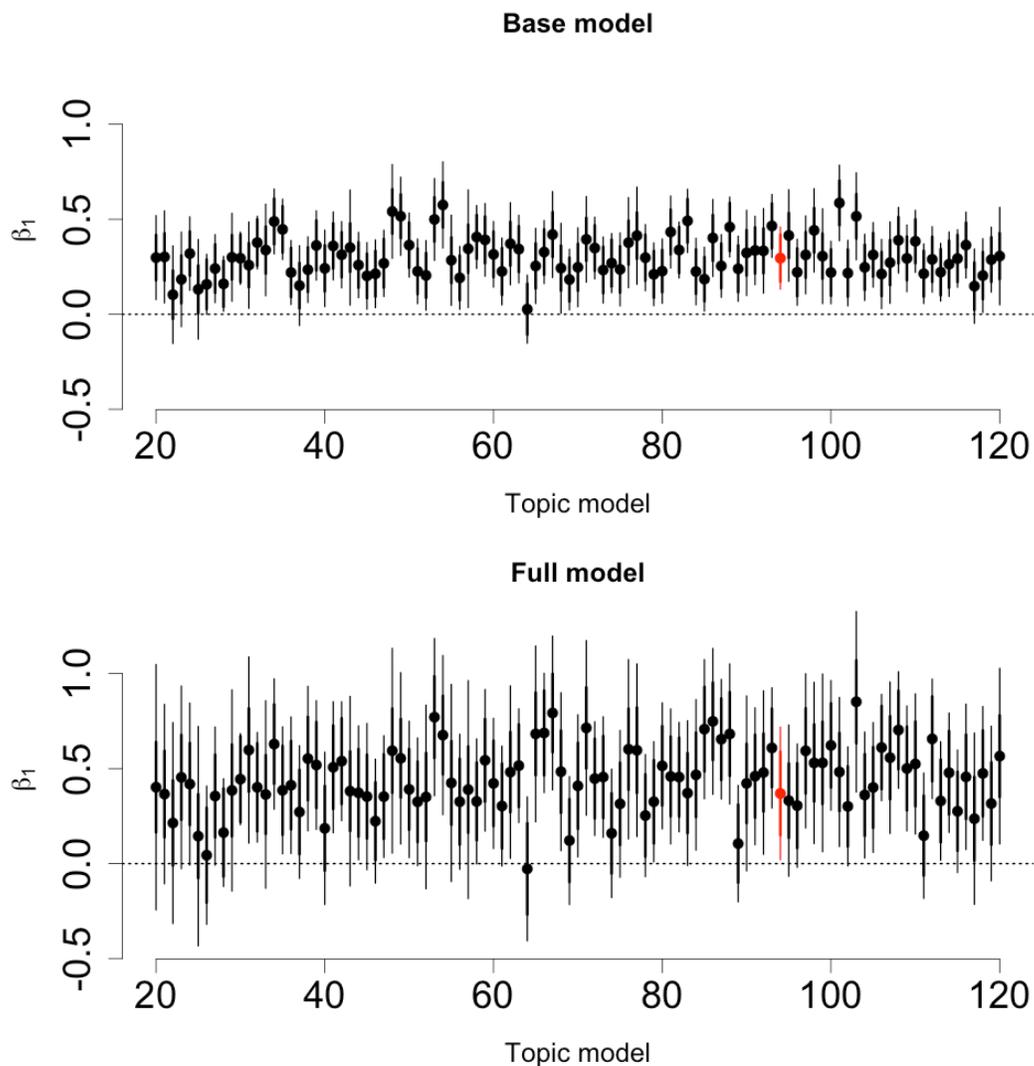
NOTE: The plot shows the estimated $\beta_1$ coefficient – which represents the effect of median EPG polarisation on the probability that a proposal will be blocked by the Conference of Presidents – for each of the $K$ topic models. The top panel gives the results of the baseline (covariate-free) models, and the bottom panel gives the estimated coefficients from the full models with fixed effects and covariates (model 4 in the regression tables). The cross-validation preferred model coefficient (corresponding to the results presented in table A.5) is presented in red.

| Deregulation | Economic | Environment | Immigration | Social | EU Authority | Security |
|---|---|---|---|---|---|---|
| deregulation | economic | environment | immigration | gender | eu authority | collective security |
| regulation | business | agriculture | asylum seeker | culture | integration | terrorism |
| state control | industry | farm | immigrant | education | supranational | nuclear non-proliferation |
| barriers | state ownership | climate | migrant | homosexuality | sovereignty | weapons of mass destruction |
| internal market | taxes | global warming | schengen | euthanasia | national parliament | external action service |
| market | public services | greenhouse | migration | social | internal regulations | eeas |
| | public spending | global temperature | external borders | abortion | devolution | eas |
| | spending | kyoto | asylum | | centralization | military |
| | partnership agreement | marine | | | administration | terrorist |
| | employment | vehicle | | | subsidiarity | common security and defence |
| | jobs | | | | proportionality | european security strategy |
| | growth | | | | constitution | human rights |
| | trade | | | | enlargement | foreign affairs |
| | tax | | | | Lisbon | |
| | | | | | law | |
| | | | | | court | |
| | | | | | legal | |
| | | | | | procedure | |
| | | | | | budget | |
| | | | | | instrument | |

**Table A.3:** Key words for text classification training data

**Table A.4:** Highest probability proposals, by expert survey dimension

| | Deregulation | Economic |
|---|---|---|
| 1 | Aromatised wines, aromatised wine-based drinks and aromatised wine-product cocktails: definition, description and presentation | Trade in raw materials and commodities |
| 2 | FLEGT licensing scheme for imports of timber into the EU: aligning the Regulation with the TFEU | Long-term sustainability of public finances for a recovering economy |
| 3 | Community control system for ensuring compliance with the rules of the Common Fisheries Policy: aligning the Regulation with the TFEU | Economic governance: implementation of the excessive deficit procedure. 'Six pack' |
| 4 | Aligning a number of legal acts with the TFEU: Commission delegated and implementing powers | 2006 annual report on the euro area |
| 5 | Denominations and technical specifications of euro coins intended for circulation. Recast | Trade and economic relations with the countries of South East Asia (ASEAN) |
| 6 | Glucose and lactose: customs treatment (repeal. Regulation (EEC) No 2730/75). Codified version | Economic governance: strengthening of budgetary positions and coordination of economic policies. 'Six pack' |

| | Environment | EU Authority |
|---|---|---|
| 1 | Fuels and energy from renewable sources: transition to biofuels to deliver greenhouse gas savings | Defence of parliamentary immunity of Umberto Bossi |
| 2 | Energy end-use efficiency and energy services | EP Rules of Procedure: final vote and voting in committee |
| 3 | Promotion of the use of energy from renewable sources | EP Rules of Procedure: proceedings before the ECJ |
| 4 | Roadmap for moving to a competitive low carbon economy | Request for waiver of the immunity of Antonio Di Pietro |
| 5 | Specification of petrol, diesel and gas-oil: "Fuel Quality Directive" | Request for defence of parliamentary immunity of Renato Brunetta |
| 6 | Emission performance standards for new light commercial vehicles | Car industry: location and identification of hand controls, tell-tales and indicators, UN/ECE Regulation |

| | Immigration | Security |
|---|---|---|
| 1 | Schengen Borders Code: use of the Visa Information System (VIS) at the external borders | New strategy for Afghanistan |
| 2 | External borders: residence permits issued by Switzerland and Liechtenstein as equivalent to national visas | Space and security |
| 3 | EC/Seychelles agreement: short-stay visa waiver | European Security Strategy |
| 4 | EC/Saint Kitts and Nevis agreement: short-stay visa waiver | Anti-missile shield for Europe and its political and strategic implications |
| 5 | EC/Ukraine agreement: facilitation of the issuance of visas | Implementation of the European Security Strategy and the Common Security and Defence Policy |
| 6 | EC/Mauritius agreement: short-stay visa waiver | EU comprehensive approach and its implications for the coherence of EU external action |

| | Social | |
|---|---|---|
| 1 | Impact of the crisis on access to care for vulnerable groups | |
| 2 | Gender aspects of the European framework of national Roma inclusion strategies | |
| 3 | How marketing and advertising affect equality between women and men | |
| 4 | Equality between women and men - 2008 | |
| 5 | Early years learning in the European Union | |
| 6 | Equality between women and men in the EU 2009 | |

**Table A.5:** Agenda-setter polarisation and legislative blocking – discrete classification

|  | | Blocked | | |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| Agenda-Setter Polarisation | 0.295*** | 0.244* | 0.357** | 0.420** |
|  | (0.084) | (0.137) | (0.169) | (0.199) |
| Agenda-Setter Distance |  | 0.018 | 0.041 | 0.030 |
|  |  | (0.073) | (0.079) | (0.083) |
| Parliament Polarisation |  | −0.060 | −0.043 | 0.216 |
|  |  | (0.191) | (0.203) | (0.200) |
| Salience |  | −0.085 | −0.383 | −0.310 |
|  |  | (0.096) | (0.235) | (0.288) |
| Distance from recess |  | 0.001 | 0.001 | 0.001 |
|  |  | (0.001) | (0.001) | (0.001) |
| # proposals |  | −0.003 | −0.003 | −0.004 |
|  |  | (0.007) | (0.007) | (0.007) |
| Constant | −2.167*** | −0.755 | 2.165 | 0.005 |
|  | (0.219) | (1.509) | (2.957) | (3.809) |
| Median Group FEs | × | × | ✓ | ✓ |
| Committee FEs | × | × | × | ✓ |
| Observations | 4,300 | 4,300 | 4,300 | 4,300 |
| Akaike Inf. Crit. | 4,058.429 | 3,976.077 | 3,964.982 | 3,929.701 |

NOTE: Logistic regressions with cluster robust standard errors (clustered by draft agenda) shown in parentheses. $^*$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01

**Table A.6:** Median party group polarisation and legislative blocking

|  | Blocked | | | |
|  | (1) | (2) | (3) | (4) |
| --- | --- | --- | --- | --- |
| Agenda-Setter Polarisation | 0.527*** | 0.579*** | 0.766*** | 0.716** |
|  | (0.123) | (0.200) | (0.238) | (0.281) |
| Agenda-Setter Distance |  | 0.379* | 0.462** | 0.381* |
|  |  | (0.195) | (0.202) | (0.214) |
| Parliament Polarisation |  | −1.260** | −1.771** | −0.975 |
|  |  | (0.606) | (0.704) | (0.768) |
| Salience |  | 0.202 | 0.079 | 0.072 |
|  |  | (0.149) | (0.232) | (0.278) |
| Distance from recess |  | 0.001 | 0.001 | 0.001 |
|  |  | (0.001) | (0.001) | (0.001) |
| # proposals |  | −0.002 | −0.002 | −0.003 |
|  |  | (0.007) | (0.007) | (0.007) |
| Constant | −2.699*** | −1.588 | 0.736 | −1.767 |
|  | (0.282) | (1.923) | (2.396) | (3.184) |
| Median Group FEs | × | × | ✓ | ✓ |
| Committee FEs | × | × | × | ✓ |
| Observations | 4,300 | 4,300 | 4,300 | 4,300 |
| Akaike Inf. Crit. | 4,042.809 | 3,946.850 | 3,933.339 | 3,915.512 |

NOTE: Logistic regressions with cluster robust standard errors (clustered by policy area) shown in parentheses. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

**Table A.7:** Agenda-setting party groups, polarisation, and cohesion – Hix et al. (2007) agreement score

|  | *Party group cohesion* | | | |
|---|---|---|---|---|
|  | (1) | (2) | (3) | (4) |
| Agenda-Setting | −0.015 | 0.023** | −0.034*** | 0.051*** |
|  | (0.010) | (0.010) | (0.010) | (0.013) |
| Polarization | −0.115*** | −0.094*** | −0.097*** | −0.107*** |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Interaction | 0.090*** | 0.081*** | 0.106*** | 0.041*** |
|  | (0.004) | (0.004) | (0.004) | (0.006) |
| Constant | 1.040*** | 0.755*** | 0.694*** | 0.848*** |
|  | (0.003) | (0.010) | (0.012) | (0.011) |
| Covariates | × | ✓ | ✓ | ✓ |
| Policy Area FEs | × | × | ✓ | ✓ |
| EPG FEs | × | × | × | ✓ |
| Observations | 95,643 | 88,973 | 88,973 | 88,973 |
| $R^2$ | 0.152 | 0.144 | 0.152 | 0.276 |

NOTE: The table shows the estimates of equation 2.2 when using the Hix, Noury and Roland (2007) measure of party cohesion, rather than the measure presented in Desposato (2005) which is used in the main analysis. As is clear from the table, results are not sensitive to this choice. OLS regressions with cluster robust standard errors (clustered by legislative proposal) shown in parentheses. *p<0.1; **p<0.05; ***p<0.01

# B

## B.1 Valence as a spatial policy dimension with universal agreement

Consider an $n$-dimensional model, where the utilities for legislator $i$, for the status quo ($q$) and a proposal ($p$), given positions $x$, and an idiosyncratic (legislator-specific) error term $e_i$, are:

$$u_{iq} = -(x_{i1} - x_{q1})^2 - (x_{i2} - x_{q2})^2 - \ldots - (x_{in} - x_{qn})^2 + e_{iq} \qquad \text{(B.1)}$$

$$u_{ip} = -(x_{i1} - x_{p1})^2 - (x_{i2} - x_{p2})^2 - \ldots - (x_{in} - x_{pn})^2 + e_{ip} \qquad \text{(B.2)}$$

To derive a valence dimension, we simply constrain all legislators to have the same ideal point on the $v$th dimension so that $x_{iv} = x_v \forall i$. As preferences on this dimension are identical, all legislators prefer policies that satisfy $x_v = x_{pv}$, all else equal. Our assumption is that during a crisis, $x_{qv}$ will diverge sharply from the shared preferences of legislators.We therefore define the valence of the proposal $p$, and the status quo $q$ as follows:

$$v_p = -(x_v - x_{pv})^2 = 0 \qquad \text{(B.3)}$$

$$v_q = \begin{cases} -(x_v - x_{qv})^2 = 0 & \text{absent a crisis} \qquad \text{(B.4)} \\ -(x_v - x_{qv})^2 < 0 & \text{during a crisis} \qquad \text{(B.5)} \end{cases}$$

A negative 'shock' to the valence of the status quo occurs when a crisis dramatically changes external conditions, shifting $x_{qv}$ away from $x_v$, and resulting in a smaller value of $v_q$. As legislators preferences over valence are identical, this formulation captures the central intuition: shocks to the valence dimension are painful for everyone. The crisis negatively affects legislators evaluations of the status quo, regardless of their ideological disagreements on other spatial dimensions.

The central intuition of our model – that agenda-setters have more discretion over policy outcomes during a crisis – holds when the policy space is uni-dimensional. Consider the one-dimensional case where there is no valence gap between the status quo and proposed alternatives, $v_q = v_p$ (top panel, figure B.1). The median voter, $m$, is decisive, and the spatial discrepancy between the status quo and her position is always influential in determining the size of the winset, $W(q)$. Policies ($p$) located within the winset will defeat the status quo ($q$) in an up-or-down vote, and policies located outside the winset will fail. As in the two-dimensional case, the choice of policies to be considered against $q$ is determined by the agenda-setter ($AS$), who makes a take-it-or-leave-it proposal that is as close as possible to her own ideal point, within the constraint that the policy will be approved by a majority vote (that is, within $W(q)$). Thus, when valence is equal, voting collapses to the normal spatial model, with the median voter separates those voting 'yea' from those voting 'nay'.

During a crisis, when $v_q < v_p$, the main implication of the decline in $v_q$ is identical to that of the two-dimensional model: legislators will vote to approve a wider range of policy proposals. Holding the proposed policy fixed at $p$ (middle panel, figure B.1), the valence shock increases the size of the winset, meaning that legislators in the shaded area of the 'yea' coalition vote to approve the proposal. These legislators, when valence is equal, vote against the proposal. As with the 2D model, the negative shock to $q$ implies that more policies are able to defeat $q$ in pairwise competition, and so in equilibrium, the agenda-setter will propose a policy that is closer to her own ideal point that will still win a majority of support. The agenda-setter proposes $p'$ instead of $p$ (bottom panel, figure B.1). As $p'$ is

supported by $m$, it is approved by the legislature, whereas in the equal valence scenario it would have been rejected.

This shows how the valence shock gives greater discretion to the agenda-setter. In the absence of a crisis (when $v_q = v_p$), the winset is determined by the spatial discrepancy between the status quo and the ideal point of the median legislator $x_m$. During a crisis (when $v_q < v_p$), the winset is determined by both the discrepancy between the status quo and the median, and also the valence differential between the status quo and the proposed policy alternative.

$$
W(q) = \begin{cases} x_q, 2x_m - x_q & \text{if } v_q = v_p \\ x_m - \sqrt{(x_m - x_q)^2 + (v_p - v_q)}, x_m + \sqrt{(x_m - x_q)^2 + (v_p - v_q)} & \text{if } v_q \neq v_p \end{cases}
$$

As in the 2D model, as $v_q$ declines, the winset grows, and the agenda-setter's discretion over policy outcomes increases. In short, the 1D model with a valence shock captures the same intuition as the 2D model: agenda-setters can exploit a crisis by trading off surplus legislative votes to achieve spatial outcomes that are closer to their own preferences.

However, the one-dimensional model illustrates an inferential problem for empirical analysis. While the size of the winset and the spatial position of the policy proposal changes between non-crisis (top panel) and crisis (bottom panel) periods, the most easily measurable quantity (the membership of the winning coalition) is identical in both periods. This is because the agenda-setter always proposes a policy that makes $m$ indifferent between $q$ and $p$, meaning that the 'yea' coalition will always consist of $m$ and those legislators who are located on the same side of $m$ as the agenda-setter. As status quo and policy positions are poorly identified

224

in standard roll-call voting models, if the model predicts the same crisis and non-crisis coalitions, the opportunities for validation are limited. It is for this reason that we devote most of our attention to the 2D model, and evaluate our theory in the two-dimensional setting of the European Parliament.

**Figure B.1:** Crises, legislative voting, and agenda-setting in one dimension
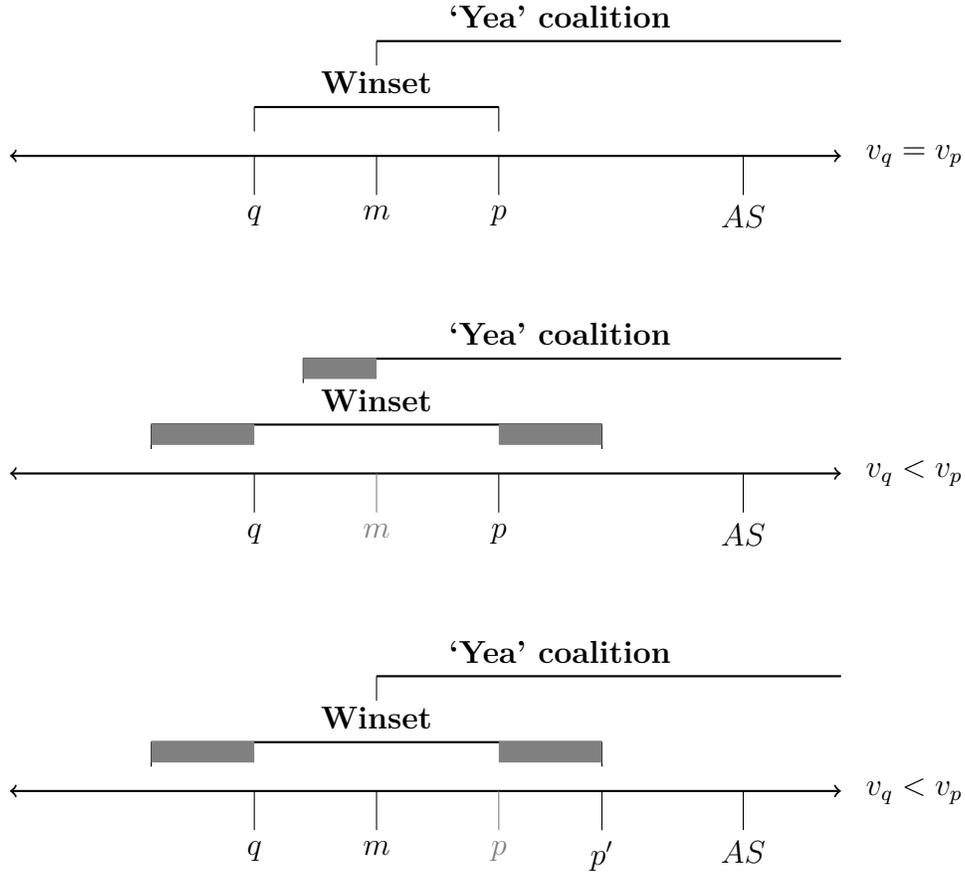


'Yea' coalition

Winset

$$v_q = v_p$$

$q \quad m \quad p \quad AS$

'Yea' coalition

Winset

$$v_q < v_p$$

$q \quad m \quad p \quad AS$

'Yea' coalition

Winset

$$v_q < v_p$$

$q \quad m \quad p \quad p' \quad AS$

NOTE: In the absence of a crisis (top panel), voting collapses to a simple spatial model, with legislators voting for the proposal $p$ if they are to the right of the median voter $m$, or against the proposal otherwise. If the status quo $q$ receives a negative valence shock, but the proposed policy is fixed at $p$ (middle panel), then legislators falling in the grey zone of the 'yea' coalition will vote for the policy, where previously they would have voted against. In equilibrium, however, such a situation should not emerge as the agenda-setter, $AS$, exploits the expanded winset to propose a policy at $p'$ (bottom panel), to secure an outcome that is closer to her ideal point. The agenda setter 'makes an opportunity out of the crisis' to obtain favourable policy outcomes. The median voter is indifferent when $v_q = v_p$ and the proposed policy is $p$, as well as when $v_q < v_p$ and the proposed policy is $p'$. This implies that, in one-dimension, the 'yea' coalition is identical in crisis and non-crisis periods.

226

The central implication of our model also holds, under many conditions, when we consider two other plausible mechanisms (within our general theoretical setting) through which crises might lead to legislative change. First, we consider a model in which crises cause *the status quo to shift* in the ideological space (as in Tsebelis (2002)). A second alternative model considers how *the preferences of legislators might shift* in response to a crisis. The figures below indicate how these alternative models would affect the predictions we make in the paper.

In the top panel of figure B.2 we consider a one-dimensional space under three different models of crisis:

- Preference-shift model: The crisis shifts the preferences of legislators, moving the median voter from $m$ to a position *closer to* the agenda-setter at $m'$.

- SQ-shift model: The crisis moves the status quo $q$ *away from* the position of $AS$ to $q'$

- Valence-shock model: The crisis causes a decline in the valence of the status quo $(v_q < v_p)$

For each model, we can evaluate the effect of the crisis by comparing the new winset with the "Original winset" that applies in non-crisis conditions. If the crisis moves the preferences of the legislative median toward the position of the agenda-setter $(m \rightarrow m')$, the preference-shift winset extends rightwards, and allows the agenda-setter the same discretion as in the valence-shock model, although in this case the winset expands asymmetrically. By contrast, if the status quo is shocked

away from the positions of the median and the agenda-setter ($q \rightarrow q'$), the SQ-shift winset expands symmetrically around $m$.

As is clear, under each of these models, the main qualitative predictions remain the same: the agenda-setter benefits from the crisis. Under each model, a crisis expands the size of the winset, making it possible for $AS$ to propose and pass policy at $p'$, where previously the best she could have achieved would have been at $p$. Although the implications of the three models are the same, the mechanisms are different. In the preference-shift and SQ-shift models, the agenda-setter is empowered because the median voter is ideologically more distant from the status quo, and will thus accept policy proposals that diverge further from her ideal point than in non-crisis conditions. In the valence-shock model, the median voter will also accept such deviations from her ideal point, but here the winset expands because the non-spatial utility she receives from the status quo decreases ($v_q < v_p$).

The top panel of figure B.2 also makes clear why it is difficult to empirically discriminate between these alternative mechanisms: in all three, the crisis-winset gives the same degree of discretion to the agenda-setter, and therefore results in the same proposal ($p'$) from the agenda-setter. However, the main point revealed by this analysis is that, under a broad set of conditions, the central implication of our (preferred) valence-shock model – that agenda-setting actors benefit from crises – is robust to alternative conceptualisations of crisis politics.

However, in certain scenarios (second panel of figure B.2), the predictions of these alternative models differ with regard to the discretion of the agenda-setter during a crisis period. Consider the following scenarios:

- Preference-shift model: The crisis shifts the median voter from $m$ to a position *further away* from the agenda-setter at $m'$.

228

- SQ-shift model: The crisis moves the status quo $q$ *toward* the position of *AS* to $q'$

- Valence-shock model: The crisis causes a decline in the valence of the status quo $(v_q < v_p)$

When the median voter moves *away* from the agenda-setter to $m'$, the winset contracts, giving the agenda-setter *less* discretion than in the pre-crisis period. This is because the median voter is now closer to the position of the status quo. Similarly, if the status quo receives a spatial shock such that it shifts *toward* the position of the median voter, from $q$ to $q'$, the winset also contracts around $m$. Thus, as the second panel demonstrates, if a crisis results in a convergence of the preferences of the median voter and the position of the status quo, the discretion of the agenda-setter would *decrease* during the crisis. This is because the decisive voter prefers the crisis-status quo to the non-crisis status quo, and therefore is less willing to accept deviations from her ideal than she would have been previously. In these scenarios, then, the models offer implications that are qualitatively different from those of the valence-shock model.

Motivating the types of movement that would lead to such restrictions of the winset is difficult, as doing so implies that some legislative actors *prefer* the crisis-stricken status quo policies. Nonetheless, the second panel makes clear the salient differences between our preferred model, and the alternatives: the valence-shock model suggests an unambiguous increase in agenda-setter discretion during a crisis, while the alternative models suggest that the discretion of the agenda-setter increases only under certain conditions.

We prefer the valence-shock model for a number of reasons. First, we think it is more intuitive to think of political crises as non-spatial shocks, rather than

shifts in the ideological position of the status quo. A crisis entails a sudden change to the external conditions in which existing policies operate, rather than an exogenous change to the policies themselves. Accordingly, conceptualising a crisis as an exogenous shift in the position of the status quo does not fit well with our intuitive notion of what a crisis is. While a spatial shock to the status quo would imply that some actors *prefer* a crisis, the non-spatial model we prefer implies that crisis are bad *for all actors*.

Second, while our model holds (spatial) preferences fixed, it is certainly plausible that legislatures update their policy preferences in light of new evidence, and that crises would play an important role in this process. However, the preference-shift model is not entirely contradictory with our account. One way of understanding the static preferences that we assume in the valence-shock model is to consider the legislators spatial preferences as their long-term ideological beliefs, and the valence component of their utilities as their short-term analyses of current conditions. We think that this is a reasonable approximation of the way that legislators consider policy: longstanding ideological dispositions underpin and guide short-run responses to change.

Note that, in many circumstances, it is not necessary to accept the 'valence-shock' aspect of our argument in order to accept that crises empower agenda-setters. Our main contention is that exogenous shocks will empower agenda-setters and enable them to pass policy that would otherwise have failed to win support. The alternative models discussed here do not contradict this basic argument, but rather imply different *mechanisms* by which agenda-setters are empowered. Agenda-setter discretion will increase when a crisis moves either the status quo or legislative preferences in certain directions. Our mechanism gives a more unambiguous benefit to agenda-setters during crisis periods than the alternatives.

Nevertheless, the differences between these alternative models should not be over-stated, as, in general, all three arguments lead to the same substantive conclusion: in a variety of circumstances, agenda-setters are likely to gain legislative discretion after the onset of a crisis.

**Figure B.2:** Alternative models



**Original winset**

**Preference-shift winset** $(m \to m')$

**SQ-shift winset** $(q \to q')$

**Valence-shock winset** $(v_q < v_p)$

$q' \quad q \quad m \quad m' \quad p \quad p' \quad AS$

(1)

**Original winset**

**Preference-shift winset** $(m \to m')$

**SQ-shift winset** $(q \to q')$

**Valence-shock winset** $(v_q < v_p)$

$q \quad m' \quad m \quad p \quad p' \quad AS$

$q'$

(2)
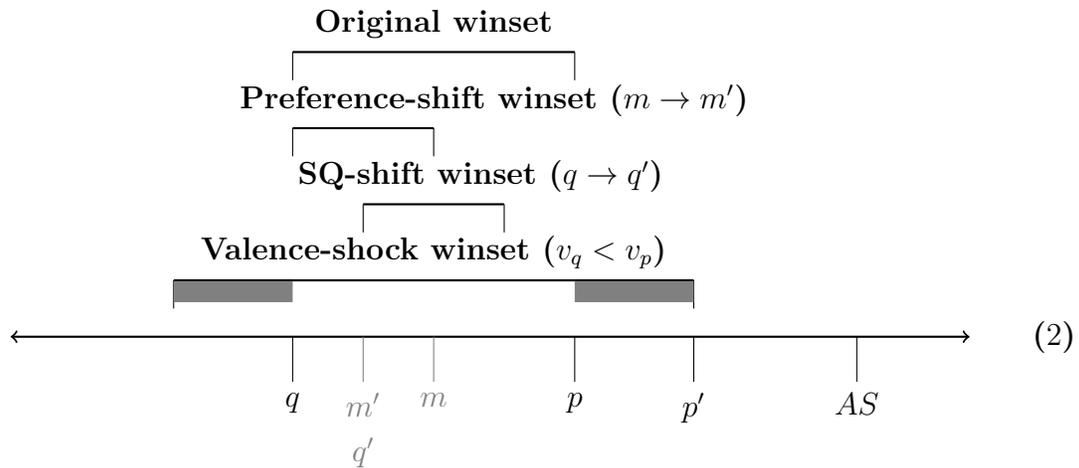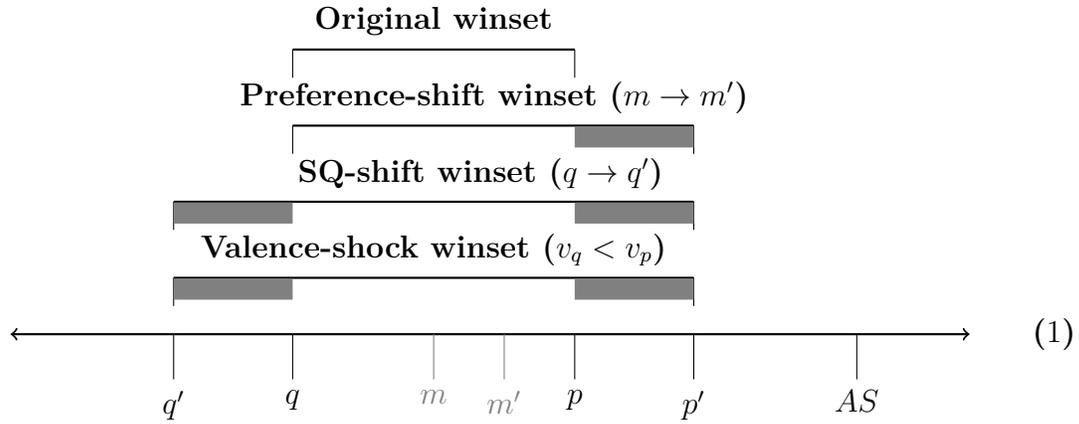
NOTE: The figure indicates that the different models often result in equivalent implications for agenda-setter discretion during crisis periods. In the first panel, all three models result in greater policy discretion for the agenda-setter $(AS)$ in the crisis period. All three models allow the agenda-setter to propose and pass $p'$, where she would only have been able to achieve $p$ previously. In the second panel, the three models lead to different implications for agenda-setter discretion. If preferences shift away from the agenda-setter, moving the median voter from $m$ to $m'$, then the winset of the status quo becomes smaller, giving the agenda-setter less discretion. If, rather, the status quo moves toward the position of the median $m$, the winset likewise shrinks, again restricting the ability of $AS$ to secure favourable policy outcomes. In the second panel, it is only the valence shock that gives $AS$ additional legislative discretion.

232

## B.4 Cutting angle derivation

We can formally derive the connection between integrationist policy proposals and the angle of the cutting line between voting coalitions. For each legislator $i$, the utility difference between the status quo and the alternative is:

$$
\begin{aligned}
u_p - u_q \;=\; & (v_p - v_q) + (e_{ip} - e_{iq}) - \left(x_{p1}^2 - x_{q1}^2\right) - \left(x_{p2}^2 - x_{q2}^2\right) \qquad \text{(B.6)} \\
& + x_{i1}(2x_{p1} - 2x_{q1}) \\
& + x_{i2}(2x_{p2} - 2x_{q2})
\end{aligned}
$$

It is not possible to identify the effect of the crisis directly, because the valence gap $(v_p - v_q)$ is just one of a set of linearly additive, vote-specific terms in the model. If we redefine the parameters of the model in terms of identifiable quantities:

$$
\begin{aligned}
\beta_{j0} \;&=\; (v_p - v_q) - \left(x_{p1}^2 - x_{q1}^2\right) - \left(x_{p2}^2 - x_{q2}^2\right) && \text{(B.7)} \\
\beta_{j1} \;&=\; (2x_{p1} - 2x_{q1}) && \text{(B.8)} \\
\beta_{j2} \;&=\; (2x_{p2} - 2x_{q2}) && \text{(B.9)} \\
\epsilon_{ij} \;&=\; (e_{ip} - e_{iq}) && \text{(B.10)}
\end{aligned}
$$

this gives us a model of the form:

$$
u_p - u_q \;=\; \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \epsilon_{ij} \qquad \text{(B.11)}
$$

which is a standard 2D random utility model for voting (Jackman, 2001).

While we cannot identify the proposal and status quo locations or the valence gap, the definitions of $\beta_{j1}$ and $\beta_{j2}$ reveal why the cutting-line orientation is rel-

evant. These are, respectively, two times the gap between the proposal and the status quo in dimensions one and two. Therefore, if the $\beta_{j2}$, corresponding to the integration dimension, get larger relative to the $\beta_{j1}$, that indicates that policy proposals are shifting more towards integration than was previously the case. The connection to the cutting-line orientation can be seen by solving for the set of positions that yield zero utility difference (assuming $\epsilon_{ij} = 0$):

$$0 = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} \tag{B.12}$$

$$\beta_2 x_{i2} = -\beta_0 - \beta_1 x_{i1} \tag{B.13}$$

$$x_{i2} = -\frac{\beta_0}{\beta_2} - \frac{\beta_1}{\beta_2} x_{i1} \tag{B.14}$$

That is, the cutting-line has an intercept on the second dimension ($x_{i2}$) at $-\frac{\beta_0}{\beta_2}$, and more relevantly, a slope of $-\frac{\beta_1}{\beta_2}$. When proposed policy is more integrationist, we will observe cutting-lines with a different angle than when a proposal mainly operates on the first dimension. This cutting angle $\varphi_j$ is related to the $\beta$ parameters:

$$\varphi_j = -\arctan\left(-\frac{\beta_{j1}}{\beta_{j2}}\right) \tag{B.15}$$

We define this cutting angle over an arc of $2\pi$ in order to distinguish between parallel cutting lines with yea coalitions on opposing sides. A pro integration coalition on the yes side of the vote corresponds to $\varphi_j = 0$. A right coalition on the yes side of the vote corresponds to $\varphi_j = \pi/2$ A left coalition on the yes side of the vote corresponds to $\varphi_j = -\pi/2$. An anti-coalition on the yes side of

the vote corresponds to $\varphi_j = -\pi$ or $\varphi_j = \pi$, the scale wrapping around from a slightly left-leaning anti-integration coalition at $\varphi_j = -\pi + \epsilon$ shifts into a slightly right-leaning anti-integration coalition at $\varphi_j = \pi - \epsilon$. We depict these example cutting lines in figure B.3.

## B.5 MAAD DEPICTION

Figure B.3 gives a graphical depiction of different values for $\varphi$ (the angle of the cutting line). In the top-left quadrant, when $\varphi = 0$, the coalition of yes voters is pro-integration. The top-right and bottom-left quadrants demonstrate the necessity for the definition of $\varphi$ over an arc of $2\pi$. In both cases, the cutting-line is vertical, separating left-wing from right-wing voters, but when $\varphi = \pi/2$, the right-wing voters are voting for the vote, and the left-wing voters are voting against. By contrast, when $\varphi = -\pi/2$, it is the left coalition that is on the yes side of the vote. The final quadrant shows the cutting-line (with $\varphi = \pi/4$) where the yes coalition is pro-integration but right-leaning.

### B.6 Constructing a synthetic control group

This section outlines our approach for synthesising a plausible control group for the crisis-related votes in EP7 (the crisis period) using the legislative summaries of votes held in EP6 (the non-crisis period).

We start by applying a series of unsupervised topic models to all legislative summaries in our data. We use the Correlated Topic Model (CTM) as introduced by Blei and Lafferty (2006) and implemented as the null model for the Structural Topic Model (Roberts et al., 2014). The CTM is similar to Latent Dirichlet Allocation (LDA), but allows for a covariance structure between topics, and has been shown to have greater predictive accuracy than LDA (Blei and Lafferty, 2006). The crucial assumption behind this model, as with all topic models, is that the relative frequency with which terms co-occur within different documents gives information about the topics that feature in those documents. The two main inputs into the model are a user-specified number of topics, $T$, and the unordered word tokens within each document.

The key quantity of interest recovered from the STM is $\theta$, which is a $J$ x $D$ matrix of topic proportions that describe the fraction of each legislative summary $d \in \{1, 2, ..., D\}$ that is from each topic $t \in \{1, 2, ..., T\}$. Choosing the appropriate number of topics is a common problem in topic models, and typical solutions (e.g. Blei, Ng and Jordan (2003)) aim to find the model that best predicts held-out textual data. In our case, we are not interested in predicting *text* data out of sample, but rather in predicting our manual classification of 'crisis-relevant' votes ($j \in \{1, 2, ..., J\}$). Because the number of topics that will do this best is unclear *a priori*, we estimate topic models for all $K = 98$ integer topic counts from 3 to 100. This results in 98 separate $\theta_k$ matrices, with typical elements $\theta_{td(k)}$: the

proportion of vote-text $d$ in topic $t$ from topic-model $k$.

We then use each $\theta_k$ matrix as the model matrix[1] for a linear regression predicting $Y_{jd}$, the manual binary coding of crisis-relevance for vote $j$ in text $d$.[2] We repeat this exercise $K$ times, once for each topic model.

$$\mathbb{E}[Y_{j(d)}|\theta_k] = \pi_{j(kd)} = b_{k1}\theta_{k1d} + b_{k2}\theta_{k2d} + ... + b_{kT}\theta_{kTd} + \epsilon_{jd} \qquad (B.16)$$

We then use the estimated $b$ coefficients to calculate fitted values for all votes in EP6 and EP7:

$$\hat{\pi}_{j(kd)} = \hat{b}_{k1}\theta_{k1d} + \hat{b}_{k2}\theta_{k2d} + ... + \hat{b}_{kTd} \qquad (B.17)$$

where $\hat{\pi}_{j(kd)}$ is the probability that vote $j$ is crisis-relevant, given the topic mixture matrix $\theta_k$.

Finally, to evaluate whether there is evidence of the predicted change between EP6 and EP7, we use the estimated 'crisis-relevant' probabilities $\hat{\pi}_{j(kd)}$, as an explanatory variable in second-stage linear regression models of the following form:

$$|\varphi_j| = \alpha_k + \beta_{k1} \cdot EP7_j + \beta_{k2} \cdot \hat{\pi}_{j(kd)} + \beta_{k3} \cdot (EP7_j \cdot \hat{\pi}_{j(kd)}) + \epsilon_{jd} \qquad (B.18)$$

where $\varphi_j$ is the angle of the cutting line and $EP7$ is an indicator variable for whether the vote was taken during the seventh European Parliament (i.e. during

---

[1]Because the topic proportions for each vote $(\theta_{td(k)})$ sum to one, we could exclude one of the topics or the intercept term. The two approaches give identical fitted-values, and we choose to exclude the intercept term.

[2]Our approach is analogous to a two-stage-least-squares regression, where the topic weights are 'instruments' and the 'treatment' variable is whether a vote is crisis-relevant or not. As such, we follow the advice of Angrist and Pischke (Angrist and Pischke, 2009, 190) and use a linear model for the first stage even though the 'treatment' variable is dichotomous.

the crisis). Because we are using fitted values for whether the vote was crisis-related, the coefficients remain estimators of the difference between the MAAD of crisis-related ($\hat{\pi} = 1$) and non-crisis-related ($\hat{\pi} = 0$) votes. Our primary quantity of interest is then the estimated $\hat{\beta}_{k3}$ coefficient. This is the interaction between the probability of a vote being crisis-relevant, and that vote being held during the crisis. The theoretical model implies that the interaction coefficient should have a negative sign, implying that crisis-relevant votes in EP7 were marked by increasingly pro-versus-anti integration coalitions, rather than left-versus-right coalitions, relative to non-crisis-relevant votes.
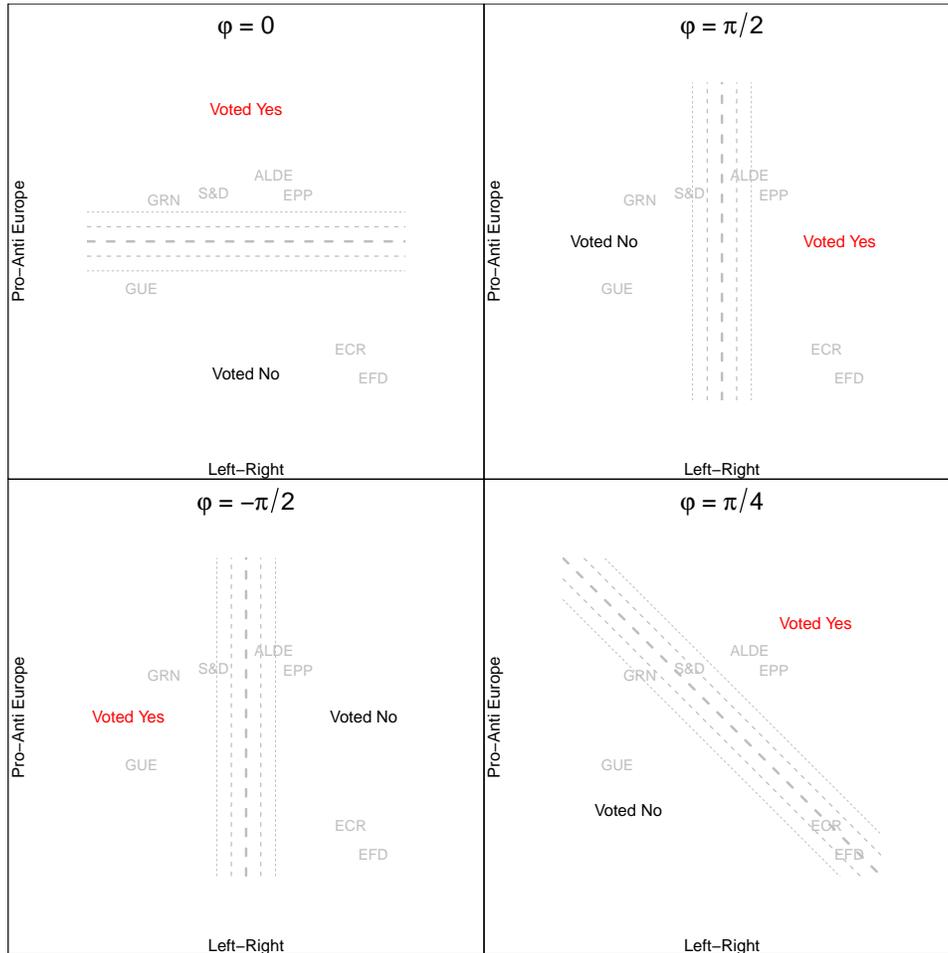
**Figure B.3:** Examples of $\varphi$

NOTE: The figure illustrates the voting coalitions for different values of $\varphi$. The model we present predicts that more votes will result in a situation similar to the top-left quadrant, where $\varphi = 0$ and the coalition is pro-integration, in the post-crisis period.

```
TITLE: Prudential requirements for credit institutions and investment firms


PURPOSE: to strengthen prudential requirements for credit institutions and
investment firms that relate strictly to the functioning of banking and financial
services markets and are meant to ensure the financial stability of the operators on
these markets as well as a high level of protection of investors and depositors.
PROPOSED ACT: Regulation of the European Parliament and of the Council. BACKGROUND:
the extent of the financial crisis has exposed unacceptable risks pertaining to the
current regulation of financial institutions. According to IMF estimates,
crisis-related losses incurred by European credit institutions between 2007 and 2010
are close to 1 trillion or 8% of the EU GDP. In order to restore stability in the
banking sector and ensure that credit continues to flow to the real economy, both
the EU and its Member States adopted a broad range of unprecedented measures with
the taxpayer ultimately footing the related bill. In this context, by October 2010
the Commission has approved 4.6 trillion of state aid measures to financial
institutions of which more than 2 trillion were effectively used in 2008 and 2009.
The level of fiscal support provided to credit institutions needs to be matched with
a robust reform addressing the regulatory shortcomings exposed during the crisis.
Priorities and challenges: it should be noted that one of the priorities of the
Commission in the reform of EU financial services regulation has been to ensure that
the banking sector is able to fulfil its fundamental purpose, namely lending to the
real economy and providing services to citizens and businesses in Europe. The
proposal is designed to tackle regulatory shortcomings in the following areas:
Management of liquidity risk: existing liquidity risk management practices were
shown by the crisis to be inadequate in fully grasping risks linked to
originate-to-distribute securitization, use of complex financial instruments and
reliance on wholesale funding with short term maturity instruments. Definition of
capital: institutions entered the crisis with capital of insufficient quantity and
quality. Given the risks they faced, many institutions did not posses sufficient
amounts of the highest quality capital instruments that can absorb losses
effectively as they arise and help to preserve an institution as a going concern.
Counterparty credit risk: the crisis revealed a number of shortcomings in the
current regulatory treatment of counterparty credit risk arising from derivatives,
repo and securities financing activities. It showed that the existing provisions did
not ensure appropriate management and adequate capitalisation for this type of risk.
Options, discretions and harmonisation (entire Regulation): in 2000, seven banking
directives were replaced by a single Directive. This directive was recast in 2006
...
```

**Figure B.4:** Example legislative text summary
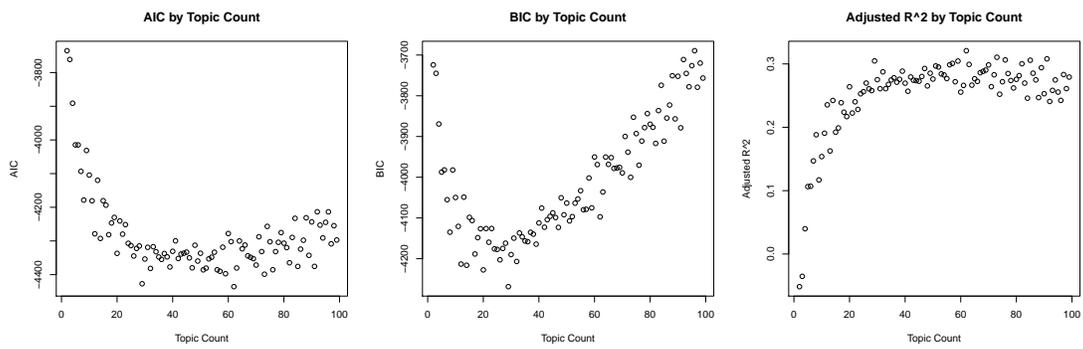
**Figure B.5:** Fit statistics for first stage regression model

**Table B.1:** Top 'fitted values' votes - 61 topics

|    | EP6 vote titles | EP7 vote titles |
|----|-----------------|-----------------|
| 1  | Facing oil challenges | State aid to facilitate the closure of uncompetitive coal mines |
| 2  | Euro zone enlargement | Economic governance: strengthening of surveillance of budgetary positions and coordination of economic policies & 'Six pack' |
| 3  | Resolution on the input to the Spring 2009 European Council in relation to the Lisbon Strategy | Long-term sustainability of public finances for a recovering economy |
| 4  | 2006 annual report on the euro area | Macro-financial assistance to Bosnia and Herzegovina |
| 5  | Fishing industry: improving the economic situation | Economic governance: implementation of the excessive deficit procedure. 'Six pack' |
| 6  | Strengthening of surveillance of budgetary positions and surveillance and coordination of economic policies | ECB annual report for 2010 |
| 7  | ECB annual report for 2004 | Macro-financial assistance to Serbia |
| 8  | Relocation and regional development | ECB annual report for 2011 |
| 9  | Social reality stocktaking | Feasibility of introducing stability bonds |
| 10 | Macro-economic impact of the increase in the price of energy | Macro-financial assistance to Georgia |
| 11 | Employment and productivity and their contribution to economic growth | Economic governance: enforcement of budgetary surveillance in the euro area. 'Six pack' |
| 12 | Fisheries sector: restructuring of the EU fishing fleets affected by the economic crisis | Macro-financial assistance to Armenia |
| 13 | Restructuring and employment | Economic governance: strengthening of economic and budgetary surveillance of Member States experiencing or threatened with serious difficulties with respect to their financial stability in the euro area. 'Two pack' |
| 14 | Deterioration of the situation in Georgia | Improving the economic governance and stability framework of the Union, in particular in the euro area |
| 15 | Resolution on the preparation of the EU-India Summit (Marseille, 29 September 2008) | External Borders Fund: increasing the Union co-financing rate |
| 16 | Resolution on combating the rise of extremism in Europe | Resolution on the feasibility of introducing stability bonds |
| 17 | Resolution on the situation in the Republic of Moldova | European semester for economic policy coordination |
| 18 | Resolution on combating cancer in the EU | Macro-financial assistance to Ukraine |
| 19 | Report on the ECB annual report for 2007 | European Globalisation Adjustment Fund: redundancies in textiles and computer manufacturing |
| 20 | Resolution on the situation in Burma | Agricultural Fund for Rural Development (EAFRD): increased contribution rates for certain Member States |

243

# C

Figure C.1 depicts the gender-gap in debate participation in the House of Commons from 1997 to 2015 by measuring the 'female speech ratio' in each calendar month. The ratio is defined as the proportion of words spoken by women in a given month, divided by the proportion of women in parliament in that month. When the ratio is equal to one (horizontal black lines) the proportion of words spoken by women is equal to the proportion of seats held by women.

As is clear from the plot, for the majority of the time period analysed, women speak systematically less than their proportion in parliament would suggest. Averaging across the entire period, the mean female speech ratio for these three parties is 0.78, implying that women contribute a significantly smaller proportion of words to legislative debate than the proportion of seats they hold in parliament. This different is apparent even when controlling for party: female legislators from the Labour, Conservative, and Liberal Democrat parties all speak less than their male counterparts. Overall, it is clear that in addition to being under-represented numerically in terms of the number of seats they hold in parliament, (in the period studied, women never account for more than 23% of MPs) women are also significantly under-represented in policy debates on the House floor.

**Figure C.1:** Female legislators are under-represented in parliamentary debate.
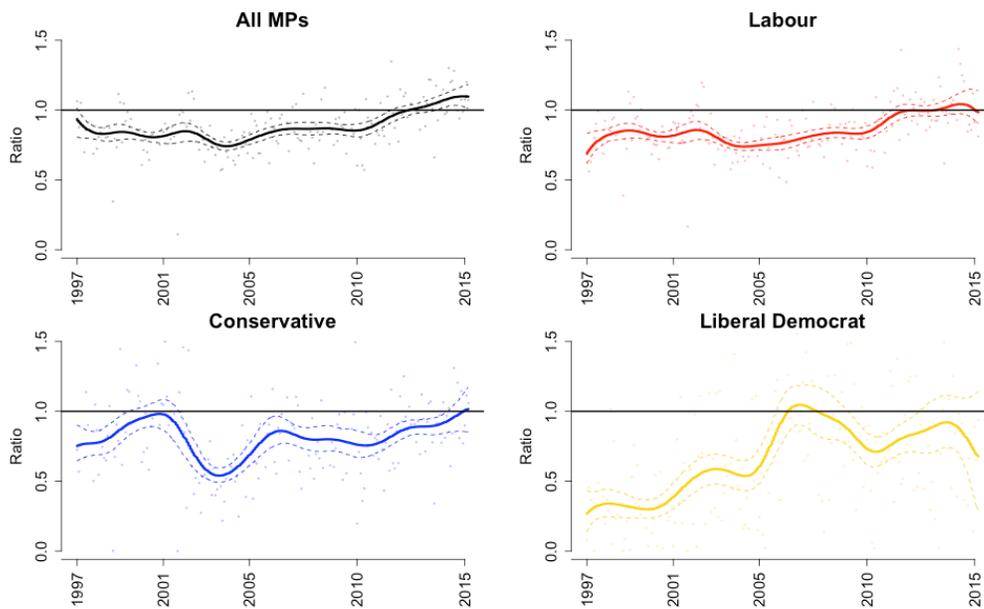


NOTE: The plot shows the ratio of words spoken by female MPs in a calendar month, based on 17,749 debates from 1997 to 2015. The smoothed lines are loess regressions and the dashed lines indicate 95% bootstrapped confidence intervals. The horizontal black lines indicate the expected level of speech when female MPs' contributions to plenary debate are equal to their representation in the House.

**Figure C.2:** Female speech ratio, by ministry
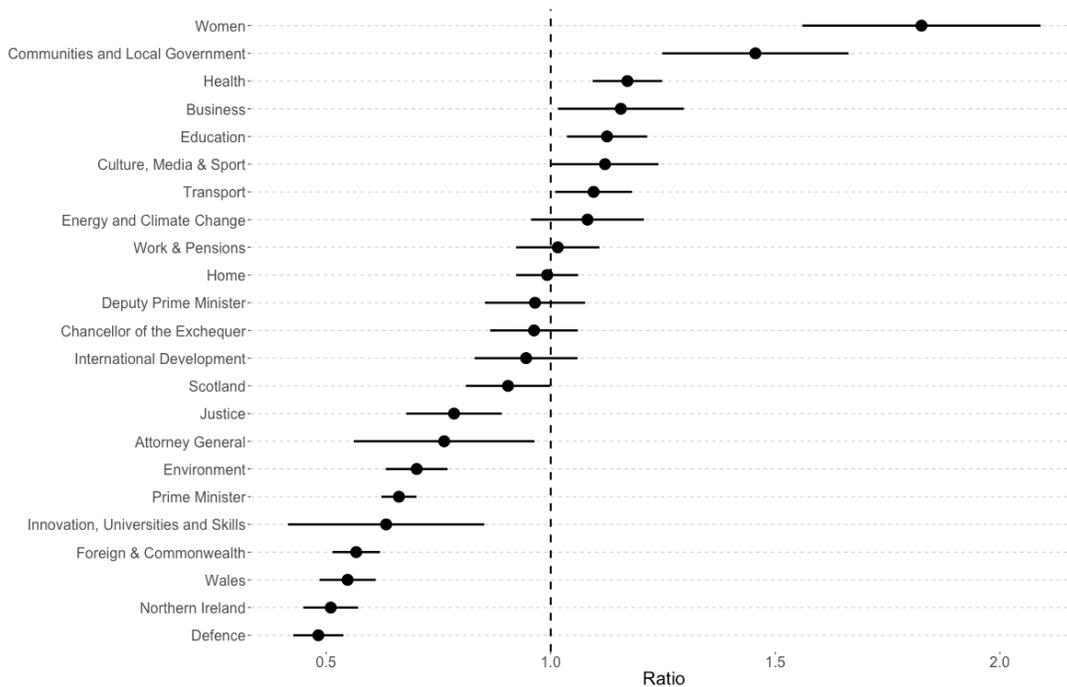


NOTE: The figure shows the average female speech ratio as defined in equation C.1 for each ministry, pooled across all months in the data. It is clear from the figure that some ministries are subject to greater levels of female participation than others.

## C.2 Alternative dependent variables

Equations C.1, C.2, and C.3 provide alternative definitions of the dependent variable in equation 4.2. Results for the main fixed-effects models using these alternative operationalisations are presented in tables C.1, C.2, and C.3 below. Regardless which of these measures is used, the main results hold: the appointment of a female minister leads to an increase in the level of participation in parliamentary debates by female MPs.

$$RatioWordsWomen_{dmt} = \frac{PropWordsWomen_{dmt}}{\text{Proportion of women in parliament}_t} \quad \text{(C.1)}$$

$$PropSpeechesWomen_{dmt} = \frac{\text{\# speeches by women}_{dmt}}{\text{\# speeches by men and women}_{dmt}} \quad \text{(C.2)}$$

$$RatioSpeechesWomen_{dmt} = \frac{PropSpeechesWomen_{dmt}}{\text{Proportion of women in parliament}_t} \quad \text{(C.3)}$$

**Table C.1:** Effect of appointing of a female minister on female speech (ratio of words)

|  | | | | *Ratio Words Women* | | | |
|---|---|---|---|---|---|---|---|
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Female minister | 0.454*** | 0.467*** | 0.268*** | 0.278** | 0.250** | 0.310*** | 0.214*** |
|  | (0.137) | (0.141) | (0.104) | (0.124) | (0.125) | (0.117) | (0.055) |
| Constant | 0.813*** | 0.736*** | 0.763*** | 0.629*** | 0.201 | −0.665 | 1.019** |
|  | (0.052) | (0.141) | (0.150) | (0.188) | (0.613) | (1.152) | (0.518) |
| Month FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Ministry FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Effect Size % | 56 | 57 | 33 | 34 | 31 | 38 | 26 |
| 95% CI | [23,89] | [23,92] | [8,58] | [4,64] | [1,61] | [10,66] | [13,39] |
| Observations | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 |
| $R^2$ | 0.046 | 0.080 | 0.140 | 0.174 | 0.193 | 0.207 | 0.217 |
| Adjusted $R^2$ | 0.046 | 0.048 | 0.136 | 0.141 | 0.157 | 0.169 | 0.217 |

NOTE: Models 1-6 represent OLS fixed-effect regressions for the period 1997-2015. Regression coefficients are shown with bootstrapped robust standard errors (clustered by ministry) shown in parentheses. The outcome variable is *Ratio Words Women* as defined in equation C.1, and the independent variable is "Female minister" as defined in equation 4.1. The baseline corresponds to debates held under a male cabinet minister. Model 4 corresponds to equation 4.3, and models 5 and 6 include linear and quadratic ministry-specific time trends in addition to ministry fixed-effects and month fixed-effects. Model 7 is a GAM model including non-parametric, ministry-specific, flexible time trends. The "Effect Size" row indicates the percentage increase in female participation relative to the average female participation rate under male ministers. *p<0.1; **p<0.05; ***p<0.01

**Table C.2:** Effect of the appointment of a female minister on female participation (proportion of speeches)

| | | | *PropSpeechesWomen* | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Female minister | 0.069*** | 0.071*** | 0.041** | 0.041** | 0.034* | 0.045** | 0.035*** |
| | (0.022) | (0.024) | (0.017) | (0.020) | (0.020) | (0.019) | (0.009) |
| Constant | 0.167*** | 0.138*** | 0.153*** | 0.104*** | 0.025 | −0.014 | 0.154*** |
| | (0.009) | (0.024) | (0.026) | (0.037) | (0.110) | (0.224) | (0.036) |
| Month FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Ministry FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Effect Size % | 41 | 42 | 25 | 24 | 20 | 27 | 21 |
| 95% CI | [16,67] | [15,70] | [5,44] | [1,48] | [-3,44] | [5,49] | [11,32] |
| Observations | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 |
| R² | 0.035 | 0.079 | 0.125 | 0.167 | 0.187 | 0.202 | 0.201 |
| Adjusted R² | 0.035 | 0.047 | 0.121 | 0.134 | 0.151 | 0.164 | 0.201 |

*Note:* Models 1-6 represent OLS fixed-effect regressions for the period 1997-2015. Regression coefficients are shown with bootstrapped robust standard errors (clustered by ministry) shown in parentheses. The outcome variable is *PropWomenSpeeches* as defined in equation C.2, and the independent variable is "Female minister" as defined in equation 4.1. The baseline corresponds to debates held under a male cabinet minister. Model 4 corresponds to equation 4.3, and models 5 and 6 include linear and quadratic ministry-specific time trends in addition to ministry fixed-effects and month fixed-effects. Model 7 is a GAM model including non-parametric, ministry-specific, flexible time trends. The "Effect Size" row indicates the percentage increase in female participation relative to the average female participation rate under male ministers. *p<0.1; **p<0.05; ***p<0.01

249

**Table C.3:** Effect of the appointment of a female minister on female participation (ratio of speeches)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | | | | *RatioSpeechesWomen* | | | |
| Female minister | 0.356*** | 0.371*** | 0.191* | 0.208** | 0.176 | 0.237** | 0.162*** |
| | (0.122) | (0.127) | (0.104) | (0.102) | (0.110) | (0.112) | (0.047) |
| Constant | 0.861*** | 0.758*** | 0.721*** | 0.566*** | 0.140 | −0.155 | 0.734*** |
| | (0.047) | (0.129) | (0.171) | (0.194) | (0.621) | (1.062) | (0.187) |
| Month FEs | × | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Ministry FEs | × | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| Linear time trends | × | × | × | × | ✓ | ✓ | × |
| Quadratic time trends | × | × | × | × | × | ✓ | × |
| Flexible time trends | × | × | × | × | × | × | ✓ |
| Effect Size % | 41 | 43 | 22 | 24 | 20 | 28 | 19 |
| 95% CI | [14,69] | [14,72] | [-1,46] | [1,47] | [-5,45] | [2,53] | [8,30] |
| Observations | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 | 5,573 |
| R$^2$ | 0.034 | 0.063 | 0.125 | 0.153 | 0.172 | 0.188 | 0.186 |
| Adjusted R$^2$ | 0.034 | 0.030 | 0.121 | 0.119 | 0.136 | 0.149 | 0.186 |

*Note:* Models 1-6 represent OLS fixed-effect regressions for the period 1997-2015. Regression coefficients are shown with bootstrapped robust standard errors (clustered by ministry) shown in parentheses. The outcome variable is *RatioWomenSpeeches* as defined in equation C.3, and the independent variable is "Female minister" as defined in equation 4.1. The baseline corresponds to debates held under a male cabinet minister. Model 4 corresponds to equation 4.3, and models 5 and 6 include linear and quadratic ministry-specific time trends in addition to ministry fixed-effects and month fixed-effects. Model 7 is a GAM model including non-parametric, ministry-specific, flexible time trends. The "Effect Size" row indicates the percentage increase in female participation relative to the average female participation rate under male ministers. *p<0.1; **p<0.05; ***p<0.01

250

**Figure C.3:** Correlation of speech 'influence' with speech length and debate position
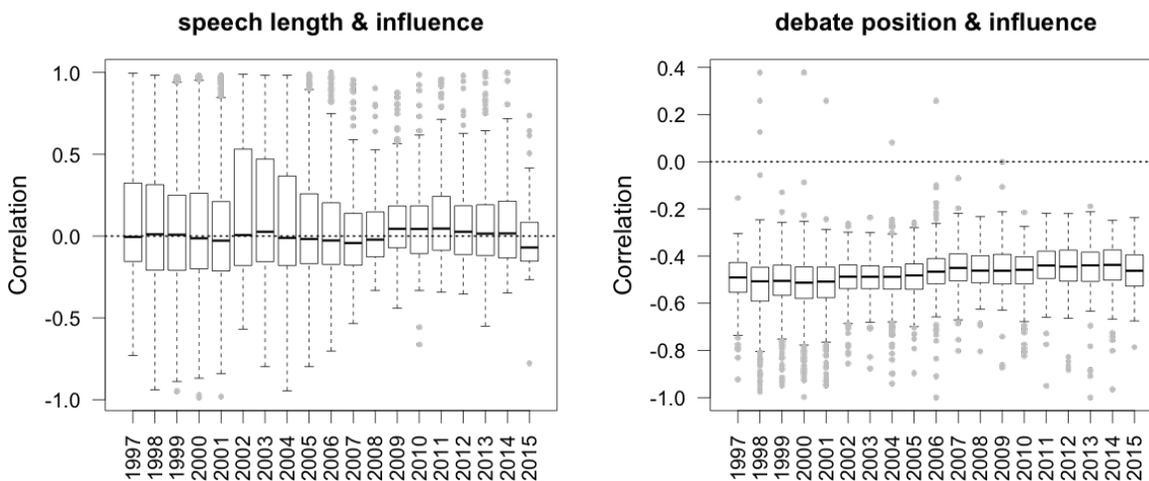


NOTE: The left panel shows the average correlation between the length of a speech and influence measured at the debate level across all years in the sample. The right panel shows the equivalent correlation between speech position and influence. While there is no systematic relationship between speech length and influence, the same is not the case for position. As expected, the later a speech occurs in a debate, the less influential it is.

**Table C.4:** Ministers are more influential, and Speakers of the House are less influential

| | *influence* | | |
| --- | --- | --- | --- |
| | (1) | (2) | (3) |
| Minister | 0.005*** | | 0.005*** |
| | (0.0001) | | (0.0001) |
| Speaker | | −0.001*** | −0.001*** |
| | | (0.0001) | (0.0001) |
| Constant | 0.008*** | 0.009*** | 0.008*** |
| | (0.00003) | (0.00002) | (0.00003) |
| Observations | 575,903 | 575,903 | 575,903 |
| $R^2$ | 0.010 | 0.0002 | 0.010 |

NOTE: OLS regressions where the outcome variable is *influence* as defined in equation 4.8, and the independent variables are "Minister" – an indicator that is equal to one when a speech is given by a government minister – and "Speaker" – an indicator that is equal to one when a speech is given by the Speaker of the House. The baseline corresponds to the average level of *influence* for speeches delivered by backbench MPs. $^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

**Table C.5:** Adjacent speeches are more responsive than non-adjacent speeches

|  | *res* | |
|---|---|---|
|  | (1) | (2) |
| Adjacent | 6.379*** | 7.263*** |
|  | (1.331) | (1.539) |
| Constant | 16.470*** | −0.000 |
|  | (0.778) | (46.144) |
| Debate FEs | × | ✓ |
| Observations | 11,576 | 11,576 |
| $R^2$ | 0.002 | 0.547 |

NOTE: OLS regressions for adjacent and non-adjacent speeches (within a debate). Regression coefficients are shown with standard errors in parentheses. The outcome variable is *res* as defined in equation 4.10, and the independent variable is an indicator that is equal to one when a given pair of speeches occupy adjacent positions in the debate. The baseline corresponds to speeches that are non-adjacent. *p<0.1; **p<0.05; ***p<0.01

**Table C.6:** Minister and backbencher responsiveness

|  | *res* |
|---|---|
| Minister responding to backbencher | 12.763*** |
|  | (0.164) |
| Constant | 8.317*** |
|  | (0.117) |
| Observations | 119,531 |
| $R^2$ | 0.048 |

NOTE: OLS regressions for 2650 "question time" debates. Regression coefficients are shown with standard errors in parentheses. The outcome variable is *res* as defined in equation 4.10. The independent variable is an indicator that is equal to one when a speech is spoken by a minister, and comes immediately after a speech by a backbencher. The baseline corresponds to backbench speeches that follow directly after a speech by a minister. *p<0.1; **p<0.05; ***p<0.01

## C.3 STRATEGIC APPOINTMENT OF FEMALE SHADOW MINISTERS

To investigate the hypothesis that opposition parties may respond strategically to the appointment of a female government minister by appointing a female shadow minister to the opposition cabinet, I analyse the relationship between the sex of a *newly appointed shadow minister* and the sex of the *current government minister*. I estimate this relationship using logit models of the following form:

$$\text{logit}(\mathbb{E}[ShadowFemaleMinister_{mt}]) = \alpha + \beta_1 * FemaleMinister_{mt} + \lambda_m + \epsilon_{mt}$$

where $ShadowFemaleMinister_{mt}$ is equal to one when the shadow minister appointed to ministry $m$ at time $t$ is a woman, and zero otherwise. $FemaleMinister$ is defined as in equation 4.1, and $\lambda_m$ is a ministry fixed effect. If opposition parties are responding strategically to the sex of the government minister in a given

ministry, then the $\beta_1$ coefficient will be positive, indicating that the probability of appointing a female shadow minister is associated with the sex of the current cabinet minister for that ministry. The results of these regressions are given in table C.7.

While the coefficient on the 'female government minister' variable are positive in both models, these effects are imprecisely estimated, and statistically indistinguishable from zero. This suggests that it is unlikely that the effects documented in the main analysis are driven by the strategic appointment of female shadow ministers by opposition parties.

**Table C.7:** Probability that a female shadow minister will be appointed, conditional on the sex of the current government minister

|  | Female shadow minister | |
| --- | --- | --- |
|  | (1) | (2) |
| Female government minister | 0.141 | 0.504 |
|  | (0.456) | (0.659) |
| Constant | −1.288*** | −0.504 |
|  | (0.399) | (1.560) |
| Ministry FEs | No | Yes |
| Observations | 149 | 149 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 | |
|  | Logit model | |

255

## C.4 Differential agenda-setting of male and female ministers

The main idea here is to measure the topical content of the issues under discussion in debate, and to evaluate whether topics which are associated with high levels of female participation (when the minister is male) increase when a female minister is appointed. In order to measure the topical content of the legislation under debate, I focus on the speeches made by *ministers* during each debate, rather than the speeches made by all members. In many cases, debates begin with a long opening statement by the minister, in which they put forward the purpose and detail of the legislation to be considered by the House. As the content of speeches made by other members may itself be a result of the appointment of a female minister, these speeches provide a useful resource for estimating the agenda proposed by the ministers.

I proceed in four steps. First, I estimate a series of topic models to produce debate-level topic proportions for all debates in the sample. These proportions indicate the topical content of each debate, and give a basis on which to find thematically similar debates under both male and female ministers. Second, I use the topic proportions for debates which are held under male ministers as explanatory variables in linear regressions, where the dependent variable is the ratio of words spoken by women as defined in equation C.1. The coefficients from these regressions indicate the degree to which each latent topic is traditionally associated with female participation in debate. Third, in a second set of linear regressions, I estimate the relationship between the prevalence of a topic and the sex of a minister. The coefficients from these regressions indicate whether a topic increases or decreases when the minister is female. Finally, I compare the two sets of regression coefficients. If the agenda-setting hypothesis is correct, there should

be a positive correlation between these two sets of coefficients: topics that are traditionally associated with female participation will increase when the minister is female. Such a finding would suggest that female ministers are indeed focussing on topics that are more conducive to female participation in legislative debate.

I start by applying a series of unsupervised topic models to all speeches made by ministers in the entire sample. I use the Correlated Topic Model (Blei and Lafferty, 2006), which, as with all topic models, assumes is that the frequency with which terms co-occur within different documents (here, debates) gives information about the topics that feature in those documents. The key quantity of interest recovered from the CTM is $\theta$, which is a $T$ x $D$ matrix of topic proportions that describe the fraction of each ministerial statement $d \in \{1, 2, ..., D\}$ that is from each topic $t \in \{1, 2, ..., T\}$. Analysts must choose how many topics to estimate from the data, and because the 'correct' number of topics is unclear, *a priori*, I estimate $K$ topic models for a range of topic counts from 20 to 100, at 5 topic increments. This results in 17 separate $\theta_k$ matrices, with typical elements $\theta_{ktd}$: the proportion of ministerial-statement $d$ in topic $t$ from topic-model $k$.

I then use each $\theta_k$ matrix as the model matrix[1] for a linear regression predicting $Y_d$, the female speech ratio in debate $d$. As the goal of this first-stage model is to establish a baseline level of female participation associated with each topic, I estimate this model only for those debates where the presiding minister is male. I repeat this exercise $K$ times, once for each topic model.

$$Y_d = b_{k1}\theta_{k1d} + b_{k2}\theta_{k2d} + ... + b_{kT}\theta_{kTd} + \epsilon_d \tag{C.4}$$

---

[1]The topic proportions for each statement ($\theta_{kd}$) sum to one, and so I could exclude one of the topics or the intercept term. I choose to exclude the intercept term.

The estimated $b$ coefficients represent the degree to which each topic (collection of words) is associated with female participation in debates, holding other topics constant. An example of the substantive information that these coefficients contain is clear from table C.8 , which contains each topic from the 35 topic model, ordered by their respective $b$ coefficients. Reassuringly, the topics with the largest $b$ coefficients deal primarily with topics that match intuitive notions of female interests, including children, parents, and women's issues. Additionally, women appear relatively more likely to contribute to debates that focus on the NHS, teachers and schools, and energy issues. By contrast, women participate relatively less on debates pertaining to Africa, and intelligence and terrorism issues. This implies that when (male) ministers present legislation to the House that concerns explicitly female-focussed issues, women are more likely to participate in debate.

Next, I estimate a series of regressions to establish which topics are more prevalent under female ministers. As we are concerned here with establishing the differences in agenda-setting *within* government ministries, I estimate models of the following form:

$$\theta_{ktd(m)} = \alpha + \gamma_{kt} * FemaleMinister_d + \lambda_m + \epsilon_{ktd} \qquad (C.5)$$

Where $\theta_{ktd(m)}$ is the proportion of debate-text $d$ (in ministry $m$) devoted to topic $t$ from topic model $k$. $FemaleMinister_d$ is a binary variable equal to one when debate $d$ is presided over by a female minister (as defined in equation 4.1), and $\lambda_m$ is a ministry fixed effect. The model is estimated separately for each *topic*, and, as in the previous step, I repeat this exercise for each of the 17 *topic models*. The estimation therefore results in $K$ vectors of $\gamma_t$ coefficients – one coefficient for

**Table C.8:** Topics ordered by the level of female participation under male ministers

| Topic | beta |
|---|---|
| child_women_lone_parent_disabl_wage_welfar | 2.006 |
| energi_carbon_climat_emiss_gas_electr_renew | 1.406 |
| olymp_sport_lotteri_game_gambl_footbal_art | 1.405 |
| nhs_patient_nurs_cancer_hospit_doctor_clinic | 1.386 |
| teacher_student_school_pupil_teach_educ_academi | 1.357 |
| asylum_polic_immigr_prosecut_arrest_metropolitan_constabl | 1.352 |
| local_author_fire_council_region_town_counti | 1.323 |
| bank_deficit_enterpris_economi_growth_busi_manufactur | 1.306 |
| offend_sentenc_prison_probat_drug_antisoci_disord | 1.101 |
| post_card_passport_ident_mail_custom_offic | 0.986 |
| rail_railway_railtrack_passeng_airport_road_transport | 0.887 |
| farmer_anim_farm_outbreak_beef_diseas_vaccin | 0.777 |
| claus_amend_bill_provis_legisl_draft_convent | 0.752 |
| scotland_scottish_kingdom_glasgow_execut_snp_devolut | 0.729 |
| debat_tuesday_thursday_monday_motion_wednesday_adjourn | 0.728 |
| russia_syria_iran_kosovo_israel_palestinian_isra | 0.677 |
| look_sure_absolut_thing_think_get_done | 0.655 |
| committe_select_motion_scrutini_sit_parliamentari_modernis | 0.633 |
| recommend_assess_arrang_inform_report_board_staff | 0.628 |
| africa_zimbabw_aid_sudan_african_relief_develop | 0.597 |
| elector_elect_vote_candid_chamber_voter_lord | 0.589 |
| pension_incom_retir_credit_save_earn_payment | 0.576 |
| conserv_cut_tori_spend_shadow_oppos_opposit | 0.571 |
| bbc_broadcast_digit_licenc_ofcom_fee_televis | 0.464 |
| deliv_white_approach_sector_strategi_challeng_set | 0.451 |
| inquiri_investig_alleg_evid_panel_sir_data | 0.383 |
| ireland_northern_ira_sinn_fein_paramilitari_decommiss | 0.312 |
| afghan_armi_afghanistan_deploy_defenc_troop_aircraft | 0.286 |
| awar_certain_friend_matter_concern_gentleman_hon | 0.225 |
| saddam_iraqi_iraq_hussein_weapon_destruct_resolut | 0.195 |
| treati_europ_european_union_enlarg_euro_currenc | 0.110 |
| welsh_wale_assembl_cardiff_plaid_cymru_devolut | -0.008 |
| tri_say_think_reason_thing_differ_happen | -0.083 |
| cent_per_billion_budget_rise_spend_inflat | -0.136 |
| terror_terrorist_intellig_threat_attack_muslim_counterterror | -0.184 |

each topic, in each topic model. When $\gamma_{kt}$ is positive, this implies that the use of the topic increases when a female minister is appointed, and when it is negative it suggests that the use of the topic decreases on the appointment of a female minister.

Equations C.4 and C.5 therefore result in two vectors of coefficients: $b_k$ gives the relationship between each of the topics in topic model $k$ and the level of female debate participation under male ministers, and $\gamma_k$ indicates how much each of the same topics in topic model $k$ increases (or decreases) when a female minister is appointed. Assessing the correlation between these coefficient vectors allows us to test whether female ministers introduce legislation that focusses on topics which are associated with high levels of female participation under male ministers. Thus, to test the agenda-setting hypothesis, I regress the estimated $b$ coefficients from equation C.4 on the $\gamma$ coefficients from equation C.5 according to:

$$ b_{t(k)} = \alpha + \zeta_k * \gamma_{t(k)} + \epsilon_{t(k)} \tag{C.6} $$

If the agenda-setting hypothesis is correct, then the $b_{t(k)}$ and $\gamma_{t(k)}$ coefficients should be positively correlated, indicating that high female-participation topics (under male ministers) play a more prominent role on the policy agenda when a female minister is appointed. That is, we expect the $\zeta_k$ coefficient from equation C.6 to be positive. Such a finding would contradict the legislative role-model hypothesis, as it would suggest that the increased levels of legislative participation documented in the main results section could be attributed to the development of an increasingly 'female-friendly' agenda under female ministers. I present the estimated $\zeta_k$ coefficients – one for each of the topic models – in figure C.4 along with their associated 95% confidence intervals.

**Figure C.4:** There is no increase in the use of 'female friendly' topics on the parliamentary agenda when a female minister is appointed.
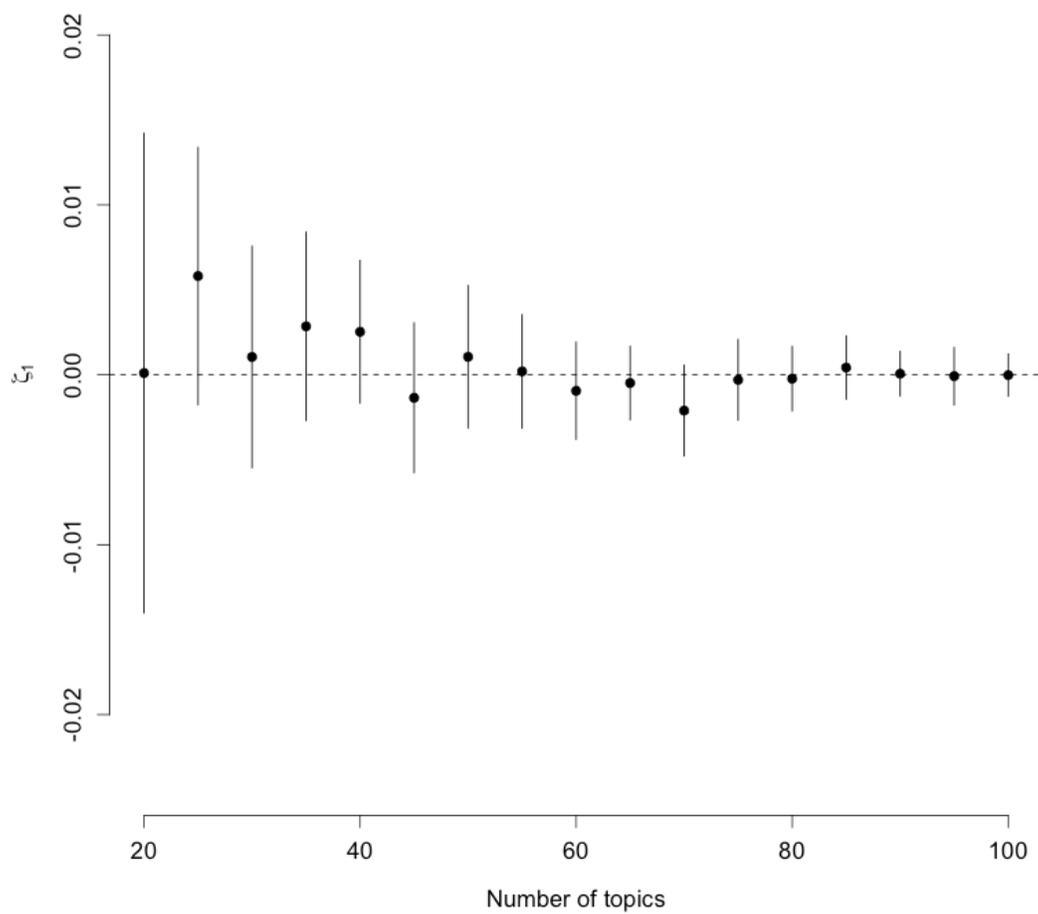


NOTE: The graph plots, on the x-axis, the number of topics, and on the y-axis, the estimated $\zeta$ coefficients from equation C.6. There is no clear evidence that when female ministers are appointed, they focus more on topics that are traditionally popular with other female MPs.

Figure C.4 provides no clear evidence that female ministers focus more attention on topics that are traditionally marked by high levels of female participation. While the relationship in the 20-40 topic range appears to be positive, none of the slopes is statistically significant at traditional levels. In the higher topic ranges (from 50 to 100), the relationship between the two sets of regression coefficients is even weaker. The plot suggests that it is unlikely that changes to the legislative agenda are responsible for the changes in female participation documented in the main text.

# References

Acharya, Viral V, Itamar Drechsler and Philipp Schnabl. 2011. "A pyrrhic victory? - bank bailouts and sovereign credit risk." *National Bureau of Economic Research* .

Adams, James, Samuel Merrill III, Elizabeth N. Simas and Walter J. Stone. 2011. "When Candidates Value Good Character: A Spatial Model with Applications to Congressional Elections." *The Journal of Politics* 73(1):17 – 30.

Ahlquist, John S and Margaret Levi. 2011. "Leadership: What it means, what it does, and what we want to know about it." *Annual Review of Political Science* 14:1–24.

Aldrich, John H. 1994. "A model of a legislature with two parties and a committee system." *Legislative Studies Quarterly* 19(3):313–339.

Aldrich, John H. 1995. *Why Parties? The Origin and Transformation of Political Parties in America.* The University of Chicago Press, Chicago and London.

Aldrich, John H, Christopher Gelpi, Peter Feaver, Jason Reifler and Kristin Thompson Sharp. 2006. "Foreign policy and the electoral connection." *Annu. Rev. Polit. Sci.* 9:477–502.

Alessandri, Piergiorgio and Andrew G Haldane. 2009. *Banking on the State.* Bank of England London, UK.

Angrist, Joshua D. and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion.* Princeton University Press.

Ansolabehere, Stephen and James M. Snyder. 2000. "Valence politics and equilibrium in spatial election models." *Public Choice* 103(3):327 – 336.

Anzia, Sarah F and Molly C Jackman. 2013. "Legislative organization and the second face of power: Evidence from US State Legislatures." *The Journal of Politics* 75(01):210–224.

Asgari, Shaki, Nilanjana Dasgupta and Nicole Gilbert Cote. 2010. "When Does Contact with Successful Ingroup Members Change Self-Stereotypes?" *Social Psychology* 41(3):203–211.

Ashworth, Scott and Ethan Bueno de Mesquita. 2009. "Elections with platform and valence competition." *Games and Economic Behavior* 67(1):191–216.

Auel, Katrin and Tapio Raunio. 2014. "Debating the state of the union? Comparing parliamentary debates on EU issues in Finland, France, Germany and the United Kingdom." *The Journal of Legislative Studies* 20(1):13–28.

Autor, David. 2003. "Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing." *Journal of Labor Economics* 21(1):1–42.

Barroso, José Manuel. 2013. "State of the Union address 2013.".

Bauer, Gretchen and Manon Tremblay. 2011. *Women in executive power: a global overview.* Taylor & Francis.

Baumgartner, Frank R and Bryan D Jones. 2002. *Policy dynamics.* University of Chicago Press.

Baumgartner, Frank R, Christian Breunig, Christoffer Green-Pedersen, Bryan D Jones, Peter B Mortensen, Michiel Nuytemans and Stefaan Walgrave. 2009. "Punctuated equilibrium in comparative perspective." *American Journal of Political Science* 53(3):603–620.

Beaman, Lori A, Raghabendra Chattopadhyay, Esther Duflo, Rohini Pande and Petia Topalova. 2008. "Powerful women: does exposure reduce bias?" *National Bureau of Economic Research* .

264

Beaman, Lori, Esther Duflo, Rohini Pande and Petia Topalova. 2012. "Female leadership raises aspirations and educational attainment for girls: A policy experiment in India." *Science* 335(6068):582–586.

Becher, Michael and Ulrich Sieberer. 2008. "Discipline, Electoral Rules and Defection in the Bundestag, 1983 - 94." *German Politics* 17(3):293 – 304.

Beckwith, Karen. 2007. "Numbers and newness: The descriptive and substantive representation of women." *Canadian Journal of Political Science* 40(01):27–49.

Beckwith, Karen and Kimberly Cowell-Meyers. 2007. "Sheer numbers: Critical representation thresholds and women's political representation." *Perspectives on politics* 5(03):553–565.

Begg, Iain. 2009. "Regulation and Supervision of Financial Intermediaries in the EU: The Aftermath of the Financial Crisis." *Journal of Common Market Studies* 47(5):107–1128.

Benedetto, Giacomo and Simon Hix. 2007. "The Rejected, the Ejected, and the Dejected: Explaining Government Rebels in the 2001-2005 British House of Commons." *Comparative Political Studies* 40(7):755 – 781.

Benoit, Kenneth and Gail McElroy. 2009. 6 - Party Group Switching in the European Parliament. In *Political Parties and Legislative Party Switching*, ed. William B. Heller and Carol Mershon. Palgrave Macmillan pp. 147 – 173.

Benoit, Kenneth, Michael Laver and Slava Mikhaylov. 2009. "Treating words as data with error: Uncertainty in text statements of policy positions." *American Journal of Political Science* 53(2):495–513.

Berglöf, Erik, Yevgniya Korniyenko, Alexander Plekhanov and Jeromin Zettelmeyer. 2009. "Understanding the crisis in emerging Europe." Working Paper - European Bank for Reconstruction and Development.

Bergsten, C Fred. 2012. "Why the Euro Will Survive: Completing the Continent's Half-Built House." *Foreign Affairs* 91(5):16–22.

Bertrand, Marianne, Sandra E Black, Sissel Jensen and Adriana Lleras-Muney. 2014. "Breaking the glass ceiling? The effect of board quotas on female labor market outcomes in Norway." *National Bureau of Economic Research* .

Bettinger, Eric P and Bridget Terry Long. 2005. "Do faculty serve as role models? The impact of instructor gender on female students." *American Economic Review* 95(2):152–157.

Bevan, Shaun, Peter John and Will Jennings. 2011. "Keeping party programmes on track: the transmission of the policy agendas of executive speeches to legislative outputs in the United Kingdom." *European Political Science Review* 3(03):395–417.

Binder, Sarah A. 1999. "The dynamics of legislative gridlock, 1947–96." *American Political Science Review* 93(03):519–533.

Binder, Sarah A. 2003. *Stalemate: Causes and consequences of legislative gridlock.* Brookings Institution Press.

Bird, Karen. 2005. "Gendering parliamentary questions." *The British Journal of Politics & International Relations* 7(3):353–370.

Black, Duncan. 1948. "On the Rationale of Group Decision-Making." *Journal of Political Economy* 56(1):23 – 34.

Blei, David and John Lafferty. 2006. "Correlated topic models." *Advances in neural information processing systems* 18:147.

Blei, David M, Andrew Y Ng and Michael I Jordan. 2003. "Latent dirichlet allocation." *Journal of Machine Learning Research* 3:993–1022.

Blondel, Jean. 1973. *Comparative legislatures.* Prentice-Hall.

Blyth, Mark. 2002. *Great transformations: Economic ideas and institutional change in the twentieth century.* Cambridge University Press.

Bochel, Catherine and Hugh Bochel. 2008. "Women 'leaders' in local government in the UK." *Parliamentary Affairs* 61(3):426–441.

Bochel, Catherine and Jacqui Briggs. 2000. "Do women make a difference?" *Politics* 20(2):63–68.

Bolton, Patrick, Markus K Brunnermeier and Laura Veldkamp. 2008. "Leadership, coordination and mission-driven management." *National Bureau of Economic Research* .

Boothroyd, Baroness Betty. 2013. "Interview for the House of Lords.".
**URL:** *https://www.youtube.com/watch?v=uH6-lfwUeS4*

Bowler, Shaun, David Farrell and Richard Katz. 1999. *Party Discipline and Parliamentary Government.* Ohio State Press, Ohio.

Bowling, Cynthia J and Margaret R Ferguson. 2001. "Divided government, interest representation, and policy differences: Competing explanations of gridlock in the fifty states." *Journal of Politics* 63(1):182–206.

Brajer, Victor and Andrew Gill. 2010. "Yakity-Yak: Who Talks Back? An Email Experiment*." *Social Science Quarterly* 91(4):1007–1024.

Broockman, David E. 2014. "Do female politicians empower women to vote or run for office? A regression discontinuity approach." *Electoral Studies* 34:190–204.

Browne, Eric C, John P Frendreis and Dennis W Gleiber. 1986. "The process of cabinet dissolution: An exponential model of duration and stability in western democracies." *American Journal of Political Science* 30(3):628–650.

Brunnermeier, Markus K. 2009. "Deciphering the Liquidity and Credit Crunch 2007-2008." *Journal of Economic Prespectives* 23(1):77–100.

Buzek, Jerzy. 2010. "Speech to the European Parliament.".
**URL:** *http://goo.gl/jPXJfQ*

267

Calvo, Ernesto and Iñaki Sagarzazu. 2011. "Legislator Success in Committee: Gatekeeping Authority and the Loss of Majority Control." *American Journal of Political Science* 55(1):1 – 15.

Cameron, A Colin and Douglas L Miller. 2015. "A practitioner's guide to cluster-robust inference." *Journal of Human Resources* 50(2):317–372.

Cameron, David. 2013. "EU speech at Bloomberg.".
**URL:** *https://www.gov.uk/government/speeches/eu-speech-at-bloomberg*

Carey, John. 2007. "Competing Principals, Political Institutions, and Party Unity in Legislative Voting." *American Journal of Political Science* 51(1):92 – 107.

Carey, John. 2009. *Legislative Voting and Accountability.* Cambirdge University Press, Cambridge.

Carmassi, Jacopo, Daniel Gros and Stefano Micossi. 2009. "The Global Financial Crisis: Causes and Cures." *Journal of Common Market Studies* 47(5):977 – 996.

Carroll, Royce, Gary W Cox and Mónica Pachón. 2006. "How parties create electoral democracy, chapter 2." *Legislative Studies Quarterly* 31(2):153–174.

Carrubba, Clifford J and Craig Volden. 2000. "Coalitional politics and logrolling in legislative institutions." *American Journal of Political Science* 44(2):261–277.

Carrubba, Clifford J., Matthew Gabel, Lacey Murrah, Ryan Clough, Elizabeth Montgomery and Rebecca Schambach. 2006. "Off the Record: Unrecorded Legislative Votes, Selection Bias and Roll-Call Vote Analysis." *British Journal of Political Science* 36(4):691 – 704.

Catalano, Ana. 2009. "Women acting for women? An analysis of gender and debate participation in the British House of Commons 2005–2007." *Politics & Gender* 5(01):45–68.

Chandler, William, Gary Cox and Mathew McCubbins. 2006. "Agenda Control in the Bundestag, 1980 – 2002." *German Politics* 15(1):27 – 48.

Childs, Sarah. 2000. "The New Labour women MPs in the 1997 British Parliament: issues of recruitment and representation." *Women's History Review* 9(1):55–73.

Childs, Sarah. 2004. "A feminised style of politics? Women MPs in the House of Commons." *The British Journal of Politics & International Relations* 6(1):3–19.

Childs, Sarah and Mona Lena Krook. 2009. "Analysing women's substantive representation: From critical mass to critical actors." *Government and Opposition* 44(2):125–145.

Chiou, Fang-Yi and Lawrence S Rothenberg. 2003. "When pivotal politics meets partisan politics." *American Journal of Political Science* 47(3):503–522.

Claessens, Stijn, Giovanni Dell'Ariccia, Deniz Igan and Luc Laeven. 2010. "Cross-country experiences and policy implications from the global financial crisis." *Economic Policy* 25(62):267–293.
**URL:** *http://dx.doi.org/10.1111/j.1468-0327.2010.00244.x*

Clark, Tom S. 2006. "Judicial decision making during wartime." *Journal of Empirical Legal Studies* 3(3):397–419.

Clinton, Joshua D. 2012. "Using roll call estimates to test models of politics." *Annual Review of Political Science* 15:79–99.

Clinton, Joshua, Simon Jackman and Douglas Rivers. 2004. "The statistical analysis of roll call data." *American Political Science Review* 98(02):355–370.

Cohen, Jeffrey E. 1982. "The impact of the modern presidency on presidential success in the US Congress." *Legislative Studies Quarterly* 7(4):515–532.

Collier, Ruth Berins and David Collier. 2002. *Shaping the political arena.* University of Notre Dame Press Notre Dame, IN.

Commission, European. 2005. *Proposal for a Council Directive on Passanger Car Related Taxes.* Number 2005/0130 (CNS).

Commission, European. 2012. *Women in economic decision-making in the EU: Progress report.* European Commission.

Commission, European. 2015. *Proposal for a regulation of the European Parliament and of the Council on the European Border and Coast Guard.* Number 2015/0310 (COD).

Copeland, Paul and Scott James. 2014. "Policy windows, ambiguity and Commission entrepreneurship: explaining the relaunch of the European Union's economic reform agenda." *Journal of European Public Policy* 21(1):1–19.

Cortell, Andrew P and Sysan Peterson. 1999. "Altered states: Explaining domestic institutional change." *British Journal of Political Science* 29(01):177–203.

Cowley, Philip. 2005. *The Rebels: How Blair Mislaid His majority.* Politico's Publishing.

Cox, Gary W. 2006. The Organization of Democratic Legislatures. In *The Oxford Handbook of Political Economy*, ed. Barry Weingast and Donald Wittman. Oxford University Press Oxford pp. 141–61.

Cox, Gary W. and Mathew D. McCubbins. 2005. *Setting the Agenda: Responsible Party Government in the U.S. House of Representatives.* Cambirdge University Press, Cambridge.

Cox, Gary W and Mathew D McCubbins. 2011. Managing Plenary Time: The US Congress in Comparative Context. In *The Oxford Handbook of the American Congress*, ed. Eric Schickler and Frances Lee. Oxford University Press pp. 451–472.

Cox, Gary W. and Matthew D. McCubbins. 1993. *Legislative Leviathan.* University of California Press, Berkeley.

Csardi, Gabor and Tamas Nepusz. 2006. "The igraph software package for complex network research." *InterJournal, Complex Systems* 1695(5):1–9.

Dabrowski, Marek. 2010. "The global financial crisis: Lessons for European integration." *Economic Systems* 34(1):38–54.

Dahlerup, Drude. 1988. "From a small to a large minority: women in Scandinavian politics." *Scandinavian Political Studies* 11(4):275–298.

Dasgupta, Nilanjana and Shaki Asgari. 2004. "Seeing is believing: Exposure to counterstereotypic women leaders and its effect on the malleability of automatic gender stereotyping." *Journal of Experimental Social Psychology* 40(5):642–658.

Daul, Joseph. 2008. "Speech to the European Parliament.".
**URL:** *http://goo.gl/vxl0C0*

Davies, Mervyn. 2011. *Women on Boards.* UK Government, Department for Business, Innovation and Skills.
**URL:** *https://www.gov.uk/government/news/women-on-boards*

Davis, Rebecca Howard. 1997. *Women and power in parliamentary democracies: Cabinet appointments in Western Europe, 1968-1992.* Vol. 2 University of Nebraska Press.

De Grauwe, Paul. 2011. Managing a fragile Eurozone. In *CESifo Forum.* Vol. 12 Ifo Institute for Economic Research at the University of Munich pp. 40–45.

Dee, Thomas S. 2007. "Teachers and the gender gaps in student achievement." *Journal of Human Resources* 42(3):528–554.

Desposato, Scott W. 2005. "Correcting for small group inflation of roll-call cohesion scores." *British Journal of Political Science* 35(4):731.

Desposato, Scott W. 2006. "Parties for rent? Ambition, ideology, and party switching in Brazil's chamber of deputies." *American Journal of Political Science* 50(1):62–80.

Dewan, Torun and Arthur Spirling. 2011. "Strategic Opposition and Government Cohesion in Westminster Democracies." *American Political Science Review* 105(2):337 – 358.

Dewan, Torun and David P Myatt. 2007. "Leading the party: Coordination, direction, and communication." *American Political Science Review* 101(04):827–845.

Dewan, Torun and David P Myatt. 2008. "The qualities of leadership: Direction, communication, and obfuscation." *American Political Science Review* 102(03):351–368.

Dewan, Torun and David P Myatt. 2012. "On the rhetorical strategies of leaders: Speaking clearly, standing back, and stepping down." *Journal of Theoretical Politics* 24(4):431–460.

Diermeier, Daniel and Antonio Merlo. 2000. "Government turnover in parliamentary democracies." *Journal of Economic Theory* 94(1):46–79.

Diermeier, Daniel and Timothy J. Feddersen. 1998. "Cohesion in Legislatures and the Vote of Confidence Procedure." *American Political Science Review* 92(3):611 – 621.

Döring, Herbert, ed. 1995. *Parliaments and Majority Rule in Western Europe.* Campus, Frankfurt.

Dovi, Suzanne. 2002. "Preferable descriptive representatives: Will just any woman, black, or Latino do?" *American Political Science Review* 96(4):729–744.

Duff, Andrew. 2011. "Speech to the European Parliament.".
**URL:** *http://goo.gl/0PGs4l*

Eagly, Alice H and Blair T Johnson. 1990. "Gender and leadership style: A meta-analysis." *Psychological bulletin* 108(2):233.

Eagly, Alice H and Steven J Karau. 2002. "Role congruity theory of prejudice toward female leaders." *Psychological review* 109(3):573.

ECB. 2011. "The European Stability Mechanism." *European Central Bank Monthly Bulletin* pp. 71–84.

Eckel, Catherine C and Rick K Wilson. 2007. "Social learning in coordination games: does status matter?" *Experimental Economics* 10(3):317–329.

Eggers, Andrew C and Arthur Spirling. 2014. "Ministerial Responsiveness in Westminster Systems: Institutional Choices and House of Commons Debate, 1832–1915." *American Journal of Political Science* 58(4):873–887.

Eggers, Andrew C and Arthur Spirling. N.d. "Informal Institutions, Latent Variables and Political Methodology." *Working Paper.* Forthcoming.

Enelow, James M. and Melvin J. Hinich. 1982. "Nonspatial Candidate Characteristics and Electoral Competition." *The Journal of Politics* 44(1):115 – 130.

Enelow, James M., Melvin J. Hinich and Nancy R. Mendell. 1986. "An Empirical Evaluation of Alternative Spatial Models of Elections." *The Journal of Politics* 3:675 – 693.

Epstein, Lee, Daniel E Ho, Gary King and Jeffrey A Segal. 2005. "Supreme Court during Crisis: How War Affects Only Non-War Cases, The." *NYUL rev.* 80:1.

Erkan, Günes and Dragomir R Radev. 2004. "LexRank: Graph-based lexical centrality as salience in text summarization." *Journal of Artificial Intelligence Research* 22:457–479.

Escobar-Lemmon, Maria and Michelle M Taylor-Robinson. 2008. "Getting to the top: Career paths of women in Latin American cabinets." *Political Research Quarterly* 62(4):685–699.

European Commission. 2013. "A comprehensive EU response to the financial crisis: substantial progress towards a strong financial framework for Europe and a banking union for the eurozone." Memo.

European Parliament. 2011. "Rules of Procedure." *www.europarl.europa.eu/aboutparliament/en/Rules-of-procedure.html* Accessed online 7th May, 2015.

European Union. 2012. *Consolidated Version of the Treaty on the Functioning of the European Union.* Number OJ C326/47 Official Journal of the European Union.

Faas, Thorsten. 2003. "To defect or not to defect? National, institutional and party group pressures on MEPs and their consequences for party group cohesion in the European Parliament." *European Journal of Political Research* 42(6):841 – 866.

Fader, Anthony, Dragomir R Radev, Michael H Crespin, Burt L Monroe, Kevin M Quinn and Michael Colaresi. 2007. MavenRank: Identifying Influential Members of the US Senate Using Lexical Centrality. In *EMNLP-CoNLL.* pp. 658–666.

Farage, Nigel. 2010. "Speech to the European Parliament - June 16th.".
**URL:** *http://goo.gl/YIzj9P*

Fiorina, Morris P and Kenneth A Shepsle. 1989. Formal theories of leadership: agents, agenda setters, and entrepreneurs. In *Leadership and Politics: New Perspectives in Political Science*, ed. Bryan D Jones. University of Kansas Press Lawrence, KS pp. 17–40.

Fishburn, PC and WV Gehrlein. 1985. "The power of a cohesive subgroup within a voting body." *Social Choice and Welfare* 2(3):197–206.

Fox, Ashley. 2011. "Speech to the European Parliament.".
**URL:** *http://goo.gl/QaXfbH*

Fox, Richard L and Jennifer L Lawless. 2004. "Entering the arena? Gender and the decision to run for office." *American Journal of Political Science* 48(2):264–280.

Fox, Richard L and Jennifer L Lawless. 2011. "Gendered perceptions and political candidacies: A central barrier to women's equality in electoral politics." *American Journal of Political Science* 55(1):59–73.

Friedman, Jerome, Trevor Hastie and Robert Tibshirani. 2010. "Regularization Paths for Generalized Linear Models via Coordinate Descent." *Journal of Statistical Software* 33(1).

Gabel, Matthew and Clifford J. Carrubba. 2004. "The European Parliament and Transnational Political Representation: Party Groups and Political Conflict." *Europäische Politik* 3:1 – 9.

Gailmard, Sean and Jeffery A. Jenkins. 2007. "Negative Agenda Control in the Senate and House: Fingerprints of Majority Party Power." *The Journal of Politics* 69(3):689 – 700.

Gehrlein, William V and PC Fishburn. 1986. "Division of power in legislatures with two cohesive subgroups." *Social Choice and Welfare* 3(2):119–124.

Gilardi, Fabrizio. 2015. "The Temporary Importance of Role Models for Women's Political Representation." *American Journal of Political Science* 59(4):957–970.

Gilbert, Lucia A. 1985. "Dimensions of same-gender student-faculty role-model relationships." *Sex Roles* 12(1-2):111–123.

Grahl, John and Photis Lysandrou. 2014. "The European Commission's Proposal for a Financial Transactions Tax: A Critical Assessment." *Journal of Common Market Studies* 52(2):234 – 249.

Grimmer, Justin. 2010. "A Bayesian hierarchical topic model for political texts: Measuring expressed agendas in Senate press releases." *Political Analysis* 18(1):1–35.

Grimmer, Justin and Brandon M Stewart. 2013. "Text as data: The promise and pitfalls of automatic content analysis methods for political texts." *Political Analysis* 21(3):267–297.

Gros, Daniel and Dirk Schoenmaker. 2014. "European Deposit Insurance and Resolution in the Banking Union." *Journal of Common Market Studies* 52(2):1–18.

Groseclose, Tim. 2001. "A Model of Candidate Location When One Candidate Has a Valence Advantage." *American Journal of Political Science* 45(4):862 – 886.

Haber, Matthias. 2015. "The legislative consequences of internal conflict and inter-party divisions." *Research & Politics* 2(2):1–8.

Hannah, Annette and Tamar Murachver. 1999. "Gender and conversational style as predictors of conversational behavior." *Journal of Language and Social Psychology* 18(2):153–174.

Hannah, Annette and Tamar Murachver. 2007. "Gender preferential responses to speech." *Journal of Language and Social Psychology* 26(3):274–290.

Hawkesworth, Mary. 2003. "Congressional enactments of race–gender: Toward a theory of raced–gendered institutions." *American Political Science Review* 97(04):529–550.

Heath, Roseanna Michelle, Leslie A Schwindt-Bayer and Michelle M Taylor-Robinson. 2005. "Women on the sidelines: Women's representation on committees in Latin American legislatures." *American Journal of Political Science* 49(2):420–436.

Heller, William B and Carol Mershon. 2005. "Party switching in the Italian Chamber of Deputies, 1996–2001." *Journal of Politics* 67(2):536–559.

Heller, William B and Carol Mershon. 2008. "Dealing in discipline: party switching and legislative voting in the Italian Chamber of Deputies, 1988–2000." *American Journal of Political Science* 52(4):910–925.

Heller, William and Carol Mershon. 2009. *Political parties and legislative party switching.* Palgrave Macmillan.

Hild, Alexandra M.D., Bernhard Herz and Christian Bauer. 2014. "Structured Eurobonds: Limiting Liability and Distributing Profits." *Journal of Common Market Studies* 52(2):250 – 267.

Hix, Simon. 2001. "Legislative Behaviour and Party Competition in the European Parliament: An Application of Nominate to the EU." *Journal of Common Market Studies* 39(4):663 – 688.

Hix, Simon. 2002. "Parliamentary Behaviour with Two Principals: Preferences, Parties and Voting in the European Parliament." *American Journal of Political Science* 46(3):688 – 698.

Hix, Simon. 2004. "Electoral Institutions and Legislative Behaviour – Explaining Voting Defection in the European Parliament." *World Politics* 56(2):194 – 223.

Hix, Simon. 2009. "What to Expect in the 2009-14 European Parliament: Return of the Grand Coalition?" *Swedish Institute for European Policy Studies - European Policy Analysis* 8:1 – 12.

Hix, Simon and Abdul Noury. 2009. "After Enlargement: Voting Patterns in the Sixth European Parliament." *Legislative Studies Quarterly* 34(2):159 – 174.

Hix, Simon, Abdul Noury and Gérard Roland. 2005. "Power to the Parties: Cohesion and Competition in the European Parliament, 1979 – 2001." *British Journal of Political Science* 35(2):209 – 234.

Hix, Simon, Abdul Noury and Gérard Roland. 2006. "Dimensions of Politics in the European Parliament." *American Journal of Political Science* 50(2):494 – 511.

Hix, Simon, Abdul Noury and Gérard Roland. 2007. *Democratic Politics in the European Parliament.* Cambirdge University Press, Cambridge.

Hix, Simon and Bjorn Hoyland. 2011. *The Political System of the European Union.* Palgrave Macmillan.

Hodson, Dermot and Lucia Quaglia. 2009. "European Perspectives on the Global Financial Crisis: Introduction." *Journal of Common Market Studies* 47(5):939 – 953.

Holinski, Nils, Clemens Kool and Joan Muysken. 2012. "Persistent Macroeconomic Imbalances in the Euro Area: Causes and Consequences." *Federal Reserve Bank of St. Louis Review* 94(1):1 – 21.

Holmes, Janet. 2013. *Women, men and politeness.* Routledge.

Honnige, Cristophe and Ulrich Sieberer. 2011. Limited Government Agenda Control and Strong Minority Rights. In *The Role of Governments in Legislative Agenda Setting*, ed. Bjorn Erik Rasch and George Tsebelis. Taylor and Francis Ltd. chapter 2.

Hooghe, Liesbet. 2005. "Several roads lead to international norms, but few via international socialization: A case study of the European Commission." *International Organization* 59(4):861.

Hopkins, Daniel J and Gary King. 2010. "A method of automated nonparametric content analysis for social science." *American Journal of Political Science* 54(1):229–247.

Howell, William G and Jon C Rogowski. 2013. "War, the Presidency, and Legislative Voting Behavior." *American Journal of Political Science* 57(1):150–166.

Høyland, Bjørn. 2010. "Procedural and party effects in European Parliament roll-call votes." *European Union Politics* 11(4):597 – 613.

Hug, Simon. 2009. "Selection Effects in Roll Call Votes." *British Journal of Political Science* 40(1):225 – 235.

Humphreys, Macartan, William A Masters and Martin E Sandbu. 2006. "The role of leaders in democratic deliberations: results from a field experiment in São Tomé and Príncipe." *World Politics* 58(04):583–622.

Imai, Kosuke, Luke Keele, Dustin Tingley and Teppei Yamamoto. 2011. "Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies." *American Political Science Review* 105(04):765–789.

Jackman, Simon. 2001. "Multidimensional analysis of roll call data via Bayesian simulation: identification, estimation, inference, and model checking." *Political Analysis* 9(3):227–241.

Jacoby, Wade. 2014. "The EU Factor in Fat Times and in Lean: Did the EU Amplify the Boom and Soften the Bust?" *Journal of Common Market Studies* 52(1):52 – 70.

Jalalzai, Farida and Mona Lena Krook. 2010. "Beyond Hillary and Benazir: women's political leadership worldwide." *International Political Science Review* 31(1):5–21.

Jenkins, Jeffery A and Nathan W Monroe. 2015. "On Measuring Legislative Agenda-Setting Power." *American Journal of Political Science* 60(1):158–174.

Jeong, Gyung-Ho, Gary J Miller and Itai Sened. 2009. "Closing the deal: negotiating civil rights legislation." *American Political Science Review* 103(04):588–606.

Jones, David R. 2001. "Party polarization and legislative gridlock." *Political Research Quarterly* 54(1):125–141.

Kam, Christopher. 2009. *Party Discipline and Parliamentary Politics.* Cambirdge University Press, Cambridge.

Karakowsky, Leonard, Kenneth McBey and Diane L Miller. 2004. "Gender, perceived competence, and power displays examining verbal interruptions in a group context." *Small Group Research* 35(4):407–439.

Karpowitz, Christopher F and Tali Mendelberg. 2014. *The silent sex: Gender, deliberation, and institutions.* Princeton University Press.

Karpowitz, Christopher F, Tali Mendelberg and Lee Shaker. 2012. "Gender inequality in deliberative participation." *American Political Science Review* 106(03):533–547.

Kathlene, Lyn. 1994. "Power and Influence in State Legislative Policymaking: The Interaction of Gender and Position in Committee Hearing Debates." *American Political Science Review* 88(03):560–576.

Keeler, John TS. 1993. "Opening the Window for Reform Mandates, Crises, and Extraordinary Policy-Making." *Comparative Political Studies* 25(4):433–486.

Kingdon, John W. 1995. *Agendas, alternatives, and public policies.* 2nd ed. Harper Collins Publishers, New York.

Klüver, Heike and Iñaki Sagarzazu. 2013. "Ideological congruency and decision-making speed: The effect of partisanship across European Union institutions." *European Union Politics* 14(3):388–407.

Klüver, Heike and Jae-Jae Spoon. 2013. "Bringing salience back in: Explaining voting defection in the European Parliament." *Party Politics* 21(4):553–564.

Koford, Kenneth J. 1982. "Centralized vote-trading." *Public Choice* 39(2):245–268.

Komai, Mana and Philip J Grossman. 2009. "Leadership and group size: An experiment." *Economics Letters* 105(1):20–22.

Komai, Mana, Philip J Grossman and Travis Deters. 2011. "Leadership and information in a single-shot collective action game: An experimental study." *Managerial and Decision Economics* 32(2):119–134.

König, Thomas, Bjorn Lindberg, Sandra Lechner and Winfried Pohlmeier. 2007. "Bicameral conflict resolution in the European Union: an empirical analysis of conciliation committee bargains." *British Journal of Political Science* 37(02):281–312.

Krasner, Stephen D. 1984. "Approaches to the state: Alternative conceptions and historical dynamics." *Comparative Politics* 16(2):223–246.

Krehbiel, Keith. 1993. "Where's the Party?" *British Journal of Political Science* 23(2):235 – 266.

Krehbiel, Keith. 2006. "Partisan Roll Rates in a Nonpartisan Legislature." *The Journal of Law, Economics and Organization* 23(1):1 – 23.

Krehbiel, Keith. 2010. *Pivotal politics: A theory of US lawmaking.* University of Chicago Press.

Kreppel, Amie. 2000. "Rules, Ideology and Coalition Formation in the European Parliament: Past, Present and Future." *European Union Politics* 1(3):340 – 362.

Kreppel, Amie. 2002. *The European Parliament and Supranational Party System: A Study in Institutional Development.* Cambirdge University Press, Cambridge.

Kreppel, Amie and George Tsebelis. 1999. "Coalition Formation in the European Parliament." *Comparative Political Studies* 32(8):933 – 966.

Kreppel, Amie and Simon Hix. 2003. "From "Grand Coalition" To Left-Right Confrontation: Explaining the Shifting Structure of Party Competition in the European Parliament." *Comparative Political Studies* 36(1/2):75 – 96.

Krook, Mona Lena and Diana Z O'Brien. 2012. "All the president's men? The appointment of female cabinet ministers worldwide." *The Journal of Politics* 74(03):840–855.

Ladd, Jonathan McDonald. 2007. "Predispositions and public support for the president during the war on terrorism." *Public Opinion Quarterly* 71(4):511–538.

Lane, Philip R. 2012. "The European Sovereign Debt Crisis." *Journal of Economic Prespectives* 26(3):49–68.

Lannoo, Karel. 2011. "The EU's Response to the Financial Crisis: A mid-term review." *Hampshire* 24:26.

Larcinese, Valentino and Indraneel Sircar. 2012. "Crime and Punishment the British Way: Accountability Channels Following the MPs' Expenses Scandal." *EPSA 2013 Annual General Conference Paper* .

Lauderdale, Benjamin and Alexander Herzog. 2016. "Measuring Political Positions from Legislative Speech." *Political Analysis* 24(3):374–394.

Lauderdale, Benjamin E and Tom S Clark. 2012. "Scaling Meaningful Political Dimensions Using Texts and Votes." *Political Analysis* 20(3):329–350.

Laver, Michael and Kenneth A Shepsle. 1994. *Cabinet Ministers and Parliamentary Government.* Cambridge University Press.

Laver, Michael and Kenneth A Shepsle. 1999. How Political Parties Emerged From The Primeval Slime. In *Party Discipline and Parliamentary Government*, ed. Shaun Bowler, David Farrell and Richard Katz. Ohio State Press, Ohio pp. 23–52.

Laver, Michael, Kenneth Benoit and John Garry. 2003. "Extracting policy positions from political texts using words as data." *American Political Science Review* 97(02):311–331.

Levi, Margaret. 2006. "Why we need a new theory of government." *Perspectives on Politics* 4(01):5–19.

Lindstädt, René, Jonathan B Slapin and Ryan J Vander Wielen. 2011. "Balancing competing demands: position taking and election proximity in the European Parliament." *Legislative Studies Quarterly* 36(1):37–70.

Little, Thomas H, Dana Dunn and Rebecca E Deen. 2001. "A view from the top: Gender differences in legislative priorities among state legislative leaders." *Women & Politics* 22(4):29–50.

Lockwood, Penelope. 2006. "Someone like me can be successful: Do College Students Need Same-Gender Role Models?" *Psychology of Women Quarterly* 30(1):36–46.

Lovenduski, Joni. 2005. *Feminizing politics.* Polity.

Lovenduski, Joni and Pippa Norris. 1996. *Women in politics.* Vol. 4 Oxford University Press.

Lovenduski, Joni and Pippa Norris. 2003. "Westminster women: The politics of presence." *Political studies* 51(1):84–102.

Luong, Pauline Jones and Erika Weinthal. 2004. "Contra coercion: Russian tax reform, exogenous shocks, and negotiated institutional change." *American Political Science Review* 98(01):139–152.

Lupia, Arthur and Kaare Strøm. 1995. "Coalition termination and the strategic timing of parliamentary elections." *American Political Science Review* 89(03):648–665.

Mansbridge, Jane. 1999. "Should blacks represent blacks and women represent women? A contingent "yes"." *The Journal of Politics* 61(03):628–657.

Mansbridge, Jane. 2005. "Quota problems: Combating the dangers of essentialism." *Politics & Gender* 1(04):622–638.

Marks, Gary, Liesbet Hooghe, Marco R Steenbergen and Ryan Bakker. 2007. "Crossvalidating data on party positioning on European integration." *Electoral Studies* 26(1):23–38.

Martinez-Gallardo, Cecilia. 2011. "Designing cabinets: presidential politics and cabinet instability in Latin America." *University of Notre Dame, Kellogg Institute Working Paper* (375).

Marx, David M and Jasmin S Roman. 2002. "Female role models: Protecting women's math test performance." *Personality and Social Psychology Bulletin* 28(9):1183–1193.

Marx, David M and Phillip Atiba Goff. 2005. "Clearing the air: The effect of experimenter race on target's test performance and subjective experience." *British Journal of Social Psychology* 44(4):645–657.

Matland, Richard E and Donley T Studlar. 1996. "The contagion of women candidates in single-member district and proportional representation electoral systems: Canada and Norway." *The Journal of Politics* 58(03):707–733.

Matland, Richard E and Donley T Studlar. 2004. "Determinants of legislative turnover: a cross-national analysis." *British Journal of Political Science* 34(01):87–108.

Matsa, David A and Amalia R Miller. 2013. "A Female Style in Corporate Leadership? Evidence from Quotas." *American Economic Journal: Applied Economics* 5(3):136–169.

Mattila, Mikko. 2004. "Contested decisions: Empirical analysis of voting in the European Council of Ministers." *European Journal of Political Research* 43(1):29 – 50.

McCarty, Nolan. 2007. The Policy Effects of Political Polarization. In *The Transformation of American Politics: Activist Government and the Rise of Conservatism*, ed. Paul Pierson and Theda Skocpol. Princeton University Press, Princeton pp. 223 – 255.

McElroy, Gail. 2001. "Committees and Party Cohesion in the European Parliament." *Paper presented at the 2001 annual meeting of the American Political Science Association* .

McElroy, Gail and Kenneth Benoit. 2007. "Party Groups and Policy Positions in the European Parliament." *Party Politics* 13(1):5 – 28.

McElroy, Gail and Kenneth Benoit. 2010. "Party Policy and Group Affiliation in the European Parliament." *British Journal of Political Science* 40(2):377 – 398.

McElroy, Gail and Kenneth Benoit. 2011. "Policy positioning in the European Parliament." *European Union Politics* 13(1):150 – 167.

McKelvey, Richard D. 1976. "Intransitivities in multidimensional voting models and some implications for agenda control." *Journal of Economic Theory* 12(3):472–482.

Meernik, James. 1993. "Presidential support in Congress: Conflict and consensus on foreign and defense policy." *The Journal of Politics* 55(03):569–587.

Mendelberg, Tali, Christopher F Karpowitz and J Baxter Oliphant. 2014. "Gender inequality in deliberation: Unpacking the black box of interaction." *Perspectives on Politics* 12(01):18–44.

Mendelberg, Tali, Christopher F Karpowitz and Nicholas Goedert. 2014. "Does Descriptive Representation Facilitate Women's Distinctive Voice? How Gender Composition and Decision Rules Affect Deliberation." *American Journal of Political Science* 58(2):291–306.

Mendez, Jeanette Morehouse and Tracy Osborn. 2010. "Gender and the perception of knowledge in political discussion." *Political Research Quarterly* 63(2):269–279.

Mihalcea, Rada and Paul Tarau. 2004. "TextRank: Bringing order into texts." *Association for Computational Linguistics* .

Neto, Octavio Amorim, Gary Cox and Mathew McCubbins. 2003. "Agenda Power in Brazil's Camara Dos Deputados, 1989 – 98." *World Politics* 55(4):550 – 578.

Neumark, David and Rosella Gardecki. 1996. Women helping women? Role-model and mentoring effects on female Ph. D. student in economics. Technical report National Bureau of Economic Research.

Nixon, Lucia A and Michael D Robinson. 1999. "The educational attainment of young women: Role model effects of female high school faculty." *Demography* 36(2):185–194.

O'Brien, Diana Z. 2015. "Rising to the Top: Gender, Political Performance, and Party Leadership in Parliamentary Democracies." *American Journal of Political Science* 59(4):1022–1039.

Page, Lawrence, Sergey Brin, Rajeev Motwani and Terry Winograd. 1999. The PageRank citation ranking: bringing order to the Web. Technical Report 1999-66 Stanford InfoLab.

Paulo, Sebastian. 2011. "Europe and the Global Financial Crisis: Taking Stock of the EU's Policy Response." *Robert Schuman Foundation Fact Sheet* .

Pearson, Kathryn and Logan Dancey. 2011. "Speaking for the underrepresented in the House of Representatives: Voicing women's interests in a partisan era." *Politics & Gender* 7(04):493–519.

Persson, Anna and Martin Sjöstedt. 2012. "Responsive and responsible leaders: A matter of political will?" *Perspectives on Politics* 10(03):617–632.

Peters, B Guy, Jon Pierre and Desmond S King. 2005. "The politics of path dependency: Political conflict in historical institutionalism." *Journal of Politics* 67(4):1275–1300.

Phillips, Anne. 1995. *The Politics of Presence.* Oxford University Press.

Pierson, Paul. 2000. "Increasing returns, path dependence, and the study of politics." *American Political Science Review* 94(2):251–267.

Pitkin, Hanna Fenichel. 1967. *The Concept of Representation.* University of California Press, Berkeley.

Poole, Keith T. 2005. *Spatial models of parliamentary voting.* Cambridge University Press.

Poole, Keith T and Howard L Rosenthal. 2011. *Ideology and congress.* Vol. 1 Transaction Publishers.

Poole, Keith T. and Howard Rosenthal. 1997. *Congress: A Political-economic History of Roll Call Voting.* Oxford University Press, Oxford.

Prins, Brandon C and Bryan W Marshall. 2001. "Congressional support of the president: A comparison of foreign, defense, and domestic policy decision making during and after the Cold War." *Presidential Studies Quarterly* 31(4):660–678.

Proksch, Sven-Oliver and Jonathan B Slapin. 2012. "Institutional foundations of legislative speech." *American Journal of Political Science* 56(3):520–537.

Quinn, Kevin M, Burt L Monroe, Michael Colaresi, Michael H Crespin and Dragomir R Radev. 2010. "How to analyze political attention with minimal assumptions and costs." *American Journal of Political Science* 54(1):209–228.

R Core Team. 2015. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing.
**URL:** *https://www.R-project.org/*

Rask, Kevin N and Elizabeth M Bailey. 2002. "Are faculty role models? Evidence from major choice in an undergraduate institution." *The Journal of Economic Education* 33(2):99–124.

Reif, Karlheinz and Hermann Schmitt. 1980. "Nine Second Order National Elections: A Conceptual Framework for the Analysis of European Election Results." *European Journal of Political Research* 8(1):3 – 44.

Reingold, Beth. 2008. Women as Officeholders: Linking Descriptive and Substantive Representation. In *Political Women and American Democracy.* Cambridge University Press chapter 9, pp. 128 – 147.

Richman, Jessie. 2011. "Parties, Pivots and Policy: The Status Quo Test." *American Political Science Review* 105(1):151 – 165.

Riker, William H. 1990. Heresthetic and rhetoric in the spatial model. In *Advances in the spatial theory of voting*, ed. James M. Enelow and Melvin J. Hinich. Cambridge University Press Cambridge pp. 46–50.

Riker, William H. 1996. *The strategy of rhetoric: Campaigning for the American Constitution.* Yale University Press.

Ringe, Nils. 2010. *Who Decides, and How?* Oxford University Press.

Roberts, Margaret E, Brandon M Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder-Luis, Shana Kushner Gadarian, Bethany Albertson and David G Rand. 2014. "Structural Topic Models for Open-Ended Survey Responses." *American Journal of Political Science* 58(4):1064–1082.

Robinson, Gregory. 2015. "Competing Agendas in Theories of Congress: Assessing Agenda Control Using Counterfactual Data." *The Journal of Politics* 77(3):749–761.

Rogers, Robert and Rhodri Walters. 2006. *How parliament works.* Pearson.

Rohde, David W. 1991. *Parties and leaders in the postreform House.* University of Chicago Press.

Romer, Thomas and Howard Rosenthal. 1978. "Political resource allocation, controlled agendas, and the status quo." *Public Choice* 33(4):27 – 43.

Ruddock, Joan. 2003. "Speech on International Women's Day.".
**URL:** *http://www.theyworkforyou.com/debates/?id=2003-03-06.976.0*

Russell, Catherine A and Mark W DeLancey. 2002. "African Women in Cabinet Positions-Too Few, Too Weak: A Research Report." *Asian Women* 15:147–163.

Russell, Meg. 2009. "House of Lords Reform: Are We Nearly There Yet?" *The Political Quarterly* 80(1):119–125.

Sapiro, Virginia. 1981. "Research frontier essay: When are interests interesting? The problem of political representation of women." *American Political Science Review* 75(03):701–716.

Schattschneider, Elmer E. 1942. *Party Government.* Greenwood Press.

Schimmelfennig, Frank. 2014. "European Integration in the Euro Crisis: The Limits of Postfunctionalism." *Journal of European Integration* 36(3):321 – 337.

Schmidt, Susanne K. 2001. A constrained Commission: informal practices of agenda-setting in the Council. In *The rules of integration: Institutionalist approaches to the study of Europe*, ed. Gerard Schneider and Mark Aspinwall. Manchester University Press chapter 6, pp. 125 – 146.

Schofield, Norman. 2006. *Architects of Political Change.* Cambridge University Press.

Schwartz, Thomas. 1977. "Collective choice, separation of issues and vote trading." *American Political Science Review* 71(03):999–1010.

Seeber, Richard. 2008. "Speech to the European Parliament.".
**URL:** *http://goo.gl/g4QJpS*

Shepsle, Kenneth A. 2006. Rational Choice Institutionalism. In *The Oxford Handbook of Political Institutions*, ed. R. A. W. Rhodes, Sarah A. Binder and Bert A. Rockman. Oxford University Press pp. 23–38.

Shepsle, Kenneth A. 2010. *Analyzing Politics*. 2nd ed. W.W.Norton and Company.

Shor, Boris and Nolan McCarty. 2011. "The ideological mapping of American legislatures." *American Political Science Review* 105(03):530–551.

Shugart, Matthew S. and John M. Carey. 1992. *Presidents and Assemblies: Constitutional Design and Electoral Systems*. Cambirdge University Press, Cambridge.

Sieberer, Ulrich. 2006. "Party unity in parliamentary democracies: A comparative analysis." *The Journal of Legislative Studies* 12(2):150 – 178.

Skjæveland, Asbjørn. 2001. "Party Cohesion in the Danish Parliament." *The Journal of Legislative Studies* 7(2):35 – 56.

Slapin, Jonathan B and Sven-Oliver Proksch. 2008. "A scaling model for estimating time-series party positions from texts." *American Journal of Political Science* 52(3):705–722.

Snyder Jr, James M, Michael M Ting and Stephen Ansolabehere. 2005. "Legislative bargaining under weighted voting." *American Economic Review* 95(4):981–1004.

Spirling, Arthur and Iain McLean. 2007. "UK OC OK? Interpreting optimal classification scores for the UK House of Commons." *Political Analysis* 15(1):85–96.

Spirling, Arthur and Kevin Quinn. 2010. "Identifying intraparty voting blocs in the UK House of Commons." *Journal of the American Statistical Association* 105(490):447–457.

Stan Development Team. 2014. "Stan: A C++ Library for Probability and Sampling, Version 2.2.".
**URL:** *http://mc-stan.org/*

Stout, Jane G, Nilanjana Dasgupta, Matthew Hunsinger and Melissa A McManus. 2011. "STEMing the tide: using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics (STEM)." *Journal of personality and social psychology* 100(2):255.

Studlar, Donley T and Gary F Moncrief. 1999. "Women's work? The distribution and prestige of portfolios in the Canadian provinces." *Governance* 12(4):379–395.

Taylor, John B. 2009. "The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong." Working Paper.

Taylor-Robinson, Michelle M and Roseanna Michelle Heath. 2003. "Do women legislators have different policy priorities than their male colleagues? A critical case test." *Women & Politics* 24(4):77–101.

Thelen, Kathleen. 2004. *How institutions evolve: The political economy of skills in Germany, Britain, the United States, and Japan.* Cambridge University Press.

Thomson, Rob, Tamar Murachver and James Green. 2001. "Where is the gender in gendered language?" *Psychological Science* 12(2):171–175.

Toshkov, Dimiter and Anne Rasmussen. 2012. "Time to Decide: The effect of early agreements on legislative duration in the EU." *European Integration online Papers (EIoP)* 14.

Treaty of Lisbon. 2007. "Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community." *Official Journal of the European Union* .

Tsebelis, George. 2002. *Veto players: How political institutions work.* Princeton University Press.

Tsebelis, George and Amie Kreppel. 1998. "The history of conditional agenda-setting in European institutions." *European Journal of Political Research* 43(1):41 – 71.

Van Orden, Geoffrey. 2006. "Very well, alone! Why the UK's Tories are leaving the EPP-ED group." *Europe's World.*
**URL:** *http://europesworld.org/2006/06/01/very-well-alone-why-the-uks-tories-are-leaving-the-epp-ed-group*

Wang, Mingzhu and Elisabeth Kelan. 2013. "The gender quota and female leadership: Effects of the Norwegian gender quota on board chairs and CEOs." *Journal of business ethics* 117(3):449–466.

Wängnerud, Lena. 2009. "Women in parliaments: Descriptive and substantive representation." *Annual Review of Political Science* 12:51–69.

Warntjen, Andreas, Simon Hix and Christophe Crombez. 2008. "The party political make-up of EU legislative bodies 1." *Journal of European Public Policy* 15(8):1243–1253.

Wasserfallen, Fabio. 2014. "Political and Economic Integration in the EU: The Case of Failed Tax Harmonization." *Journal of Common Market Studies* 52(2):420 – 435.

Weingast, Barry R. 1979. "A rational choice perspective on congressional norms." *American Journal of Political Science* 23(2):245–262.

Weingast, Barry R and William J Marshall. 1988. "The industrial organization of Congress; or, why legislatures, like firms, are not organized as markets." *The Journal of Political Economy* 96(1):132–163.

Whitaker, Richard. 2011. *The European Parliament's Committees: National party influence and legislative empowerment.* Routledge.

Williams, Russell Alan. 2009. "Exogenous shocks in subsystem adjustment and policy change: the credit crunch and Canadian banking regulation." *Journal of Public Policy* 29(01):29–53.

Wilson, Rick K and Carl M Rhodes. 1997. "Leadership and credibility in n-person coordination games." *Journal of Conflict Resolution* 41(6):767–791.

Wittkopf, Eugene R and James M McCormick. 1998. "Congress, the President, and the End of the Cold War Has Anything Changed?" *Journal of Conflict Resolution* 42(4):440–466.

Wolbrecht, Christina and David E Campbell. 2007. "Leading by example: Female members of parliament as political role models." *American Journal of Political Science* 51(4):921–939.

Woon, Jonathan and Ian Palmer Cook. 2015. "Competing Gridlock Models and Status Quo Policies." *Political Analysis* 23(3):385–399.

Yordanova, Nikoleta and Monika Mühlböck. 2015. "Tracing the selection bias in roll call votes: Party group cohesion in the European Parliament." *European Political Science Review* 7(03):373–399.

Zubek, Radoslaw. 2011. "Agenda Control and Partisan Politics in European Legislatures." *Presented at ECPR Joint Sessions of Workshops, St Gallen, April 12 - 17* .