Incentives for Non-Participation

Absence in the United Kingdom House of Commons, 1997-2015

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Abstract

The ability to hold MPs accountable for their actions is one of the cornerstones of modern representative democracy. While it is important for MPs to send signals to both their constituents and to their party, a large number of MPs remain absent from votes. These absences are an important part of the MP's toolbox, however, their use comes with some limitations, rooted in electoral and political constraints. We argue that conditional on the electoral cycle, some well established political constraints along the government and opposition lines will vary in strength and influence the potential use of absence. We analyze the absence probability of MPs in the United Kingdom from 1997 to 2015 and find that as the next elections are approaching, political constraints weaken and electoral ones take over. This is reflected by converging absences between opposition and government MPs overall, but there are marked differences between legislatures.

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Many bills are passed with a high proportion of legislators absent, which can limit constituents' ability to make informed accountability judgments (Arnold, 1992). While most absences will not be remembered in history there are examples where votes are lost with just a few votes, and the most famous one relates to the fall of the Callaghan government in 1979. When a no confidence motion was called in 1979 the Labour government did not ask one of the ill members, Alfred Broughton, to travel to London to support the government and neither did they manage to get Frank Maguire, an independent MP from Northern Ireland to appear and vote despite him being in the Palace of Westmister (Crewe, 2015, pp. 70–71). The Labour government lost the vote by one and had either Broughton or Maguire voted in favour of the government it would have been a tie and convention would have meant the government would have survived.

While public service motivations of legislative activity suggest that representatives should be mostly present (Staats, 1988), absence becomes a tool to prioritize tasks and manage workload (Cain et al., 1979; Fenno, 1977). However, decisions to be absent are not free of limitations. Legislators need to ensure they do enough for their party to get re-selected as candidates (in terms of supporting legislation), but not so much that it might interfere with their service to their constituents as they are needed for reelection.

Constituency work often means obligations and presence outside of parliament (Cain et al., 1984) and such work might contribute to favorable evaluations (Vivyan & Wagner, 2016). At the same time, MPs in parliamentary systems are governed by strong parties, where the most important goal for the governing party is to pass its policies (Johnston et al., 2002). This is especially the case in the Westminster system, where a strong government-opposition divide structures voting behavior and the government has very strong legislative agenda setting power (Döring, 1995; Hix & Noury, 2016). Overall, this two principal setup results in political and electoral constraints (for party unity see Carey, 2007).

We ask in this paper how do political and electoral constraints impact MPs' decision to be absent and how might MPs resolve the tension between these constraints. We use voting data from four parliaments (1997 to 2015) in the UK House of Commons (HoC), which allows us to examine the topic over a longer period of time in a non-U.S. setting with strong parties and a strongly individualized electoral system, and with changing government-opposition composition. Thus,

we also extend the discussion on how institutionally dependent our general absence conceptualization is. We show that government MPs face stronger political constraints compared to opposition MPs, however, as the next elections are approaching these constraints weaken, reflected by converging absence likelihood between opposition and government MPs. However, legislature specific features condition whether these changes are present and how they unfold.

Political and electoral constraints of absence

Absence refers to the situation when an MP or representative is not present for a vote in the legislative body. Kam (2009) distinguishes between 'simple' and 'deliberate' absence, where the latter is similar to position avoidance. In such cases absence is non-random and non-ignorable for roll call analysis (Rosas & Shomer, 2008; Rosas et al., 2015) and can be a lower cost alternative to dissent, if MPs want to avoid position taking.[1]

Analogous to questions of party unity (Carey, 2007), the decision to be absent is framed as a 'competing principals' question. This framework can be extended even for cases where absence is not used for avoiding unattractive positions on a bill, by regarding principals more generally. This is especially important, because only few parliaments allow researchers to outright distinguish between absence and abstention (see for example the Swedish Riksdag in Willumsen & Öhberg, 2017). Indeed, there is no way to officially record an abstention in the HoC, thus abstention becomes an available option for British MPs in the form of absence.[2]

Most previous research focuses on electoral and political constraints[3], since these map well to the idea of constituents and political parties (or legislative party groups) as principals, although sometimes both principals affect electoral or political constraints. When studying different constraints or principals, we need to highlight context specific characteristics. Given the strength of political parties in the United Kingdom, an MP cannot necessarily choose her position on bills

[1] Despite the rare-event nature of rebellions much more attention has been given to those situations where MPs vote against their party (Benedetto & Hix, 2007; Cowley, 2002; Slapin et al., 2018). While evidence from the US suggests that there is little effect of rebelling (Donnelly, 2019), survey evidence from the UK suggests some electoral benefits to be gained by rebelling (Campbell et al., 2019).

[2] A possibility is to vote in both the Aye and No lobbies, although this is extremely infrequent in use, and also used if a member has voted in the wrong lobby to nullify their original vote (Divisions in the House of Commons: House of Commons Background Paper, Standard Note: SN/PC/06401, Last updated: 2 August 2013).

[3] For the potential role of institutional constraints see Fortunato and Provins (2017).

and votes independently of the party. This has two implications.

First, the parties use party whips to control the voting, specifically the pairing tool for absences. Pairing is an informal tool which in effect allows a member from the government and one from the opposition to be absent simultaneously, i.e. not changing the power balance between government and opposition (see Crewe, 2015, pp. 69–72). Given the informal nature of pairing there is no way of a priori knowing which absent members are paired to be absent and who are not (Crewe, 2015). Second, it is also challenging to establish ideal positions of individual MPs, whether from candidate studies with weak response rates (Benedetto & Hix, 2007) or from actual parliament votes (Spirling & McLean, 2007; Spirling & Quinn, 2010). These features point to the presence of *political constraints* associated with the party as principal.

Previous works have shown that the use of absences can also be linked to political constraints. On the one hand, political constraints are weaker for more senior MPs and they tend to be absent more frequently (Longley, 2003), potentially because they are more familiar with formal and informal rules that govern parliamentary behavior or their personal status. From the literature on dissent we know that political constraints are stronger if one's own party or committee proposed the bill (Willumsen & Goetz, 2017). From studies of absence we do known that the political constraints are stronger when a vote is more salient for the party (Forgette & Sala, 1999). Furthermore, according to Cohen and Noll (1991), those few who decide not to turn out for such salient votes use their absences purposely in order to enhance influence and pay off, especially when they perceive the result to be very close. However, the generalization of the findings by Cohen and Noll are critiqued by Rothenberg and Sanders (1999, p. 314) who argue that since Cohen and Noll (1991) only look at one issue and one point in time they are excluding the possibility of variation across the election cycle, the findings must be treated with caution.

Members of the UK HoC are elected in single-member districts with the candidate achieving the most votes winning. This generates a strong link between representatives and the electorate who can reward or punish their representative more directly. This feature gives rise to a set of *electoral constraints* associated with the constituent(s) as principal. Research from the British context has shown that targeting in constituencies and general activism is important for the overall results (Fisher et al., 2016; Fisher et al., 2014), therefore making constituency activity by the MP

important for reelection chances (Whiteley & Seyd, 1994, 2003). Ultimately, in terms of voter preferences in Britain, a moderate balance of legislative and constituency work is preferred (Vivyan & Wagner, 2016). Prior research documents a consistent "last-term effect" across different systems as retiring MPs decrease their presence in the legislature (Bailer & Ohmura, 2018; Geys & Mause, 2016; Jones, 2003; Lott, 1987, 1990; Willumsen & Goetz, 2017).

Furthermore, absence is influenced by other constituency features, such as transactional costs. In the U.S. setting, one such transactional cost is related to geographical distance to the capitol (Hart & Munger, 1989; Rothenberg & Sanders, 1999), which is positively associated with absence rates. While earlier studies of HoC found no relationship between distance and absence (only expenses and costs) (Besley & Larcinese, 2011), a recent study indicated very similar effects of distance to those found in the U.S. in the U.K. as well (Willumsen, 2019). Overall, less is known about how MPs use absence as a tool in Westminster systems. We have seen that considerations from dissent might be useful as a broader framework, but institutional specificity stemming from the role of parties and the electoral system requires more detailed theoretical and empirical research.

Balancing constraints

Strong political constraints would indicate more time spent in the parliament, whereas electoral or constituency focus would result in more time away from the parliament, in relative terms. For example, Zupan (1991) found that Democrats turned out less for votes than Republicans due to a greater focus by Democrats on constituency services. This then creates some tension (Norris, 1997), where the role or strength of these constraints might be changing. We develop this juxtaposition and focus here on government *vs* opposition related political constraints on the one hand, and changing electoral constrains depending on the electoral cycle on the other hand.

First, we argue that government MPs face stronger political constraints than opposition MPs. This is not a novel proposition (see below) and it should result in lower absence likelihood for government MPs. Theoretically, this is due to the fact that the government is responsible for keeping the chamber quorate (granted, a minor form of constraint) and for safeguarding the passage of the government initiatives, translating into less freedom in terms of absence for government MPs. Empirically, prior research in parliamentary systems found that the government-opposition

dimension matters for dissent: being a member of the government side reduces dissent, even overwriting policy differences (Willumsen & Öhberg, 2017). For absence, the results are similar in a non-parliamentary system: Brown and Goodliffe (2017) studied absence in U.S. state legislatures and found evidence that being part of the majority party decreases absence. Overall, government-opposition absence differences were documented in a non-parliamentary system, and dissent related differences were documented in a parliamentary system, we expand by testing the government-opposition absence difference in a parliamentary system across multiple legislatures. We test the following hypothesis:

H_1 *Government MPs are less likely to be absent than opposition MPs.*

As documented by Rothenberg and Sanders (1999, p. 314), MPs will face different electoral situations and this translates into systematic variation in absence across the election cycle. However, we do not know whether these electoral constraints influence government and opposition MPs in the same way, or, put it differently, stronger political constraints persist throughout the full electoral cycle for the government MPs. Changes throughout the term are multi-faceted, hence we will consider multiple avenues of influence.

First, strengthening electoral constraints should influence both opposition and government MPs, especially the MPs standing for re-election who return to their constituents as incumbents. Previously, this incumbency advantage has been shown to be rather small in the UK (Gaines, 1998), but varying among parties (Smith, 2013). There is no systematic evidence though for differences in these advantages for opposition *vs* government MPs. Overall, this first component would suggest that, in comparison to early stages of the term, absence rates should increase as we approach the next elections, and this increase should not depend on the MP's government or opposition status.

Second, political constraints can weaken as well. We argue that in this case government and opposition MPs should be affected differently. There is an acknowledgment that MPs will at times be required to be elsewhere than Westminster either for political or personal reasons (Cain et al., 1979, 1984; Heitshusen et al., 2005; Searing, 1985). End of term electoral obligations are known to the party, and the party itself benefits from allowing MPs to maximize their reelection chances, and they do have some tools at their disposal. The government has full control over the

parliamentary agenda (Döring, 1995), hence it is usually able to control when divisions are called, and thus planning is easier for the government.[4]

To reduce the conflict in between having to be present and engage in campaigning, the government can schedule less important and less conflictual divisions towards the end of the legislative term. The literature on legislative business cycles (Brechler & Gerl, 2014; Lagona & Padovano, 2008; Padovano & Gavoille, 2017) suggests that legislative activity (in terms of bills) traditionally increases towards the end of the legislative period to prepare for an election. While a legislative business cycle is present in the UK, it is the reverse of what is established in other cases, as the number of bills introduced and passed declines towards the end of the parliaments.[5]

This consideration is important because it stipulates that, while government MPs are more constrained, their party can accommodate the constraints if needed, especially when electoral needs require this. Essentially, with the agenda control, the government can coordinate in a way that important legislation will be discussed on days where most of their MPs do not have to be absent for different reasons and make sure that once they have to be absent, the legislation in question is less important.

Theoretically, this should not have a similarly strong influence on how opposition MPs behave, especially in contexts with strong government majority. They do not have a realistic chance to stop the government's attempt to pass legislation, if the government can maintain order within its own ranks.[6] Towards the end of the legislature, if indeed we see a weakening presence from government MPs it might actually be easier to put pressure on the government, however, if low importance or low priority legislation is being voted on in this period, this should not necessarily influence the opposition MP presence either. Thus, in line with the idea of a stronger government control, but shared electoral constraints we hypothesize that:

H_2 *Throughout the legislative term, there is a smaller increase in absence for opposition MPs, in comparison to government MPs.*

[4]Given the presence of Opposition days, they have yet another advantage in terms of planning and concentrated discussion of proposals from the opposition side, which they might want to avoid.

[5]Acts and Statutory Instruments: The volume of UK legislation 1950 to 2016. House of Commons Briefing Paper CBP 7438, 21 April 2017.

[6]The opposition might spend more time in the House of Commons to influence legislation (Dewan & Spirling, 2011) when that is more important, but not necessarily for the actual vote in the division, since they attempt to influence the content of the bill.

Given the shared electoral constraints, there can be some increase in the absences among opposition MPs as we are approaching the end of the term, because more information about when the election is coming (in some of our example legislatures, also mentioned in the paper), which generally translates into some increase of absence generated by crystallized electoral constraints. Opposition MPs can afford higher absence rates already in the beginning of the term. Thus, the implication, The difference between government and opposition MP absence rates decreases towards the end of the legislative term.

Overall, we explain absence patterns as a product of constraints related to maximizing the chances of reelection while serving one's party under certain institutional functioning rules. Hence, the strategic use of absence is a set of decisions that aims at balancing these different pressures (or principals), while respecting the day-to-day structure and schedule imposed through institutional rules. We now introduce our data and the modeling approach that captures these different aspects in a comparative manner.

Data and method

Our analysis includes all divisions voted on in the HoC during four parliaments covering the time period 1997 to 2015. The votes were centralized and made available by The Public Whip project (ThePublicWhip, 2015) and our outcome variable is coded as 1 if a particular MP was absent for the vote on a particular division.[7] When present, independent of the vote choice, the variable is coded to be 0, and thus for each MP $\times$ division combination we have a valid data entry. Using the names and constituency details, MP features were added from other data sources. Constituency majority figures are from "The British Parliamentary Constituency Database, 1992-2005, Release 1.3" (Norris, 2005) and the "May 6th 2010 British General Election Constituency Results Release 5.0" (Norris, 2010), whereas other MP related features were coded by the authors.

We apply four exclusions based on MP features. First, we discard MPs from Northern Ireland, as we are looking at a subset of MPs who have extremely high absence rates and Northern Ireland

[7]While the literature on selection effects in using parliamentary voting is important (see Carrubba et al., 2006; Hug, 2010) this is primarily the case when wishing to estimate a latent dimension through some form of ideal point estimation. In this respect, our aim is to capture who is absent and under what circumstances they are absent and as such the problem of potential bias in the votes becomes less of an issue.

has a completely different party system whose actors did not play a significant role during the period covered in this paper. Second, we exclude MPs who changed parties during one legislature: those MPs who change parties are suspected of having very different motivations and parliamentary behavior. This group is quite small and not enough to test some specific expectations or aid a potentially stronger design. Furthermore, in terms of behavior, the exact date of switching registered is likely not a strict discontinuity, behavior prior to switching likely reflects some of the considerations behind the switch.

Similarly, we exclude MPs who left the HoC for various reasons, and subsequently there were by-elections held in their constituency, and those MPs who joined instead of them. Some by-election cases are due to long-term illness and death, hence prolonged absence is already observed. Some other MPs end up resigning due to various scandals, but in this case as well, the moment the by-election comes as an end-result or solution we cannot ascertain from which time-point this should influence participatory motivations and behaviors. Finally, we limit our analysis to MPs who were not ministers, also excluding members of the shadow cabinet.[8] It is expected that they will generally be absent for votes, with clear activities outside the division lobbies.

In total, we analyze 5033 divisions and the behavior of 1035 MPs. As many MPs are present in multiple legislatures, but there are context and potentially role related differences, we will treat them as separate instances across different legislatures. This step also assures that we are not conflating within- and between-MP differences when it comes to MP specific features. This results in 2173 observations at the MP level; detailed sample size breakdowns are reported in Appendix **A1**.

Predictors

The first set of predictors is defined at the division cross-section level, or it can be regarded as division-specific. Most importantly, we measure the electoral cycle related differences through the number of (calendar) days remaining until the next election and we reverse this, so that larger numbers reflect more proximity to the upcoming elections. In order to account for the effects of week days (Noury, 2004), we use a nominal variable for day of the week the division was voted on, with Wednesday as the baseline category.

[8] We ascertained ministerial roles based on official records of governmental composition and parliamentary records. Ministers are defined as Cabinet Ministers and Ministers of State who are allowed to attend Cabinet.

Furthermore, we differentiate between bills proposed by different sides, i.e. government (1) *vs* opposition (0), and also control for the potential importance of the bill. We account for differences in bill or division importance (or the lack of it) by calculating vote majority as: $\mathsf{abs}(\frac{\mathsf{Total}_{\mathsf{Yes}}-\mathsf{Total}_{\mathsf{No}}}{\mathsf{Total}_{\mathsf{Yes}}+\mathsf{Total}_{\mathsf{No}}})$. In this case, 0 would reflect a perfect tie (and likely high importance) and 1 would indicated that all present MPs voted in the same way (for or against the division, low importance). We include a nominal variable that describes the topical content of the division, machine coded based on the Comparative Agendas Project component covering the Acts of Parliament (Bevan et al., 2011; John et al., 2013). As we only employ this five broader topic categorization (Economy/Trade/Industry (baseline), Social issues/Civil Rights, Government Expenditure, Defense/Foreign Policy and Government Operations) as a content related control with no prior expectations based on the literature, we describe the variable coding more in detail in Appendix **A2**.

Our second set of predictors is defined at the MP level. We code government (1) and opposition (0) MPs. We code retirement as a dichotomous variable (1 for retiring next election, 0 otherwise). Those MPs who re-ran for office but lost are not coded as retiring.[9] Constituency majority reflects the winning margin in the elections preceding the current legislature, expressed in terms of the difference in the percentage of popular votes between the winner and the runner-up in a constituency.

Seniority has been coded as the time elapsed (in years) from the first year an MP entered Parliament based on official MP biographies and the start of the actual legislature analyzed. In most cases, MP seniority entails an unbroken length of service. Where there was a break of service, the first year of entry is used as the basis of the seniority calculation.[10] Constituency distance from Westminster is driving distance measured in kilometers (through the Google Maps API), with largest local authority in a particular constituency as a starting point and Westminster as an endpoint.[11]

[9] We are not concerned with when an MP announces her retirement (see Willumsen & Goetz, 2017), but the notion that they do not run for reelection and have entered the disengaging career stage (Bailer & Ohmura, 2018), no longer suffering from an electoral constraint. It is also likely that the timing of announcement of retirement is not equal to when the actual decision was made and when the potential impact began.

[10] For example, Sir Peter Tapsell represented Nottingham West from 1959 until losing his seat at the 1964 election. He re-entered parliament at the 1966 election for what is now Louth and Horncastle. In this case, his seniority would be calculated from taking his first year of entry as 1959.

[11] We chose the starting point because even if MPs take the train, it is likely that they will do it from the larger towns or cities. It is not known how MPs get to Westminster, but even if there are minor differences between driving distance and distance for the train or plane for that matter, we believe there is no systematic bias given by constituency.

For the multivariate models we rescaled all continuous predictors to range from their minimum (0) to their maximum (1). Accordingly, the coefficients reported later on are effect sizes associated with a change from minimum to maximum on a variable.[12] In addition to easier interpretation, this step assures that the variables are on a comparable numerical range, facilitating model convergence. The relationships between absence likelihood and electoral cycle or government status (and their interaction) will also be summarized visually. Finally, since we fit the model to all four legislatures, we include legislature fixed effects. We list descriptive statistics for our predictors in Appendix **A1**.

Method

Since we observe the same MPs behavior across many divisions, we treat absence as a division specific quantity that is nested within MPs. As our outcome variable is dichotomous, we fit binomial models with a logit link function estimated via Restricted Maximum Likelihood, modeling directly the probability of absence *vs* presence. We list the model specifications in Table 1 below.

Table 1: Model specification

	MP $\times$ Division level (level-1)	MP level (level-2)
(1) Baseline	$\Pr(\text{y}_i = 1) = \text{logit}^{-1}(\alpha_{j[i]})$	$\alpha_j = \gamma_0^\alpha + \eta_j^\alpha$
(2) Predictors included	$\Pr(\text{y}_i = 1) = \text{logit}^{-1}(\alpha_{j[i]} + \omega\text{Close}_i + \beta\text{X}_i)$	$\alpha_j = \gamma_0^\alpha + \gamma_1^\alpha\text{Gvt}_j + \Delta^\alpha\text{U}_j + \eta_j^\alpha$
(3) Predictors and varying slope	$\Pr(\text{y}_i = 1) = \text{logit}^{-1}(\alpha_{j[i]} + \omega_{j[i]}\text{Close}_i + \beta\text{X}_i)$	$\alpha_j = \gamma_0^\alpha + \gamma_1^\alpha\text{Gvt}_j + \Delta^\alpha\text{U}_j + \eta_j^\alpha$ $\omega_j = \gamma_0^\omega + \eta_j^\omega$
(4) Government interaction	$\Pr(\text{y}_i = 1) = \text{logit}^{-1}(\alpha_{j[i]} + \omega_{j[i]}\text{Close}_i + \beta\text{X}_i)$	$\alpha_j = \gamma_0^\alpha + \gamma_1^\alpha\text{Gvt}_j + \Delta^\alpha\text{U}_j + \eta_j^\alpha$ $\omega_j = \gamma_0^\omega + \gamma_1^\omega\text{Gvt}_j + \eta_j^\omega$

Notation: In all cases: i = 1, …, n and j = 1, …, J. Level two errors are assumed to be normal: $\eta_j^\alpha \sim N(0, \sigma_\alpha^2)$, $\eta_j^\omega \sim N(0, \sigma_\omega^2)$. For the last two models, we also estimate $\rho_{(\sigma_\alpha, \sigma_\omega)}$. X represents the division-specific predictor matrix without Close included and β is the estimated coefficient vector; U represents the MP-specific predictor matrix without Government included and Δ is the estimated coefficient vector.

We use an empty varying-intercept model as our baseline, which will give us an overall average probability of absence and also between-MP variation around this. We first extend this model by

[12] Thus, a 0 value on our recoded closeness variable will reflect the first day of a legislature, and a value of 1 will mark the last day of the legislature, which is ultimately the most proximate time point to the next elections, with available voting data.

adding division and MP specific predictors and then we let the effect of electoral cycle to vary across MPs. Here, we aim to see whether MPs react differently to the approaching elections in terms of absence behavior.

In our final model, we model the between-MP variation of the electoral cycle effect as a function of the government *vs* opposition status, resulting in a cross-level interaction. In this case, rather than change in predicted absence or presence, we aim at systematically reducing the unexplained variation in why for some MPs the electoral cycle matters more for their decisions. More specifically, according to our argument we expect to see higher rate of absence increase for government MPs compared to opposition MPs, or a positive interaction term.

Results

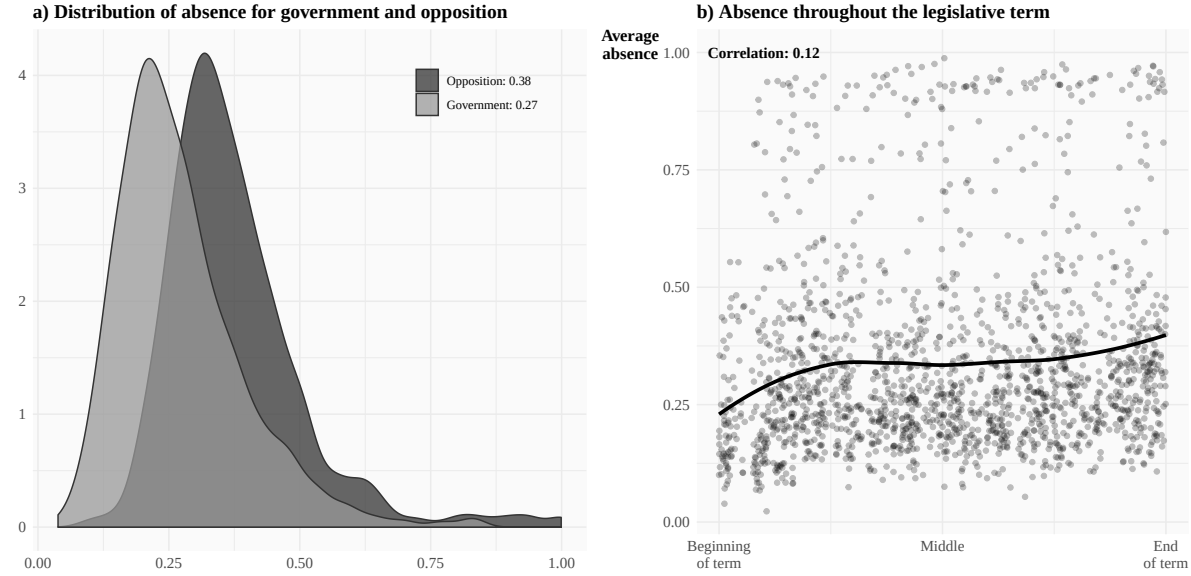
Descriptive summary and models of absence

The first step in our analysis is to have a descriptive look at the absence patterns in our data. To this end, we display MP level absences Figure 1. On average, most MPs are more likely to be present than absent (0.31 overall absence proportion), and on most days, the average presence is well above 50%, with substantial variation. The between-MP variation amounts to 13% of the total variation (on average), which suggests that while division specific variation is still the largest component in all legislatures covered here, it can only tell a partial story of absences in the HoC.

Second, we evaluate how our models perform. The relatively large dataset with unclear sample-to-population relationship and the model building steps make us deviate slightly from the usual approaches of grounding our conclusions solely on the significant/not-significant predictor dichotomy. In the first part of Table 2 we summarize customary model fit statistics for models fitted to the full data. We can see that extending our models systematically reduces model misfit, independent of the penalties for number of parameters estimated, as both the AIC and BIC decrease step-by-step. In terms of the proportion correctly predicted in the full data (labeled as *Accuracy*), we also see slight gains as we move towards more complex models, but undoubtedly the largest gains are registered when we include predictors.

While the around 5% gain in accuracy might seem small, two aspects need to be noted. First,

Figure 1: Descriptive summary



Notes: Panel a) is a density plot, with averages for each type of MP displayed as well. Panel b) is a scatter plot with LOESS line overlaid and bivariate Pearson's correlation displayed.

Table 2: Predicting absence, model performance

	Full data			*Split sample*			
	AIC	BIC	Accuracy	Accuracy	Precision	Recall	F1-score
Baseline (empty)	3165850	3163375	0.709	0.709	0.630	0.153	0.246
Predictors included	2865225	2865494	0.751	0.751	0.700	0.349	0.466
Predictors and varying slope	2839224	2839519	0.755	0.754	0.706	0.360	0.477
Government interaction	2839186	2839493	0.755	0.754	0.706	0.360	0.477

Notes: First two columns are Akaike Information Criterion and Bayesian Information Criterion values for each fitted model. For all models MP specific random effects were included in the prediction. *Accuracy* is the proportion of correctly predicted. *Precision* is the proportion of correctly predicted absences from the total absences predicted. *Recall* is the proportion of correctly predicted absences from total absences in the data. *F1-score* is a combined (harmonic mean) measure of precision and recall.

the baseline model we use as a benchmark in the comparison, while without any predictors, it is a hierarchical model that considers unmodeled between-MP variation already.[13] Second, these small proportions reflect substantial amount of "vote" instances where the more complex models offer correct predictions compared to the baseline model: across the four legislatures, we predict correctly 240091 more presences/absences using our full model.

The second part of Table 2 displays the results from an exercise in which we split our data in

[13]This approach is rather problematic to transfer to out-of-sample prediction and thus it should not be interpreted as such. For each MP, the deviations (random effects) from the grand mean are taken into account when the predicted (or rather fitted) values are calculated. Accordingly, adding a completely new MP could not employ all these pieces of information for prediction.

two parts: (1) for each MP, we randomly (without replacement) selected 1000 divisions (around 83% on average), to which we have fitted our models, and (2) the for remaining divisions we used the resulting coefficients (including MP specific effects) to predict absences and then compare to the observed values. The extended models clearly outperform the baseline, both in terms of precision and recall. Generally, our models are quite good at making correct absence predictions, however they recover correctly less than 40% of observed absences. We present additional out-of-sample validation in Appendix **A3**, focusing on MPs who joined the legislature through by-elections. Overall, we regard enhancements on accuracy and precision as more than satisfactory for advancing to the substantive discussion of our results.

Who is absent when?

Moving beyond descriptive analyses, Table 3 lists the full model results. We briefly catalog our results regarding the variables that are not core to our analysis but have been discussed in the literature. As seen, when the vote takes place is important: we find substantively very large effects for votes held on Friday, as presence in the chambers of the HoC is basically minimal at the end of the week, and this declining participation already starts on Thursday. Fridays host the Private Member bills where interest is low, but together with the decline in participation after Wednesday, these findings are consistent with a cost minimization or long-weekend benefit maximization MP behavior and weaker political constraints in terms of scheduled divisions. However, these long weekends do not span to include Monday, they rather start earlier with Thursday.[14]

We see that divisions on government bills register on average slightly more absences, which might seem surprising, however it is most likely related to the opposition not showing up at a higher rate, compared to divisions on some of the opposition submitted bills. The divisions that are close (register small vote majority) attract higher attendance, suggesting that perceived or communicated importance matters. This indicates that political constraints are stronger when the bills (or divisions) are deemed important.

More senior MPs are markedly more likely to be absent. However, constituency majority has a limited and imprecise relationship with absence probability. Our measure of constituency ma-

[14]For potential variation conditional on distance, see Willumsen (2019).

Table 3: Hierarchical models of absence probability

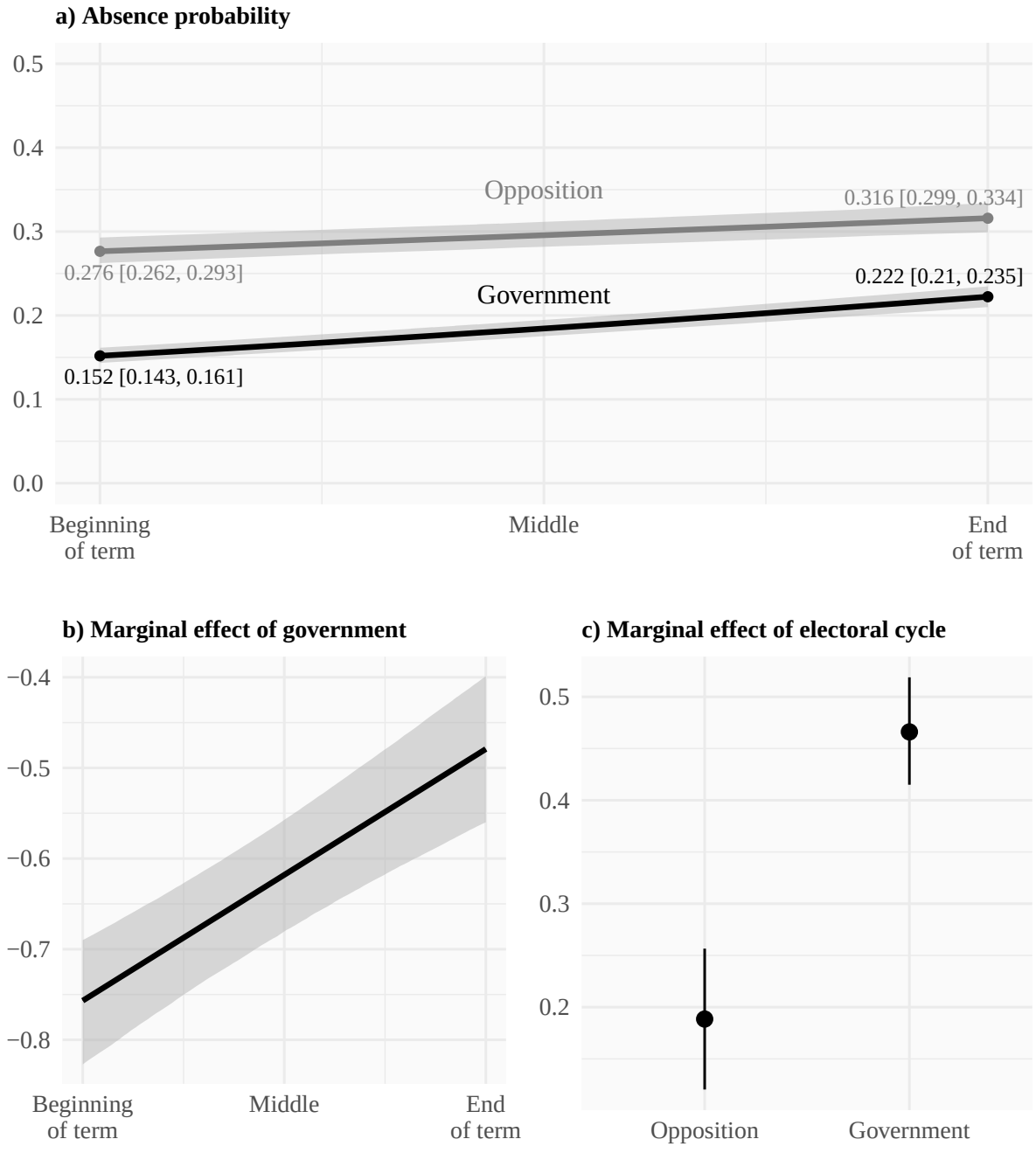
	Baseline	Predictors	Varying slope	Gvt. interaction
Intercept	$-0.861\ (0.014)^*$	$-1.826\ (0.040)^*$	$-1.829\ (0.041)^*$	$-1.764\ (0.042)^*$
Next election proximity		$0.351\ (0.005)^*$	$0.363\ (0.021)^*$	$0.189\ (0.034)^*$
Government MP		$-0.605\ (0.030)^*$	$-0.655\ (0.030)^*$	$-0.758\ (0.034)^*$
Government MP × proximity				$0.278\ (0.043)^*$
Government bill		$0.042\ (0.003)^*$	$0.042\ (0.003)^*$	$0.042\ (0.003)^*$
Vote majority		$1.766\ (0.006)^*$	$1.791\ (0.006)^*$	$1.791\ (0.006)^*$
Retiring		$0.383\ (0.040)^*$	$0.303\ (0.041)^*$	$0.304\ (0.040)^*$
Constituency majority		$-0.032\ (0.075)$	$0.027\ (0.079)$	$0.026\ (0.074)$
Distance		$0.533\ (0.075)^*$	$0.517\ (0.081)^*$	$0.518\ (0.077)^*$
Seniority		$0.956\ (0.079)^*$	$1.088\ (0.087)^*$	$1.086\ (0.077)^*$
Weekdays (Wednesday baseline)				
Thursday		$0.581\ (0.005)^*$	$0.586\ (0.005)^*$	$0.586\ (0.005)^*$
Friday		$2.150\ (0.009)^*$	$2.175\ (0.009)^*$	$2.175\ (0.009)^*$
Monday		$0.088\ (0.004)^*$	$0.089\ (0.004)^*$	$0.089\ (0.004)^*$
Tuesday		$-0.014\ (0.004)^*$	$-0.015\ (0.004)^*$	$-0.015\ (0.004)^*$
Bill topics (Economy baseline)				
Social issues/civil rights		$-0.039\ (0.004)^*$	$-0.036\ (0.004)^*$	$-0.036\ (0.004)^*$
Gvt. expenditure		$0.050\ (0.004)^*$	$0.051\ (0.005)^*$	$0.051\ (0.004)^*$
Defense and FP		$-0.035\ (0.005)^*$	$-0.034\ (0.005)^*$	$-0.034\ (0.005)^*$
Gvt. operations		$0.110\ (0.004)^*$	$0.106\ (0.004)^*$	$0.106\ (0.004)^*$
Legislatures (1997-2001 baseline)				
2001-2005 session		$-0.063\ (0.038)$	$-0.085\ (0.038)^*$	$-0.085\ (0.038)^*$
2005-2010 session		$-0.230\ (0.039)^*$	$-0.259\ (0.039)^*$	$-0.260\ (0.039)^*$
2010-2015 session		$-0.305\ (0.039)^*$	$-0.305\ (0.039)^*$	$-0.306\ (0.039)^*$
AIC	3163349.221	2865224.990	2839223.997	2839185.612
BIC	3163374.864	2865494.241	2839518.891	2839493.328
Division × MP	2734621	2734621	2734621	2734621
MPs	2173	2173	2173	2173
(Var) MPs	0.488	0.411	0.526	0.525
(Var) Proximity slope			0.913	0.895
(Cov) (Int, Proximity slope)			−0.329	−0.324

Notes: (Restricted) Maximum Likelihood estimates of logit coefficients. Standard errors in parentheses, $^*p < 0.05$.

jority could be too crude, and information regarding standing in the polling for example might be more suitable to evaluate this electoral motivation better, although this would be at party level and not for each individual MP. As an indicator of possible cost of presence, distance from Westminster is associated with higher probability of absence. We also find strong evidence for the previously documented last-terms effect, with retiring MPs registering much higher average absence probability.

Turning to our predictors of core interest, we see that once the election is approaching absences become more frequent, consistent with the explanations introduced earlier focusing on the

Figure 2: Absence probability as a function of electoral cycle for opposition and government MPs



Notes: The top panel displays predicted absence probability for government and opposition MPs as we get closer to the next elections (all other predictors held constant at their means or most frequent nominal category). Predicted values (with 95% confidence intervals) at the beginning and end of term are highlighted. The lower panels summarize the conditional relationship, with effect sizes (on the logit scale) being on the $y-$ axes. Shaded areas are 95% confidence intervals and MP specific random-effects (and uncertainty) omitted.

campaign efforts needed and the potentially lower salience legislation left towards the end of the cycle. Second, our general understanding of the government-opposition divide in parliamentary systems with governments being the agenda setters is in line with our finding that government MPs are much less likely to be absent than those from the opposition benches (H_1), as our model without any interaction also shows.

As displayed in Figure 2, the difference between opposition and government MP absence likelihood is significantly decreasing as we get closer and closer to the upcoming elections. Comparing the first and last day of a legislature, the government *vs* opposition difference is close to halved. Thus, the absence gap is shrinking substantially. Nevertheless, opposition MPs are not immune to these dynamics, as they also register statistically significantly higher absences at the end of the term compared to the beginning, but the size of this difference is rather small.[15]

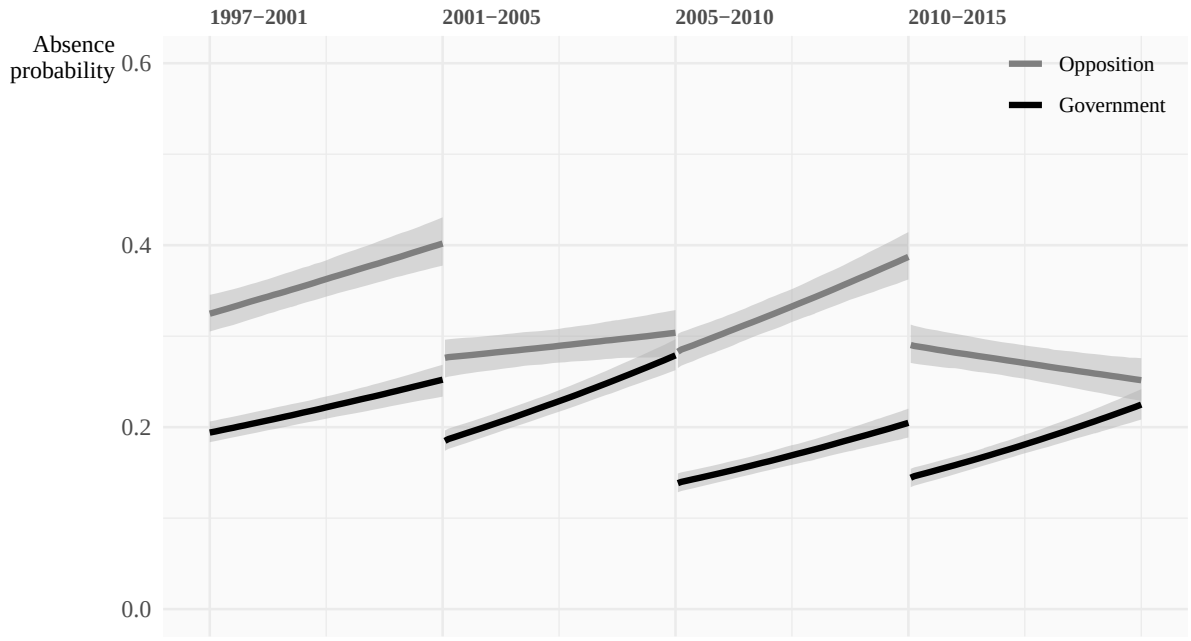
Comparing legislatures and within-MP trajectories

In this section we compare legislatures and also offer a within-MP analysis where the same MPs switched from government to opposition, or vice versa. As seen in the main results, there are systematic differences in average absence rates between legislatures, with 1997-2001 having the highest average absence rates and 2005 to 2015 period seeing more MPs being present. We extended our final model by adding the legislature identifier variables to the interaction, ultimately generating a three-way interaction and some additional two-way interactions. Substantively, we simply assess whether there is a shrinking absence difference between government and opposition MPs in all four legislatures. Figure 3 summarizes our results.

In the 2001-2005 and 2010-2015 sessions the government to opposition convergence operates in the direction of government MPs catching up to the opposition MP absence rates. We can fit a straight line within the uncertainty bounds for opposition MPs, thus their behavior seems to be mostly unchanged throughout these legislatures, or even decreasing absence in 2010-2015 as they get closer to the elections. On the one hand, we find strong empirical support for our claim in two legislatures where the governments were of different political persuasions (1) and there was institutional change (2), as in the second legislature MPs could be certain when the end of

[15]We report additional robustness checks focusing only on Labour, Conservative, and Liberal Democrat MPs (1) and on the subset of MPs standing for re-election only (2) in Appendix **A4**.

Figure 3: Absence probability as a function of electoral cycle for opposition and government MPs



Notes: Full model results reported in Appendix **A5** (all other predictors held constant at their means or most frequent nominal category).

parliament would be after the introduction of the Fixed-term Parliaments Act.

On the other hand, the 1997-2001 and 2005-2010 legislatures yield no support for our claim. The results from these two legislatures suggest that first facet, namely strengthening electoral constraints, acted uniformly, both opposition and government MPs being more absent towards the end of the term. It is noteworthy that opposition MPs are still more likely to be absent than their government counterparts. In both, the starting differences (beginning of term) are quite large and stay constant, accumulating absences over time. The lack of support for our second hypothesis in these two legislatures remain however puzzle for us. There are no readily available common features shared by both of these legislatures that could explain why the government agenda setting asymmetry (second facet of constraints) does not appear to be a factor here.[16]

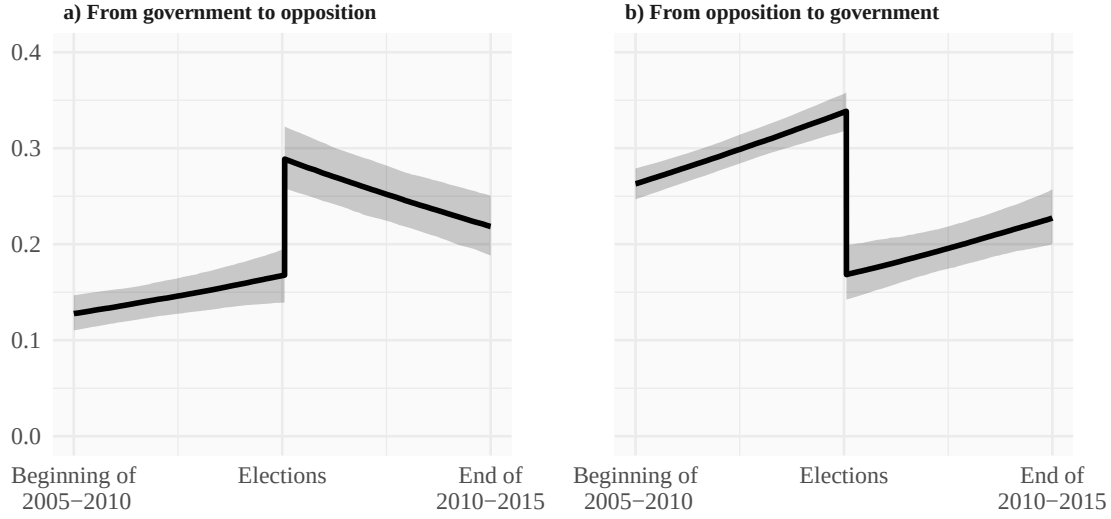
Legislature specific explanations could include the fact that the 1997-2001 legislature saw a government with a very large majority and with the largest proportion of new MPs since 1945. It is possible that this meant these new MPs were in the exploring phase of their parliamentary life (Bailer & Ohmura, 2018) and therefore not necessarily following the expected behavior. For

[16] As reported in Appendix **A4**, while retiring MPs are less likely to be present, once we focus our analysis only on non-retiring MPs, the overall results are very similar.

the 2005-2010 parliament it has also been reported that the government saw a breakdown in discipline in the 2005-2010 leading to increased absences (Cowley & Stuart, 2014, pp. 18–19) but our results cannot support this argument given that it was the opposition MPs who saw a larger increase in absence rates compared to other legislatures. In fact the increase in government absence rates across the 2005-2010 parliament is actually smaller than what was seen in 2001-05 and 2010-15, while the opposition absence rates are the highest across the four periods covered.

In order to gain additional insights, we zoom in on the MPs who changed status in between legislatures, specifically 2005-2010 and 2010-2015 legislatures, which went from a Labour government to a Conservative & Liberal Democrat government. We subset our data to all MPs who were part of both legislatures, did not hold any ministerial positions and did not retire after either of the legislatures, MPs standing for re-election in 2015 as well. We exclude retiring MPs from this analysis to be consistent with the presence of potential electoral incentives. Thus, we have two groups of MPs: the Labour MPs who went from a government side to the opposition (103), and Conservative & Liberal Democrat MPs who went from opposition side to government (113).

Figure 4: Absence probability as a function of electoral cycle for opposition and government MPs



Notes: Included only non-retiring, non-minister MPs, who did not switch parties. Average trajectories, hence MP specific random-effects were omitted from the prediction (all other predictors held constant at their means or most frequent nominal category). Full model results reported in Appendix **A5**.

We combine the two parliaments for each of these groups and fit a hierarchical model of

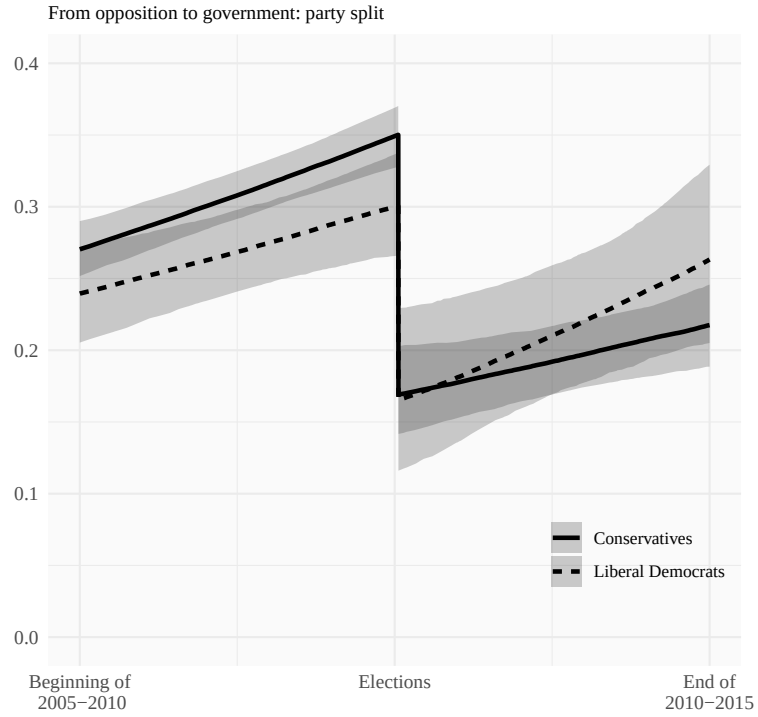
absence where, as before, divisions are nested within MPs. However, the difference is that we are interested in the trajectories throughout time including the switch between the parliaments. We follow Singer and Willett (2003) in terms of parametrization and model building. For both groups of MPs, the best fitting final models estimate a varying starting point for absence probability at the beginning of the 2005-2010 parliament, varying change in the elevation when transitioning to the 2010-2015 legislation, and two varying trajectories.[17] We report the summary of the average trajectories in Figure 4.

We largely reproduce the substantive findings from the cross-sectional time related analysis. Going from government to opposition we see that MPs (Labour MPs in both parliaments) were on average much less absent when they were in government and there is a sharp increase in their absence rates once they start their tenure as opposition members. This is very much in line with the notion that it is the government of the day who is responsible for having a majority in the HoC and the opposition MPs can therefore be more absent. Most importantly, however, we see that while they were in government the absence rates increased towards the end of the parliamentary term, but this is not the case for when the same MPs were in opposition. Going from opposition to government, we see a very substantial drop in absence likelihood, however the change trajectory differences are very small. Conservative and Liberal Democrat MPs in the 2005-2010 opposition were quite sensitive to the electoral cycle as well. The increase is sharper when they are in government, but the difference is quite small and not statistically significant. They basically reach the same absence probability at the end of the electoral cycle of their government tenure as they had at the beginning of their opposition period.

In Figure 5 we summarize an extended version of the "From opposition to government" model, where each time related varying slope (including the switch to second legislature) has one predictor, namely the party the MP was a member of. In other words, we estimated three cross-level interactions. Once uncertainty is incorporated, we find no statistically significant differences between Conservative and Liberal Democrat MP behaviour. This also indicates that our results are not driven by one of these parties, when focusing on the "From opposition to government" transition. However, in opposition, Liberal Democrats were less likely to be absent in comparison to

[17] More precisely, we estimate a general trajectory and change in the slope in the second parliament.

Figure 5: Absence probability as a function of electoral cycle for opposition MPs (party split, within-MP analysis)



Notes: Full model results reported in Appendix **A5** (all other predictors held constant at their means or most frequent nominal category).

Conservatives, but this changes in government, especially as the 2015 elections are getting closer. Furthermore, the electoral constraints appear to be stronger (steeper slope) for Liberal Democrats in government, and their opposition behavior less sensitive to the upcoming elections, but the uncertainty around these estimates is quite wide, given the lower number of Liberal Democrat MPs. It is, however, important to keep in mind that for the Liberal Democrats government participation has so far been a one-off experience. Although if coalition government is to occur again, then the experience of the Liberal Democrats as a junior coalition partner is relevant for understanding the behavior of their MPs.

Discussion and conclusions

In the four parliaments between 1997 and 2015, we have looked at absences across 5033 divisions for over 500 individual MPs in each parliament. The average share of absences is 31%, indicat-

ing that while MPs are mostly present, a non-trivial share of parliamentary vote participation is avoided. More importantly, this ranges from 5% to 99% between MPs, revealing substantial variation of absenteeism. These raw numbers suggest that absence is part of the parliamentary reality, and systematic differences depending on what the vote is on, when it is held, and who is participating need to be considered if we want to understand accountability, parliamentary work, and functioning of parliaments in democratic parliamentary systems.

The inherent assumption, at times clearly stated, is that absence for the most part is not relevant for position-taking and is just a matter of "simple" absences. We have shown though that there are systematic factors that can account for why MPs decide not to participate in a division, and these are in line with broader theories of legislator behavior. Thus, absences might be "simple", but they are quite systematic. Furthermore, changing patterns of absence or the use of this tool can help us better understand some broader dynamics of legislative activity.

It is important to stress that the decision to be absent from vote is taken by the individual MPs. Unfortunately, we have no way of monitoring their decision-making process of being present or absent. However, we believe that by examining the various constraints that MPs face and how they might balance these it is possible to establish part of the process that makes or allows MPs to decide to absent themselves from divisions. The impact of some of these constraints are exactly as one would expect or has been documented in other systems. However, we found no evidence for (previous) constituency majority influencing absence behavior. This could point towards specificities regarding the MP-constituency links in the Westminster setting.

Most importantly, our findings speak to how the government carries out its responsibility to ensure they have a majority in a division and how this influences what their MPs can do, especially when reelection pressures are looming. Overall, we show that the absence probabilities among government MPs are lower than opposition MPs throughout the life cycle of the particular parliament, but as the next election getting closer this difference decreases substantially, with government MPs catching up in terms of absences. This is likely due to a mixture of loosening political constraints associated with the type of legislation the government proposes and electoral constraints the MPs are facing. On average, these conditions have a stronger influence on government MPs who are usually present at a high rate in the beginning of the term. However, we

also find substantial heterogeneity: in two out of the four legislatures, these effects are not specific to government MPs, thus opposition MPs also increase substantially their absence rates as the elections approach.

A possible explanation for this relates to the strength of majority and belief in electoral success. While the 1997-2001 parliament was characterized by Labour having won their strongest mandate, there had been political developments during the term which meant that the government did not take another victory for granted (Harrop, 2001, p. 295) and with the majority had the possibility of allowing more MPs to be absent for campaigning. This should lead to a reaction from opposition MPs to focus on the campaign earlier and therefore also increase their absence. Some of the systematic differences might be party related, and further research should consider those aspects more in detail. Overall, more studies of these two legislatures will be needed in order to better understand why the opposition behavior was different and how this can be related pairing, party discipline, or various other factors.

Conceptualizing absence as part of the parliamentary toolbox also means that informal, or not measurable, parliamentary practices can underlie or overwrite the use of this tool. Most notably, the possibility that pairing can render a different picture of absence. While paired absence would still result in limited information that voters can acquire regarding position taking of their MP, the potential push back against political constraints is less worrisome. Tolerated and calculated paired absence, or the possibility to be paired and find a pair, would be a function of expected division related features.

Finally, we do not know whether MPs actually spend the time in their constituency when they are not present. We conceptualized the absence decision as weighing some costs and benefits between presence at these two places, which is also in line with self-reported MP experiences (Crewe, 2015), and with previous work by Norris (1997) and Rush and Giddings (2011). But we do not have a strict test for this dichotomy. Accordingly, future research is needed to devise more precise measures of the MP activities outside of the parliament, linking public appearances and scheduled activities to the parliamentary agenda to explore how MPs balance the constraints more in detail.

References

Arnold, R. D. (1992). *The logic of congressional action*. Yale University Press.

Bailer, S., & Ohmura, T. (2018). Exploring, maintaining, and disengaging: The three phases of a legislator's life. *Legislative Studies Quarterly*, *43*(3), 493–520.

Benedetto, G., & Hix, S. (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.

Besley, T., & Larcinese, V. (2011). Working or shirking? Expenses and attendance in the UK Parliament. *Public Choice*, *146*(3-4), 291–317.

Bevan, S., John, P., & Jennings, W. (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*(3), 395–417.

Brechler, J., & Gerl, A. (2014). Political legislation cycle in the Czech Republic. *Constitutional Political Economy*, *25*(2), 137–153.

Brown, A. R., & Goodliffe, J. (2017). Why do legislators skip votes? Position taking versus policy influence. *Political Behavior*, *39*(2), 425–455.

Cain, B. E., Ferejohn, J. A., & Fiorina, M. P. (1979). The house is not a home: British MPs in their constituencies. *Legislative Studies Quarterly*, *4*(4), 501–523.

Cain, B. E., Ferejohn, J. A., & Fiorina, M. P. (1984). The constituency service basis of the personal vote for US representatives and British members of parliament. *American Political Science Review*, *78*(1), 110–125.

Campbell, R., Cowley, P., Vivyan, N., & Wagner, M. (2019). Legislator dissent as a valence signal. *British Journal of Political Science*, *49*(1), 105–128.

Carey, J. M. (2007). Competing principals, political institutions, and party unity in legislative voting. *American Journal of Political Science*, *51*(1), 92–107.

Carrubba, C. J., Gabel, M., Murrah, L., Clough, R., Montgomery, E., & Schambach, R. (2006). Off the record: Unrecorded legislative votes, selection bias and roll-call vote analysis. *British Journal of Political Science*, *36*(4), 691–704.

Cohen, L. R., & Noll, R. G. (1991). How to vote, whether to vote: Strategies for voting and abstaining on congressional roll calls. *Political Behavior*, *13*(2), 97–127.

Cowley, P. (2002). *Revolts and rebellions: Parliamentary voting under Blair*. Politico's.

Cowley, P., & Stuart, M. (2014). In the brown stuff? Labour backbench dissent under Gordon Brown, 2007–10. *Contemporary British History*, *28*(1), 1–23.

Crewe, E. (2015). *The House of Commons: An anthropology of MPs at work*. Bloomsbury Publishing.

Dewan, T., & Spirling, A. (2011). Strategic opposition and government cohesion in Westminster Democracies. *American Political Science Review*, *105*(2).

Donnelly, C. P. (2019). Yea or Nay: Do legislators benefit by voting against their party? *Legislative Studies Quarterly*, *44*(3), 421–453.

Döring, H. (1995). Time as a scarce resource: Government control of the agenda. In H. Döring (Ed.), *Parliaments and majority rule in Western Europe* (pp. 223–46). Campus Frankfurt/St Martin's Press.

Fenno, R. F. (1977). US House members in their constituencies: An exploration. *American Political Science Review*, *71*(03), 883–917.

Fisher, J., Fieldhouse, E., Johnston, R., Pattie, C., & Cutts, D. (2016). Is all campaigning equally positive? The impact of district level campaigning on voter turnout at the 2010 British general election. *Party Politics*, *22*(2), 215–226.

Fisher, J., Johnston, R., Cutts, D., Pattie, C., & Fieldhouse, E. (2014). You get what you (don't) pay for: The impact of volunteer labour and candidate spending at the 2010 British General Election. *Parliamentary Affairs*, *67*(4), 804–824.

Forgette, R., & Sala, B. R. (1999). Conditional party government and member turnout on Senate recorded votes. *The Journal of Politics*, *61*(2), 467–484.

Fortunato, D., & Provins, T. (2017). Compensation, opportunity, and information: A comparative analysis of legislative nonresponse in the American States. *Political Research Quarterly*, *70*(3), 644–656.

Gaines, B. J. (1998). The impersonal vote? Constituency service and incumbency advantage in British elections, 1950-92. *Legislative Studies Quarterly*, *23*(2), 167–195.

Geys, B., & Mause, K. (2016). The limits of electoral control: Evidence from last-term politicians. *Legislative Studies Quarterly*, *41*(4), 873–898.

Harrop, M. (2001). An apathetic landslide: The British general election of 2001. *Government and Opposition*, *36*(3), 295–313.

Hart, D. B., & Munger, M. C. (1989). Declining electoral competitiveness in the House of Representatives: The differential impact of improved transportation technology. *Public Choice*, *61*(3), 217–228.

Heitshusen, V., Young, G., & Wood, D. M. (2005). Electoral context and MP constituency focus in Australia, Canada, Ireland, New Zealand, and the United Kingdom. *American Journal of Political Science*, *49*(1), 32–45.

Hix, S., & Noury, A. (2016). Government-opposition or left-right? The institutional determinants of voting in legislatures. *Political Science Research Methods*, *4*(2), 249–73.

Hug, S. (2010). Selection effects in roll call votes. *British Journal of Political Science*, *40*(1), 225–235.

John, P., Bertelli, A., Jennings, W., & Bevan, S. (2013). *Policy agendas in British politics*. Springer.

Johnston, R., Cowley, P., Pattie, C., & Stuart, M. (2002). Voting in the House or wooing the voters at home: Labour MPs and the 2001 general election campaign. *Journal of Legislative Studies*, *8*(2), 9–22.

Jones, D. R. (2003). Position taking and position avoidance in the US Senate. *Journal of Politics*, *65*(3), 851–863.

Kam, C. J. (2009). *Party discipline and parliamentary politics*. Cambridge University Press.

Lagona, F., & Padovano, F. (2008). The political legislation cycle. *Public Choice*, *134*(3-4), 201–229.

Longley, N. (2003). Modelling the legislator as an agent for the party: The effects of strict party discipline on legislator voting behaviour. *Contemporary Economic Policy*, *21*, 490–499.

Lott, J. R. (1987). Political cheating. *Public Choice*, *52*(2), 169–186.

Lott, J. R. (1990). Attendance rates, political shirking, and the effect of post-elective office employment. *Economic Inquiry*, *28*(1), 133–150.

Norris, P. (1997). The puzzle of constituency service. *The Journal of Legislative Studies*, *3*(2), 29–49.

Norris, P. (2005). The British Parliamentary Constituency Database, 1992-2005, Release 1.3.

Norris, P. (2010). May 6th 2010 British General Election Constituency Results Release 5.0.

Noury, A. G. (2004). Abstention in daylight: Strategic calculus of voting in the European Parliament. *Public Choice*, *212*, 179–211.

Padovano, F., & Gavoille, N. (2017). Legislative cycles in a semipresidential system. *Journal of Institutional and Theoretical Economics*, *173*(3), 470–497.

Rosas, G., & Shomer, Y. (2008). Models of nonresponse in legislative politics. *Legislative Studies Quarterly*, *33*(4), 573–601.

Rosas, G., Shomer, Y., & Haptonstahl, S. R. (2015). No news is news: Nonignorable nonresponse in roll-call data analysis. *American Journal of Political Science*, *59*(2), 511–528.

Rothenberg, L. S., & Sanders, M. S. (1999). Rational abstention and the congressional vote choice. *Economics & Politics*, *11*(3), 311–340.
Rush, M., & Giddings, P. (2011). Parliamentary socialisation. *Parliamentary Socialisation* (pp. 174–194). Springer.
Searing, D. D. (1985). The role of the good constituency member and the practice of representation in Great Britain. *The Journal of Politics*, *47*(2), 348–381.
Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford University Press.
Slapin, J. B., Kirkland, J. H., Lazzaro, J. A., Leslie, P. A., & O'Grady, T. (2018). Ideology, grandstanding, and strategic party disloyalty in the British Parliament. *American Political Science Review*, *112*(1), 15–30.
Smith, T. H. (2013). Are you sitting comfortably? Estimating incumbency advantage in the UK: 1983–2010–A research note. *Electoral Studies*, *32*(1), 167–173.
Spirling, A., & McLean, I. (2007). UK OC OK? Interpreting optimal classification scores for the UK House of Commons. *Political Analysis*, *15*(1), 85–96.
Spirling, A., & Quinn, K. (2010). Identifying intraparty voting blocs in the UK House of Commons. *Journal of the American Statistical Association*, *105*(490), 447–457.
Staats, E. B. (1988). Public service and the public interest. *Public Administration Review*, *48*(2), 601–05.
ThePublicWhip. (2015). Votematrix for House of Commons, 1997-2015.
Vivyan, N., & Wagner, M. (2016). House or home? Constituent preferences over legislator effort allocation. *European Journal of Political Research*, *55*(1), 81–99.
Whiteley, P. F., & Seyd, P. (1994). Local party campaigning and electoral mobilization in Britain. *The Journal of Politics*, *56*(1), 242–252.
Whiteley, P. F., & Seyd, P. (2003). How to win a landslide by really trying: the effects of local campaigning on voting in the 1997 British general election. *Electoral Studies*, *22*(2), 301–324.
Willumsen, D. M. (2019). So far away from me? The effect of geographical distance on representation. *West European Politics*, *42*(3), 645–669.
Willumsen, D. M., & Goetz, K. H. (2017). Set free? Impending retirement and legislative behaviour in the UK. *Parliamentary Affairs*, *70*(2), 254–279.
Willumsen, D. M., & Öhberg, P. (2017). Toe the line, break the whip: Explaining floor dissent in parliamentary democracies. *West European Politics*, *40*(4), 688–716.
Zupan, M. A. (1991). Local benefit-seeking and national policymaking: Democrats vs. Republicans in the legislature. *Public Choice*, *68*, 245–258.

Appendices

Online Supplementary materials for "Incentives for Non-Participation: Absence in the United Kingdom House of Commons, 1997-2015".

A1 Data and descriptives

Table A1.1: Number of divisions and MPs

	1997-2001	2001-2005	2005-2010	2010-2015
Divisions	1273	1246	1288	1226
Government MPs	426/381	416/381	359/300	364/313
Opposition MPs	243/192	243/168	291/226	298/212
Total MPs	678/573	672/549	657/526	664/526

Notes: First entry is all data, second entry after all exclusions described in the text. The number of divisions does not decrease when excluding MPs from our analysis.

Table A1.2: Descriptive statistics

	Statistic
Gvt bill division	0.48
Vote majority	0.41 (0.27)
Government MP	0.63
Retiring	0.16
Seniority	8.54 (8.89)
Constituency majority	21 (14)
Constituency distance (in km)	255 (202)

Notes: Mean and standard deviation of continuous variables; proportions for dichotomous variables (on the scale of long data format).

A2 Topic coding

We follow a standard approach in terms of deriving the topic of each division in our data based on already coded Acts of Parliament (known as simply 'acts' from now on) in the Comparative Agendas Project. We have a classification or labeling problem in our hands, where we use the title of acts in terms of text and based on the words in these titles (features) we will predict given content category probability for unknown and uncoded texts.

At the first stage (displayed in Table **A2**.1), we grouped the 21 Major Topics into 5 broader categories. While this step means less refinement in terms of content, it is necessary because we use available information on only the division's titles, not their detailed text or the debates surrounding the proposal. This facilitates a better prediction, at the cost of broader content features. However, the five broader categories allow us to differentiate between economic and social content (which could potentially be mapped to ideological heterogeneity among the electorate), but more importantly, we are also able to keep mostly government related topic categories separate. Table **A2**.2 displays frequency of broader topics in the CAP data.

Table A2.1: Topic counts for Acts coded in CAP

CAP major topic (code)	**Employed grouping code**
(1) Domestic Macroeconomic Issues	Economy/Trade/Industry
(4) Agriculture	
(5) Labor and Employment	
(8) Energy	
(15) Banking, Finance, and Domestic Commerce	
(18) Foreign Trade	
(2) Social issues/Civil Rights, Minority Issues, and Civil Liberties	Social issues/Civil Rights
(7) Environment	
(9) Immigration and Refugee Issues	
(12) Law, Crime, and Family Issues	
(23) Cultural Policy Issues	
(3) Health	Government Expenditure
(6) Education	
(10) Transportation	
(13) Social Welfare	
(14) Community Development and Housing Issues	
(17) Space, Science, Technology, and Communications	
(16) Defense	Defense and Foreign Policy
(19) International Affairs and Foreign Aid	
(21) Public Lands, Water Management, and Territorial Issues	
(20) Government Operations	Government Operations

After this step, we have all the acts coded within CAP described by their short and long bill title, and an assigned (human coded) category. We then go through the following text pre-processing steps: we convert all words to lower case, remove punctuation, numbers and stopwords, and apply stemming. The tokens used in the analysis are unigrams. Next, we split our already labeled dataset (CAP acts) into a training (5500 acts) and a test set (569 acts). For the training set, we use as input for each division a string containing elements from **short and long** division titles, however, in the test set, we use only the short titles of the divisions, as those are the ones readily available in the voting data set (uncategorized divisions).

We employ multiple classifiers and pick the one with the best performance when employed for

Table A2.2: Topic counts for Acts coded in CAP

	Economy & trade	Civil rights	Gvt. expenditure	Defense & foreign policy	Gvt. operations
All	1968	1045	1406	896	754
From 1997	184	145	136	62	82

prediction on our test-set. Performance measures for different algorithms are listed in Table **A2**.3. As apparent, our multinomial classifier (Maximum Entropy) and the Support Vector Machine performs very well, with slight edge to the multinomial classifier. We are able to register performance in which 76% (on average) of each predicted category matches the observed category, and we also correctly recover 74% of the true categories.

Table A2.3: Classifier performance. Total Acts used, 6069, training set 5500

	F-score	Precision	Recall
Maximum Entropy	0.74	0.76	0.74
Support Vector Machine	0.72	0.81	0.68
Supervised Latent Dirichlet Allocation	0.66	0.77	0.62
Regularized GLM	0.66	0.83	0.61
Random Forests	0.55	0.80	0.50
Boosting (logit)	0.46	0.8	0.43
Bagging	0.45	0.81	0.42
Neural networks	0.39	0.39	0.44

Table A2.4: Classifier performance broken down for each topic category. Total Acts used, 6069, training set 5500

	Economy & trade	Civil regulation	Gvt. expenditure	Defense & foreign policy	Gvt. operations
MaxEnt (predict using both)					
Precision	0.90	0.83	0.88	0.78	0.72
Recall	0.88	0.73	0.90	0.86	0.76
F-Score	0.89	0.78	0.89	0.82	0.74
MaxEnt (predict using short titles)					
Precision	0.78	0.76	0.80	0.74	0.74
Recall	0.89	0.67	0.81	0.79	0.53
F-Score	0.83	0.71	0.80	0.76	0.62

Once we decided to pick the Maximum Entropy classifier, we report in Table **A2**.4 two additional checks. As it would be expected, using both the short title and long titles would lead to better performance. However, these are not readily available in our voting data, and fortunately the differences in performance are also not too large: depending on the category predicted, these range between 0.06 and 0.12, but the performance levels using short texts are still very good, in absolute terms. Finally, the lowest performance levels are registered for the "Government operations" category (in both cases) mostly due to the lack of specific content identifiers in the tokens. Notwithstanding, we believe that this performance is still acceptable (and, as in all cases, significantly better compared to the non-informative baseline), and as the division topic variable serves as a control variable, it will assure further refinement in the absence models specified.

A3 Out-of-sample prediction

Discussing out-of-sample prediction for the present analysis is rather difficult for some of the reasons highlighted below. First, we aim to *explain* patterns of absence, but one corollary is of course that we believe our model can help predicting absence behavior for new MPs or new divisions. Accuracy and precision of these model based predictions can be very useful to evaluate our models on one hand, but also to substantively incorporate previous knowledge about future events. Thus, while we still view our enterprise as a model of absence probability, we do have the possibility to consider it as a categorization problem.

Second, the models we fit to the data (normally would be labeled as *training set*) reflect a theoretical model, rather than a step-by-step optimization of finding the best fitting model to be evaluated on new data. Hence, our models are definitely on the parsimonious side, with no added non-linear terms or full exploration of potential multiplicative interactions. Even more so, we employ hierarchical models that produce MP and date specific deviations from average patterns (or effects, in case of the vote majority), which makes these models difficult to transfer to cases with new MPs or new dates.

Third, a somewhat explicit assumption behind the choice of *training* vs. *test* data sets is that these data are drawn from the same population. In the present out-of-sample exercise, we believe this assumption is not necessarily met, hence the results should be treated with caution. However, given the large and model (or predictor) relevant differences, the results reported here are possibly at the lowest bound, i.e. the most conservative evaluation.

With these initial caveats and qualifiers, we turn now to the discussion of our new data that we use to evaluate our models' out-of-sample performance. We use a set of MPs who were excluded from the original analyses, namely the MPs who entered each legislature at a later stage, through by-elections. We only use those MPs who were *new* MPs and not MPs who re-ran for office in the same constituency to re-establish themselves or the electoral support through by-elections. Table **A3**.1 displays some telling summary statistics about our test set.

Table A3.1: Test data (incoming through by-election) properties and descriptive statistics

Legislature	Total votes	MPs	Divisions	Prop. government
1997-2001	7671	13	1197	0.56
2001-2005	3561	6	1157	0.77
2005-2010	7863	11	1245	0.42
2010-2015	9131	15	1055	0.08

The number of by-elections vary between legislatures, and as expected for new incoming MPs, we find them to have basically no seniority, i.e. it is their first term in the House of Commons, and except for two MPs they are not retiring. Similarly, with the exception of one MP, they will not take up minister or shadow minister positions. It is important to note that these are important predictors in our models, but in these cases, they will be at the lowest levels, almost entirely fixed, so we cannot exploit variation in these predictors, and consequently effects. Although not included in the table, since these MPs joined at a later stage of the legislature, which implies that the election proximity measure will also be systematically more restricted compared to our training set.

We use the coefficients from our two final models to predict absence in our test set. For each MP, we include the votes from the first moment they were present to vote in the House of Commons. We discard both MP and date-specific random effects, basing our predictions on the so

Table A3.2: Out-of-sample performance

	Accuracy	Precision	Recall	F1-score
Baseline (empty model)	0.726			
Predictors included	0.782	0.757	0.301	0.431
Predictors and varying slope	0.783	0.752	0.313	0.442
Government interaction	0.782	0.765	0.296	0.427

Notes: Accuracy is the proportion of correctly predicted. *Precision* is the proportion of correctly predicted absences from the total absences predicted. *Recall* is the proportion of correctly predicted absences from total absences in the data. *F-score* is a combined measure of precision and recall. Given that our baseline model for all legislature predicts 0 (modal category), we use a simple random absence generator as baseline.

called *fixed-effects* part only. Table **A3**.2 displays various metrics for benchmarking the model performance.

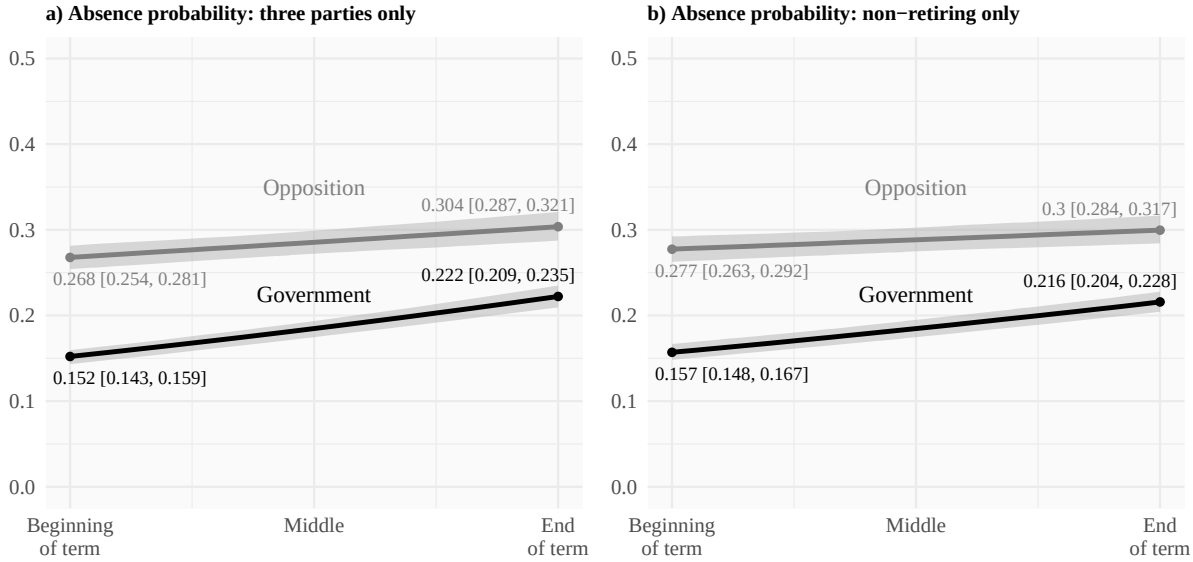
In all cases the *Accuracy* of the final models is significantly higher than the one for the baseline model. Overall, the out-of-sample performance is comparable to the one reported for the full data in our analyses, which we deem as very good performance, especially given the characteristics of the test set discussed above. For *Precision*, i.e. the proportion of correctly predicted absences from all absences predicted, our models also perform very well. This implies that roughly 78% of the cases when our model predicts absence, we will actually observe absence. However, the weakest feature of our models is related to the prediction of absence from all absences in the data (*Recall*): we are only able to predict one third of the actual absences by the MPs who came in through by-elections. Accordingly, our models have difficulty in recovering absences from the data.

Our overall conclusions based on this problematic, but informative, exercise are positive. We find good out-of-sample performance measured through *Accuracy* and *Precision*, which would imply that the absences predicted by our model are "trustworthy". However, as summarized by the *F-score*, once we take into account *Recall*, our performs worse. In all cases there is clearly much room for improvement if the sole goal is to predict absences. To reiterate, given the specificity of our test data in this case, we believe these are very conservative, lower bound performance results.

A4 Detailed robustness checks

We argued that, especially in Westminster systems, government MPs face stronger political constraints, hence their absence rates will be lower. However, the opposition is usually a more heterogeneous block and there might be within-block differences in how parties control their MPs. Looking at our data, we see that MPs of smaller parties are more frequently absent in comparison to their opposition colleagues who are members of either of the three larger parties. The first panel of Figure **A4**.1 shows though that this has no influence on our results: focusing on Labour, Conservative, and Liberal Democrat MPs only, our substantive findings are unchanged.

Figure A4.1: Summary of robustness checks



Second, we reran our analysis on only non-retiring MPs from all parties, as those are the MPs who are expected to be influenced most by electoral constraints and campaign work. As displayed in the right panel of Figure **A4**.1 the substantive findings are unchanged, which is also due to the fact that we only exclude 355 MPs, as most actually stand for re-election. Full model results are displayed in Table **A4**.1.

Table A4.1: Hierarchical models of absence probability: robustness checks

	Three parties only	Non-retiring only
Intercept	$-1.793\ (0.040)^*$	$-1.766\ (0.045)^*$
Next election proximity	$0.173\ (0.034)^*$	$0.109\ (0.033)^*$
Government bill	$0.044\ (0.003)^*$	$0.035\ (0.003)^*$
Thursday	$0.580\ (0.005)^*$	$0.572\ (0.006)^*$
Friday	$2.166\ (0.009)^*$	$2.152\ (0.010)^*$
Monday	$0.083\ (0.004)^*$	$0.081\ (0.004)^*$
Tuesday	$-0.012\ (0.004)^*$	$-0.013\ (0.004)^*$
Vote majority	$1.815\ (0.006)^*$	$1.814\ (0.006)^*$
Social issues/civil rights	$-0.043\ (0.004)^*$	$-0.039\ (0.005)^*$
Gvt. expenditure	$0.043\ (0.005)^*$	$0.046\ (0.005)^*$
Defense and FP	$-0.038\ (0.005)^*$	$-0.044\ (0.006)^*$
Gvt. operations	$0.105\ (0.004)^*$	$0.111\ (0.005)^*$
Government MP	$-0.715\ (0.033)^*$	$-0.724\ (0.037)^*$
Retiring	$0.280\ (0.040)^*$	
Constituency majority	$0.050\ (0.070)$	$-0.050\ (0.080)$
Distance	$0.308\ (0.081)^*$	$0.506\ (0.088)^*$
Seniority	$1.103\ (0.076)^*$	$1.148\ (0.089)^*$
2001-2005 session	$-0.059\ (0.037)$	$-0.043\ (0.040)$
2005-2010 session	$-0.252\ (0.038)^*$	$-0.217\ (0.042)^*$
2010-2015 session	$-0.280\ (0.038)^*$	$-0.301\ (0.041)^*$
Govt. $\times$ proximity	$0.292\ (0.043)^*$	$0.282\ (0.042)^*$
AIC	2779827.643	2355233.662
BIC	2780134.890	2355524.440
Division $\times$ MP	2681668	2286514
MPs	2131	1818
(Var) MPs	0.494	0.504
(Var) Proximity slope	0.878	0.718
(Cov) (Int, proximity slope)	-0.316	-0.305

Notes: (Restricted) Maximum Likelihood estimates of logit coefficients. Standard errors in parentheses, $^*p < 0.05$.

A5 Detailed time and within-MP results

Table A5.1: Hierarchical models of absence probability

	Legislature interaction model
Intercept	-1.790 $(0.049)^*$
Next election proximity	0.335 $(0.056)^*$
Government bill	0.042 $(0.003)^*$
Thursday	0.586 $(0.005)^*$
Friday	2.176 $(0.009)^*$
Monday	0.089 $(0.004)^*$
Tuesday	-0.015 $(0.004)^*$
Vote majority	1.791 $(0.006)^*$
Social issues/civil rights	-0.036 $(0.004)^*$
Gvt. expenditure	0.051 $(0.004)^*$
Defense and FP	-0.034 $(0.005)^*$
Gvt. operations	0.106 $(0.004)^*$
Government MP	-0.691 $(0.058)^*$
Retiring	0.313 $(0.040)^*$
Constituency majority	-0.012 (0.074)
Distance	0.537 $(0.081)^*$
Seniority	1.103 $(0.081)^*$
2001-2005 session	-0.231 $(0.067)^*$
2005-2010 session	-0.200 $(0.063)^*$
2010-2015 session	-0.161 $(0.070)^*$
Govt. $\times$ proximity	0.002 (0.068)
Proximity $\times$ 2001-2005 session	-0.206 $(0.081)^*$
Proximity $\times$ 2005-2010 session	0.133 (0.080)
Proximity $\times$ 2010-2015 session	-0.534 $(0.089)^*$
Gvt. $\times$ 2001-2005 session	0.170 $(0.081)^*$
Gvt. $\times$ 2005-2010 session	-0.207 $(0.082)^*$
Gvt. $\times$ 2010-2015 session	-0.196 $(0.090)^*$
Proximity $\times$ Gvt. $\times$ 2001-2005 session	0.406 $(0.097)^*$
Proximity $\times$ Gvt. $\times$ 2005-2010 session	0.001 (0.103)
Proximity $\times$ Gvt. $\times$ 2010-2015 session	0.737 $(0.113)^*$
AIC	2839092.469
BIC	2839515.578
Division $\times$ MP	2734621
MPs	2173
(Var) MPs	0.520
(Var) Closeness slope	0.864
(Cov) (Int, Closeness slope)	-0.323

Notes: (Restricted) Maximum Likelihood estimates of logit coefficients with standard errors in parentheses.

Table A5.2: Hierarchical models of absence probability: within-MP models

	From government to opposition	From opposition to government
Intercept	$-2.881\ (0.164)^*$	$-1.878\ (0.074)^*$
Legislature days (all)	$0.640\ (0.224)^*$	$0.715\ (0.100)^*$
Legislature days (second)	$-1.388\ (0.287)^*$	$0.044\ (0.265)$
Change to second leg.	$0.699\ (0.099)^*$	$-0.926\ (0.104)^*$
Government bill	$0.038\ (0.011)^*$	$0.009\ (0.009)$
Thursday	$0.753\ (0.019)^*$	$0.609\ (0.017)^*$
Friday	$2.190\ (0.026)^*$	$1.640\ (0.023)^*$
Monday	$0.100\ (0.014)^*$	$-0.021\ (0.013)$
Tuesday	$0.009\ (0.013)$	$-0.030\ (0.012)^*$
Vote majority	$2.376\ (0.018)^*$	$1.924\ (0.017)^*$
Social issues/civil rights	$-0.018\ (0.014)$	$-0.093\ (0.012)^*$
Gvt. expenditure	$0.122\ (0.016)^*$	$0.140\ (0.015)^*$
Defense and FP	$0.018\ (0.017)$	$-0.149\ (0.016)^*$
Gvt. operations	$0.013\ (0.016)$	$0.073\ (0.014)^*$
Constituency majority	$-0.235\ (0.331)$	$0.008\ (0.246)$
Distance	$0.036\ (0.394)$	$0.273\ (0.240)$
Seniority	$0.698\ (0.361)$	$0.739\ (0.246)^*$
AIC	234317.450	291254.177
BIC	234599.987	291539.216
Division × MP	258942	284082
MPs	103	113
(Var) MPs	0.614	0.180
(Var) (all) Leg. days	4.631	0.948
(Var) (second) Leg. days	7.489	8.023
(Var) Change to second leg.	0.708	1.156
(Cov) Int., Leg. days	−0.804	−0.251
(Cov) Int., (second) Leg. days	0.800	0.259
(Cov) Int., Change to second	−0.046	0.088
(Cov) Leg. days, (second) Leg. days	−4.938	−0.935
(Cov) Leg. days, Change to second	−1.041	−0.308
(Cov) (second) Leg. days, Change to second	1.009	−1.940

Notes: (Restricted) Maximum Likelihood estimates of logit coefficients with standard errors in parentheses.
$^{(a)}$ Second legislature refers to 2010-2015.