Shirking and Slacking in Parliament*

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Abstract

How and why do the activities of members of parliament (MPs) change in response to electoral constraints? While MPs can usually select from a wide arsenal of parliamentary tactics (i.e. speak, vote, etc.), their activities are circumscribed by countless factors. These limitations may include, among others, constituency interests, parliamentary rules, and the "party

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whip." In this paper, we draw on unique and newly collected data from the Swiss federal chambers and two cantonal parliaments (Basel-Stadt and Basel-Land) to explore the effects of electoral constraints. Leveraging variation in mandatory term limits, we study the extent to which term-limited MPs engage in shirking—i.e. vote against the party line—and slacking—i.e. reduce their parliamentary activities. Our analysis, which draws on a combination of novel roll-call votes and speech data, yields mixed results: while there is no evidence of shirking by term-limited MPs in the cantonal parliaments, we find some evidence for both shirking and slacking amongst term-limited legislators in the federal chambers. These findings shed light on the (political) implications of term limits, and the effect of electoral constraints on legislator behaviour.

1 Introduction

It is a widely held assumption — both in and outside academia — that electoral considerations are a key if not the prime motivation for the behaviour of members of parliament (MPs) (e.g. Mayhew 1974; Fenno 1978). What happens when this constraint is removed? Incumbent politicians who retire, whether willingly or forcibly, may become more independently minded and defy their party (i.e. shirking) as they no longer rely on its resources to secure re-election. Similarly, such "exiteer" politicians may exhibit reduced parliamentary activity in general (i.e. slacking).[1] The existence of legislative term limits in Swiss cantonal legislatures and the federal parliament presents us with a unique opportunity to identify cause and effect: do "lame ducks" (Mooney 2009, 210) shirk or slack because they know they will retire or are these MPs forced to retire because of their shirking (or slacking) behaviour?

In this paper, we employ newly collected data that allow for a more rigorous test of the drivers of MP behaviour, leveraging the existence of term limits. In Switzerland different types of term limits—party- and state-imposed—exist in various parliamentary chambers—cantonal parliaments as well as the federal parliament.[2] We leverage the existence of such term limits in a differences-in-differences (DiD) analysis that draws on data from two cantonal parliaments—

[1] Below (page 6), we offer a more detailed justification of our use of the terms "shirking" and "slacking."

[2] Using data from Switzerland to study term limits has important advantages, as it provides behavioural data that are not available in other settings. For instance, Swiss data allows us to use individual data on non-public votes.

Basel-Stadt and Basel-Land—as well as from the federal parliamentary chambers. Specifically, we use information from both roll-call and other votes as well as speeches to assess the conditions under which term-limited MPs engage in shirking toward their party (leadership) and their constituencies, as well as slacking.

Our analysis provides suggestive evidence that term-limited MPs, and to some extent also other retiring MPs, engage in more shirking, i.e., moving away from the party line, at the federal level, though not in cantonal parliaments. This shirking behaviour, at the federal level, results in a move of retiring MPs towards the preferences of their respective cantonal median voters. We also find that term-limited MPs reduce in part their activities, especially the more costly ones. This effect is, however, quite mixed at the cantonal level, while at the federal level we find a reduction in debate participation.

The remainder of the paper is structured as follows. Section 2 sets out a number of key perspectives on the effect of electoral constraints on MP behaviour, and distills a number of hypotheses. Subsequently, Section 3 discusses the data and research design of our study. Section 4 presents the empirical tests. Finally, we conclude in Section 5.

2 The Theoretical and Empirical Debate

It is common knowledge that MPs are not exclusively driven by their political preferences. Their parliamentary activities are also conditioned by the behaviour of other actors and institutional constraints. One of the prime constraints that MPs face is that of re-election. At the end of their term in office, many seek re-election, and require approval by their party and the support of voters to do so.[3] Consequently, the party and the electorate are in some sense the "principals" of legislators in a principal-agent relationship. A large part of the literature on the behaviour of MPs therefore attempts to disentangle the effect of legislator preferences on their behaviour from the effect of their party and their voters (see, for instance Collie 1984; Uslaner and Zittel 2006; Kam 2014).

Scholars have employed a series of approaches to assess these effects. Early studies simply regressed voting behaviour on party membership and considered

[3]While there is a debate about whether political parties play a similar role in presidential and parliamentary systems (see, for instance Krehbiel 1993), we consider this to be a matter of degree (see Cox and McCubbins 2007).

the residuals to correspond to the effect of constituency preferences (for a forceful critique of this approach, see Fiorina 1975). Later, scholars turned to estimating an MP's preferences (or those of their party) on the basis of roll call votes. Subsequently, these estimates were used to predict votes, while deviations were taken as evidence of party or constituency pressure (for a solid critique of this approach, see Jackson and Kingdon 1992).[4]

More convincingly, Levitt (1996) proposes to consider voting by a Senator against their own preferences as a utility loss. Consequently, for each vote a Senator's utility becomes a weighted average of what a Senator's party, voters and their own leanings wish him or her to do. Other scholars have attempted to use party switchers to identify the effect of party discipline, obviously with the caveat that switching party affiliation is likely to be endogenous (Nokken 2000).[5] Another approach is to elicit information on MP and voter preferences in surveys, either on specific topics (see Bartels 1991; Bailer et al. 2007) or more generally on broad themes (see Kam 2001) and assess the respective influence of these various elements. Finally, as the influence of parties and voters is strongly linked to seeking re-election, scholars have also tried to infer the importance of voters and parties in explaining the behaviour of MPs by looking at changes in this behaviour when MPs retire (see for instance Lott 1987; Zupan 1990; Bender and Lott 1996; Bailer and Ohmura, 2017 (forthcoming); Willumsen and Goetz 2017).

A shortcoming of this approach is, however, that MPs might want to retire because they have diverged from their party's and voters' preferences (which is akin to the problem of using party-switchers to identify the effects of party influences).[6] Some hope for alleviating this concern can be found in MPs who are *forced* to retire, because they are not allowed to seek re-election. Such forced retirements come about by term limits[7] that have become an active research area

[4]Indirectly Jackson and Kingdon (1992) also criticize another approach proposed by Kalt and Zupan (1990), which consists of regressing ideal-point estimates on constituency characteristics and considering the residuals as MP preferences.

[5]See also the related work that considers members of the House of Representatives who move to the Senate, and thus change their constituencies (see for instance Grofman et al. 1995), as cases that allow for identifying the importance of constituency preferences.

[6]Retiring senators in the current United States Senate nicely illustrate this conundrum (see, for instance `http://edition.cnn.com/2017/10/25/politics/jeff-flake-john-mccain-bob-corker-trump-legacy/index.html`).

[7]Being subject to such a term limit and being forced to retire after the end of a term is

since, in the 1990s, many US states have started to introduce such limits on the members of their legislatures (Cain and Levin 1999; Mooney 2009; Grofman 2012a).[8]

With the proliferation of term limits at the state level, numerous scholars have used these changes to assess various aspects of parliaments and how they are affected by such an institutional change (Mooney 2009; Grofman 2012b). Studies have tested the effect of term limits on a broad variety of factors: from voter turnout, electoral competition and campaign finance (see Daniel and Lott 1997; Masket and Lewis 2007; Nadler 2007) to legislative committees and public policy (e.g. Cain and Wright 2009; Herron and Shotts 2006) (for a review of these various studies see Mooney 2009).[9]

Our focus, however, will be on the effect of term limits on the behaviour of MPs who are forced to retire. The insights from the empirical studies carried out in various contexts are quite mixed. Bender and Lott (1996), reviewing the literature on the US suggests that slacking is more common than shirking among term-limited MPs. They explain this, in part, by the argument that MPs with divergent preferences from their constituencies might already have been weeded out in previous elections. In a recent study on state legislatures, Fouirnaies and Hall (2018) largely confirm these findings.

These findings have to be set in the broader context of what we know about retiring MPs. While many studies focus on US legislatures, several have also dealt with the House of Commons in the United Kingdom or with other parliaments. Carey (1998) studies U.S. and Latin American parliaments. His findings point towards the existence of shirking, particularly among MPs who pursue a state-wide office afterwards. For the House of Commons Benedetto and Hix (2007) also find that retiring MPs vote more frequently against their party, while Besley

obviously not a truly exogenous factor either. A fascinating study on state senators where the term limit (i.e. the length of this last term), due to random assignment, is truly exogenous, is presented by Titiunik (2016).

[8]Interestingly, as Grofman (2012a) notes, such term limits were in place already for a much longer time for members of the Executive, both at the state and federal level.

[9]Alt et al. (2011), for instance, adopt a theoretically informed design to assess whether term limits affect the accountability relationship between state governors and their voters or the competence of the former. Relatedly, Schnyder (2011) proposes a two period model in which voters take into account in their reelection of an incumbent to his last term in office the likely "shirking" behaviour. Schelker (2017) pushes this argument further and shows that in response to term limits voters induce divided government to maintain a stronger accountability relationship.

and Larcinese (2011) report in their study a reduced attendance rate for retiring MPs. Wright (2007) finds no effect of term limits on party polarization but confirms that term-limited MPs exert less legislative effort. In a more recent study, Willumsen and Goetz (2017) find less attendance, but not more rebellions or fewer other activities when looking only at the last term. When comparing the pre- to post- announcement periods, attendance still decreases, while rebellions increase and the signing of early-day-motions decreases.

Godbout and Høyland (2017, 555), in a study on the Canadian parliament, find that members in their last term are less loyal to their party, but this only holds for the earliest parliaments at the turn of the century (see also Godbout, 2018 (forthcoming)). Bailer and Ohmura (2017 (forthcoming)), studying the members of the German Bundestag, find that MPs in their last term reduce their activities.

Although from a theoretical standpoint, the removal of the re-election constraint should allow MPs to change their voting behaviour to align more closely with their own preferences (see Zupan 1990), the empirical evidence for this seems weak. Nevertheless, in line with the literature we propose the following hypothesis:

Hypothesis 1 (Shirking): *Term-limited MPs (and retirees) are less likely to toe the party line (in voting and in speeches) than MPs who face re-election.*

The behaviour of MPs that is included under hypothesis 1 is what we refer to as "shirking." In the literature this notion is often also applied in a broader conception, for instance by Bender and Lott (1996, 82), under the heading "non-ideological shirking." "Shirking, defined as the failure of a legislator to act in the interests of his constituents, does not necessarily require that the legislator abandon his constituents in pursuit of his own personal ideological desire" (for an equally broad conception of "shirking," see Powell et al. 2007, 39). Under the heading "The Shirking hypothesis," Reed and Schansberg (1996, 102) note that "[i]t is widely speculated that legislators enjoy considerable slack in representing the interests of their constituents. When this is the case, other factors—such as their own ideologies—can influence their observed voting behaviour." Consequently, our conception of shirking corresponds to this latter behaviour or what Bender and Lott (1996, 82) consider as "ideological shirking." As the previous

quote suggests, this behaviour is rendered possible by what is normally referred to as "principal-agent slack" (Lott and Reed 1989, abstract).

Shirking, as the literature suggests, might not be the only consequence of no longer facing a re-election constraint. Time is a scarce resource, competition over which is rife (e.g. Cox 1987, 2006). This is particularly true for parliamentarians, who need to divide their time between the plenary and committee work in the parliament, but should also spend time serving their constituencies. MPs that fail to deliver on these fronts face punishment in elections. Again, our expectation is that term limits remove opportunity costs related to such behaviours (see also Bender and Lott 1996; Lott 1987; Rothenberg and Sanders 1999). Hence, we expect term-limited MPs to be less active in parliament than MPs who face re-election:

Hypothesis 2 (Slacking): *Term-limited MPs (and retirees) are less likely to be active participants in parliamentary business than MPs who face re-election.*

This behaviour, which is in some sense also rendered possible by the "principal-agent slack," we refer to as "slacking." By extension, this might also be considered "non-ideological shirking" (Bender and Lott 1996, 82). To keep the two notions apart, however, we refer to the two behaviors covered by hypotheses 1 and 2 as "shirking" and "slacking."

3 Data and Research Design

To investigate the extent of shirking and slacking due to term limits, and thus the removal of the re-election constraint, we use novel data from Switzerland. While most of the studies on the effect of party and constituency pressure focus on parliamentary and/or presidential systems, the Swiss political system, characterized by Shugart and Carey (1992) as having a government that is "assembly-independent," presents slightly different features. More specifically, while the seven members of government are elected by the Federal assembly (the two chambers meeting in a joint session), the government does not depend on the confidence of a majority in parliament, which might reduce the need for party cohesion (see, for instance Diermeier and Feddersen 1998). In practice, however, parties still attempt to act in a disciplined fashion, resulting in quite high cohesion scores

(see Hug 2010; Traber et al. 2014).[10] At the cantonal level, the members of government are not elected by an assembly, but directly by the citizens. This makes the cantons much more akin to presidential systems. Thus, even if the Swiss political system is not part of one of the typical government types, it is still an interesting testing ground to assess how MPs change their behaviour when they no longer face a re-election constraint.

To test our hypotheses, we rely on both cantonal- and federal-level data across several key components of legislator behaviour. Crucially, we employ the presence of term limits to investigate the effect of electoral constraints on MP activities. This section provides a brief discussion of term limits in the Cantonal legislatures as well as the Federal Parliament. Subsequently, it addresses the data and research design.

3.1 Term Limits in Switzerland

Given the federal character of Switzerland, term limits may apply at different levels. Term limits are absent, however, in the federal constitution or federal laws concerning elections. As in a strict sense elections to the lower house are regulated by federal laws, while those to the upper house are subject to cantonal laws, this implies that MPs of the lower house are not subject to legally enforced term limits. MPs of the upper house, however, are subject to the rules adopted by the canton they represent. In this regard, Lutz and Strohmann (1998, 110) note that the cantons of Obwalden and the Jura have adopted term limits for their members of the federal upper house (16, resp. 12 years, see also Tschannen 1996).[11]

As several parties, more specifically their cantonal sections, have adopted term limits (most often for MPs both at the federal and cantonal level), some MPs cannot represent themselves after a fixed number of years (typically 12 or 16) or a certain number of terms (typically 3 or 4). Whether cantonal parties have

[10] This is also linked to the important role that parties (more specifically their cantonal sections) have in the selection of candidates, as documented in detail for the 1971 election by Gruner et al. (1975) (for more general studies on the careers of MPs in Switzerland, resp. the role of the cantonal political parties, see Pilotti 2016; Ladner and Brändle 2001).

[11] Hangartner and Kley (2000, 608) suggest, however, that only the Jura has such a term limit, while the canton of Berne had such a limit of three mandates until 1993, i.e. the year when a new constitution was adopted. Lutz and Strohmann (1998, 46) note that in addition Grisons, the Jura, and Obwalden limit the terms of the members of their cantonal government to 12, resp. 16 years for the two latter cantons (see also Hangartner and Kley 2000, 620f).

adopted such limits varies across parties and cantons. This kind of term limits are most prevalent in the Social-Democratic party (SP),[12] where many cantonal sections have adopted such rules (though not the cantonal section of Vaud, for instance). Similarly, some cantonal sections of the Green party (notably the one in Geneva) have adopted term limits, as have some sections of the SVP (notably in the canton of Berne), the CVP (for instance in Lucerne) or the FDP (in Ticino). Term limits imposed by the cantonal parties can be either strict by not allowing any exceptions (for instance the Greens in Geneva), or more loosely formulated by indicating what normally is expected (for instance for the CVP in Lucerne). Several cantonal sections, mostly those of the Social-Democrats, explicitly allow for term-limited MPs to be renominated, provided two-thirds of the party delegates support such an extension (see for instance the Social-Democrats of Berne).[13]

Consequently, at the federal level MPs might be subject to constitutionally enforced term limits (if they represent the cantons of the Jura or Obwalden) or to rules imposed by their party, forcing them to step down after a specific time. At the cantonal level either these same party rules apply[14] or the cantonal constitution (resp. the laws on elections) limit the number of terms MPs can sit in parliament. This is the case for the two cantons that impose term limits on their representatives to the federal upper chamber, namely the Jura and Obwalden, while the cantons of Basel-Stadt and Basel-Land,[15] impose only term limits on the members of their cantonal parliaments.

For these cantonal rules, Stadlin (1990, Table I) provides the most comprehensive overview on term limits as of 1990. In Obwalden the constitution of 1968 includes article 49 specifying that members of the cantonal parliament can be in office for a maximum of sixteen years. In Basel-Stadt the members of the cantonal government can be in office for 12 years, and, as noted by Kreis (1984, 113), this term limit was introduced in 1966 due to a popular initiative by

[12] In the appendix we provide a list of party names and their abbreviations as used in this paper (see Table 2).

[13] In the appendix we report information on the various rules adopted on term limits by the cantonal political parties and provide links to the sources we used.

[14] Most party statutes specify term limits for the MPs of the cantonal parliaments and then stipulate that these rules also apply to members of the party elected to the federal chambers.

[15] In the empirical section we will focus, at least in this version of the paper, on these two cantons, as the data available allows for a stronger research design. In Obwalden recorded votes are rare, while in the Jura votes have been recorded only in two terms.

younger bourgeois politicians, which was accepted by a slim majority in a popular vote (55.8 % approval). Burckhardt et al. (1984, 267) confirm the limitation to three mandates (see also Rhinow 1984, 120). Buser (2008, 358) notes that the term limit in Basel-Stadt was increased with the new constitution of March 23, 2005 from three to four terms (see also Wullschleger 2008, 137). In Basel-Land members of the cantonal parliament can not be re-elected after their fourth term, according to article 54 of the constitution of this canton.[16] The limitation to four mandates in the canton of Jura was introduced with the cantonal constitution of 1977 (article 65).[17] For the two cantons that we will cover in the empirical analysis, namely Basel-Land and Basel-Stadt, Table 1 provides summary data on term-limited legislators.[18]

3.2 Data

The empirical analysis relies on data on votes and speeches, as well as private member bills at both the cantonal and federal levels. Data for the National Council (debate transcripts, votes, etc.) were secured from an as-of-yet unpublished part of the Parliament website that we were given access to. Our records of parliamentary debates in the lower house include 63,416 speeches, delivered by 381 individuals, spanning 17 years (1999-2015). Transcripts of parliamentary debates in the upper house cover 29,183 speeches, by 85 individuals, also spanning 17 years (1999-2015). The data further include over 1.9 million individual votes cast in the National Council, covering the years 2003-2015.[19] The speeches by MPs at the national level are especially valuable as information on voting is only easily available for the lower house, which employs an electronic voting system. The upper house has introduced such a voting system only recently, and not all

[16] This provision was, apparently introduced in popular vote in 1989 and has been in force since July 1989 (see `https://www.admin.ch/opc/de/classified-compilation/19840090/index.html`, accessed August 22, 2017).

[17] As the data that we will use below for our empirical analysis is only easily available for the last decade or so, we can unfortunately not assess (at least in this paper) what the effect of the introduction of term limits was for members of parliament.

[18] For the two other cantons, namely the Jura and Obwalden, the data available do not allow us (at the present time) to carry out detailed empirical analysis. In the first canton, voting data are not available for two subsequent terms, while in the other canton decisions are normally reached by signal voting, with no information on the individual voting behaviour of MPs.

[19] These stem from the electronic voting system that was introduced in 1996 (Hug 2010). Until 2007 only a subset of these votes were publicly available, namely those on final passage, urgent measures and the debt-brake and those requested as roll call votes.

Table 1: Term-limited MPs in Basel-Land and Basel-Stadt (1987-2016)

	Basel-Land			Basel-Stadt		
year	size of parliament	term-limited MPs	share	size of parliament	term-limited MPs	share
1988				130	23	0.18
1991	84	2	0.02			
1992				130	12	0.09
1995	90	2	0.02			
1996				130	15	0.12
1999	90	2	0.02			
2000				130	14	0.11
2003	90	0	0.00			
2004				130	15	0.12
2007	90	3	0.03			
2008				100	5	0.05
2011	90	2	0.02			
2012				100	5	0.05
2015	90	7	0.08			
2016				100	12	0.12

Calculations based on data on candidates in cantonal elections provided by the Swiss statistical office.

voting information is available (see Benesch et al. 2018). We complemented this data with information on final passage votes in the upper house for two legislatures coded based on video recordings (see Bütikofer 2014; Martin and Hug, 2018 (forthcoming)). In addition we have data on parliamentary activities by MPs, more specifically on parliamentary initiatives, motions and postulates that they submitted.[20]

For the two cantonal parliaments we obtained similar data from their respective websites.[21] Since September 2009 the parliament of Basel-Land uses an electronic voting system and records all votes, as does the parliament of the canton of Basel-Stadt, though only since June 2012. In addition, these websites list all activities of the MPs which we retrieved for our analysis.[22]

[20]These different interventions by MPs differ by the extent to which they bind the government when responding to these parliamentary activities (see Gava et al. 2017). We thank Roy Gava for having given us access to this database.

[21]Thomas Dähler and Peter Frankenbach from the parliamentary services of Basel-Stadt provided access to additional data and were extremely helpful in providing help in using it, while Christian Müller provided us with some missing data for some MPs from Basel-Land.

[22]As there is no difference in the availability of voting data in these two cantonal parliaments, we refrained from collecting information on speeches from their MPs.

3.3 A Differences-in-Differences Research Design

The nature of the changes studied in this paper allows us to leverage a differences-in-differences (DiD) identification strategy (for a similar approach to assess the effects of term limits in US state legislatures, see Fouirnaies and Hall 2018). This design is premised on the ability to control for unobserved time-varying confounders using a time or cohort dimension, and is particularly suitable for an identification problem where we are interested in group-level variables. When the treatment of interest varies at the group level, we can use the DiD set-up to gauge individual-level effects using aggregate data (Angrist and Pischke 2008, Chapter 5). The DiD strategy relies on the logic of comparing the differences pre- and post-treatment in the outcome of a treatment and a control group.

In our application, we have data on term-limited MPs and legislators that are not subject to such constraints. The observed behavioural changes (e.g. in voting or speech-making) associated with the forced retirement due to a term limit allows us to assess more cleanly how the removal of re-election considerations affects MPs.[23] The DiD identification strategy relies on the presence of a control ($G_{control}$) and a treatment group ($G_{treatment}$) at the pre-treatment (0) and post-treatment (1) stages (Angrist and Pischke 2008, 228-229). We assume that, absent the treatment, the behaviour of both groups develops in tandem (i.e. the parallel trend assumption). Given this assumption, we can isolate the effect of our predictor of interest as $(G_{treatment1} - G_{treatment0}) - (G_{control1} - G_{control0})$. In other words: we observe the difference between the differences in behaviour between the treatment and the control group.

In our particular case, we rely on the fact that all MPs have to be re-selected and re-elected at the end of a term to make it to the next term. This is the case *except* if MPs are in their last parliamentary term because of a term limit or because they have decided, before the end of the term, to no longer seek re-election. Consequently, the treatment (i.e. the absence of a re-election constraint, whether voluntary or involuntary) is only present in the last term in office. The DiD design we apply in this paper compares legislators in term t with the same legislators in term $t-1$. We establish which legislators are in their last term

[23] Fouirnaies and Hall (2018) offer a nice theoretical discussion why such differences-in-differences design are recommended, especially as they can take account of the fact that voters might, when having the chance, reelect mostly capable MPs.

at stage t, and compare the changes in (in)activity (i.e. shirking and slacking) between these two legislatures for MPs in the different classes, such as term-limited MPs and those not seeking re-election, etc.[24]

4 Empirical Analysis

In what follows we use our DiD set-up to analyze shirking and slacking at the cantonal and the federal levels. As our discussion of the available data implies, these two levels have each their advantages and disadvantages. While the two cantons with the constitutionally mandated term limits allow for a cleaner identification of the term limit effect, MPs in these parliaments are more likely to consider a further political career at the federal level. At the federal level, by contrast, retiring from parliament also implies the end of the political career in elected office, with the exception of the few MPs that consider executive offices (and almost always these are not term limited MPs). On the other hand, only very few MPs at the federal level are subject to constitutionally mandated term limits, while most have to retire due to party rules, which sometimes prove more flexible. This latter aspect renders the clean identification of the term limit effect more difficult.[25]

4.1 Shirking in Parliament

We first present our results for several indicators of shirking at the federal and cantonal levels. Our first hypothesis states that we expect term-limited and retiring legislators to be more likely to diverge from the party line than other MPs. To measure whether such divergences are observable we rely on two sets of behaviours, namely voting and speech-making. While the analyses of roll-call votes has been a mainstay in such studies, quantitative analyses of speeches have only recently become an important alternative to infer ideological positions of MPs (e.g. Proksch and Slapin 2014; Bäck and Debus 2016; Schwarz et al. 2017).

[24] We obtained information on retiring MPs from the website of the Federal parliament (`www.parlament.ch`) and a list of cantonal MPs and candidates provided to us by the Swiss Statistical Office complemented it with information on term limits from cantonal constitutions and party statutes.

[25] We note that the numbers of term limited MPs in these different categories are too small to consider separate analyses based on these subsets.

While for three of our parliamentary chambers, namely the lower house at the federal level and the two chambers in the cantons of Basel-Land and Basel-Stadt, we have a full record of all votes, we fail to have the same information for the upper house at the national level (see Bütikofer 2014; Benesch et al. 2018). Thus, while we will use voting data to assess the loyalty of MPs (and their ideological position) to the party line, we first rely on a quantitative analysis of speeches to determine whether MPs toe the party line. To do so we draw on all speech records from the lower and upper houses at the federal level for the period 1999-2015. We estimate how close legislators are to their party using a novel machine-learning approach proposed by Peterson and Spirling (2018) (see also Goet 2017). This approach fits a predictive model to a training sample of speeches from a party, and uses the trained model to subsequently predict a held-out sample of speeches. The class probability tied to an individual obtained with this classifier tells us something about the "partyness" of members, i.e. how close their language use is to their co-partisans. In simple terms, partisanship is measured as the degree to which we can predict a member's party affiliation based on what they say in parliamentary debates. Details of this approach are provided in the appendix.

We apply this method to our sample of speeches (for the 2003-2011 period with n = 28,334 for the Lower House and n = 15,983 for the Upper House). We use a stochastic gradient descent (SGD) classifier with a log loss function and l2 regularisation (Bottou 2004), and balanced party weights.[26] Subsequently, we take the probability class estimates from this model as a measure of the distance between legislators and their parties.[27] Figure 1 plots shirkers among the three classes of legislators (retiree/term-limited/continuing) across the 47th and 48th legislatures. Counter to expectations, term-limited MPs are on average *more* likely to use "partisan" language than retirees and continuing legislators. From their second to last term to their last term, however, with the exception of their last year, there appears to be a decrease in the use of such "partisan" language.

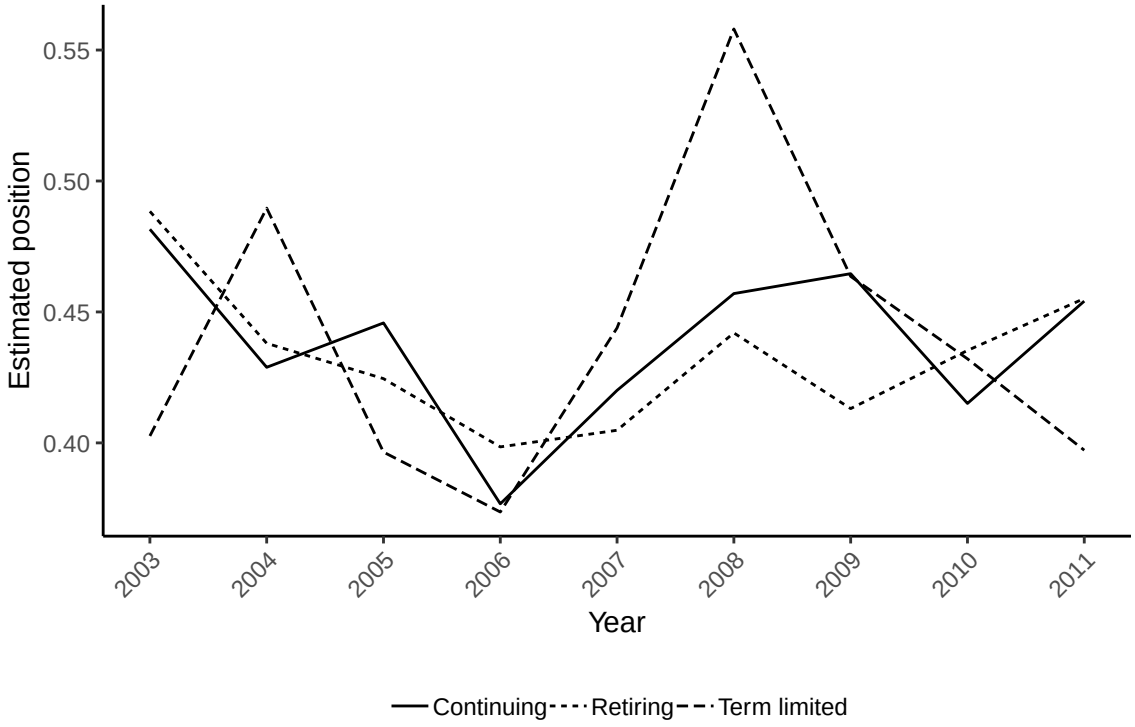
We use the data depicted in Figure 1 in a more systematic analysis below, but will first discuss our other measures for shirking behaviour based on voting behaviour. While, as we noted above, roll-call votes have been rare in the

[26]The weights we use are defined as $\frac{n_{total}}{p*n_p}$, where n_{total} is the total number of speeches, p is the number of unique parties, and n_p = number of speeches of party p.

[27]By using ten-fold cross-validation, we obtain estimates for each individual speech. We take the mean across these estimates for legislator for each year as a measure of their "partyness".

Figure 1: Shirking in National Council and Council of States' debates, 47th vs. 48th Legislature

Notes: Lines show the mean position as measured by the classifier (approach described in text) across all speeches made by legislators in the three different groups of members: i) retirees (whether because of a failure to secure re-election, or intentional retirement); ii) term-limited legislators; and iii) continuing MPs.



Swiss upper house for much of the period we study (see Bütikofer and Hug 2010; Bütikofer 2014; Benesch et al. 2018), we can draw on data collected in the upper house based on video recordings for a subset of votes (see Bütikofer 2014; Martin and Hug, 2018 (forthcoming)). We use all final passage votes for the 47th (2003-2007) and the 48th (2007-2011) legislative periods gleaned from these video recordings for the upper house and combine it with voting information on the same final passage votes in the lower house. These votes together with a specificity of the Swiss political system, due to its heavy use of instruments of direct democracy, allows for a more detailed analysis of the shirking behaviour of MPs. More specifically, as MPs vote several dozen times in each legislative period on issues on which their voters also express their views in the cantonal vote in referendums, behavioural data is available from both MPs and the me-

dian voter in each canton. This information was used by Hug and Martin (2012) to position, based on an item-response theory (IRT) model, voters and MPs of the lower house in the same ideological space (for a similar approach, see Masket and Noel 2012).[28] Estimating positions for both MPs and their voters in the same space allows calculating distances with respect to the two main principals of MPs, namely their party and their voters (the latter distance is the focus in the study by Hug and Martin 2012). Drawing on additional data collected on votes in the upper house based on video recordings (see Bütikofer 2014) Martin and Hug (2018 (forthcoming)) propose a similar analysis taking into account MPs of both chambers of parliament. Thus, below we use this data on the ideological distance between each MP and his/her cantonal median voter as calculated by Martin and Hug (2018 (forthcoming)), but determine the distance to the average position of the MPs of their party as well.

Finally, we also use the full voting record that we have available for the Swiss lower house and the two cantonal parliaments to calculate loyalty scores. These simply reflect the share of votes in which an MP voted with the majority of his or her party. For each of these indicators for shirking we estimate, by adopting our differences-in-differences design, the effect of being subject to a term limit, respectively retiring voluntarily, while controlling for a set of confounders.[29]

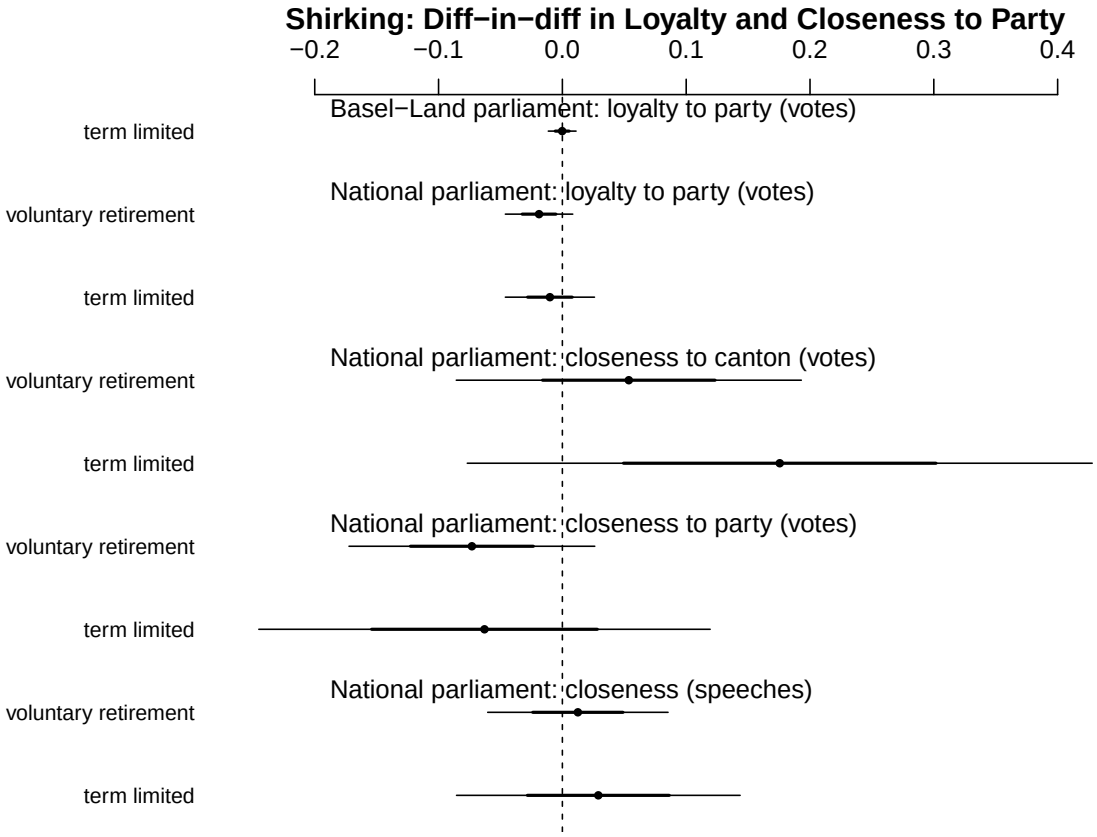
The results from our models for our *shirking* analyses are shown visually in Figure 2, which plots the coefficient estimates with their associated 95 percent confidence intervals. Starting with our novel measure based on speeches in the two chambers at the federal level we find, contrary to our hypothesis (H1), positive coefficients both for term-limited and voluntarily retiring MPs. Both coefficients come, however, with confidence intervals that comprise the value of zero. Thus, it appears that MPs at the end of their careers in both chambers align their speeches slightly more closely to their respective party's line. These adjustments

[28] Using bridging observations, in our case votes on topics subject to a referendum vote, have been used in many other contexts as well and recently have become the object of some criticism (Lewis and Tausanovitch 2013; Jessee 2016). For the data we use below, Martin and Hug (2018 (forthcoming)) evaluate this approach regarding these critiques and find no evidence for concerns.

[29] We use an almost identical set of controls in each analysis, namely party affiliation (as term limits are party specific at the national level), age, seniority (except for the cantonal parliament where we add one control for the cohort to which an MP belongs), and at the national level whether an MP belongs to the upper or lower chamber. The full regression results are reported in the Appendix (see Tables 11 and 12).

Figure 2: 95% Coefficient Plot of Indicators of Shirking in the Federal and Cantonal Parliaments

Note: Coefficient estimates and 95% confidence intervals of predictors of shirking. Estimates based on models as reported in Appendix A.1.



are estimated, however, with considerable uncertainty.

A more nuanced picture emerges from our analysis of the ideological distances of MPs to their respective parties and cantonal electorates, which we converted into closeness measures to allow for easier comparisons across analyses. The coefficients for term-limited and voluntarily retiring MPs are negative for the closeness to their respective party and positive when we consider the closeness to the cantonal electorates. Again, the confidence intervals in all cases are quite large and include the value of zero. Nevertheless, these results suggest, in accordance with our hypothesis, that term-limited MPs in particular move in their voting behaviour away from their party and, interestingly, come closer to the

positions of their cantonal electorate in their final term. While the trends are similar for voluntarily retiring MPs, the differences are slightly smaller. The combined results from these two analyses[30] suggest that term-limited MPs actually do shirk away from the partisan principal, and by doing so move closer to the preferences of their voters. These results provide suggestive evidence that term-limited MPs shirk at least partly from their party's line and this to the benefit of their respective cantonal median voter.

When we turn to the loyalty of MPs to their party (which covers all votes, and not only final passage votes as in the previous analysis) we find that at the federal level, lower house term-limited and voluntarily retiring MPs become less loyal to their party in votes. Again, however, these effects fail to satisfy conventional standards of statistical significance. At the cantonal level we find in both parliaments a slight, though statistically insignificant, increase in the loyalty of term-limited MPs toward their respective party.[31] This minor effect might be due to what Lott (1990) found for the U.S. at the state level. Cantonal politicians hardly have to bury their careers when being term-limited: as federal offices are a possibility, shirking and slacking are less of an option if a further political career is envisaged.

In summary, MPs at the federal level (though not at the cantonal level) appear to engage in shirking when they no longer face a reelection constraint. This effect is most pronounced in the voting behavior, where MPs that are term-limited or not running again for other reasons, become slightly less loyal to their party, which translates also into less closeness ideologically speaking. Our results suggest that this reduced closeness to an MP's party comes to the benefit of a increased closeness to the MP's cantonal electorate. Consequently, while there appears to be evidence of shirking in voting behaviour, our analyses of speeches finds an opposite effect.

[30] As these two dependent variables are obviously related, we estimated the various models also as a seemingly unrelated equations model. The results are, however, unaffected by this modelling choice.

[31] As the voting record from both cantonal parliaments is quite short, we can only compare the behaviour of MPs in the currently ongoing term (elections occurred in 2015, respectively 2016 in Baselland, respectively Basel-Stadt. This also implies that we can not assess the difference in the effect of stepping down between term-limited MPs and those retiring voluntarily. This is likely to make the estimations of our main coefficient less precise.

4.2 Slacking in Parliament

Our expectation of slacking behaviour, formulated in H2, holds that term-limited and retiring legislators should be less likely to engage in parliamentary activities compared to their continuing colleagues. Our investigation of slacking in the federal and cantonal legislatures relies on three different indicators: i) participation in parliamentary debates; ii) non-participation in votes; iii) abstentions in votes; and iv) activities like drafting of motions, postulates and interpellations.

We first turn to our analysis of slacking in parliamentary speeches at the federal level. The speeches by MPs in parliamentary debates in the National Council and the Council of States allow us to get an indication for "slacking" behaviour. To this end, Figure 3 shows the mean level of speeches made per year among two classes of "exiteers" (voluntary retirees and term-limited MPs in 2011) and continuing legislators.[32] Several patterns become clear from these data. First, congruent with our expectations, continuing legislators are by far most active when it comes to the number of speeches made than their term-limited colleagues, for the entire period. Second, the distinction between slackers among retirees and continuing MPs is slightly more mixed, with the highest degree of slacking occurring among the first group in 2005 and 2009-2011, but among the latter group for the remaining years.

For our regression analyses, we define "participation" as the number of speeches made by an individual as a share of the total number of debates held in the legislative period.[33] Thus, to estimate our DiD-model for the change in participation rates we employ a standard OLS model. Here, we compare legislators in the 47th (2003-2007) and 48th (2007-2011) legislatures, identifying individuals who retire in the latter,[34] and assessing their levels of inactivity compared to other MPs

[32] These groups are defined as follows:

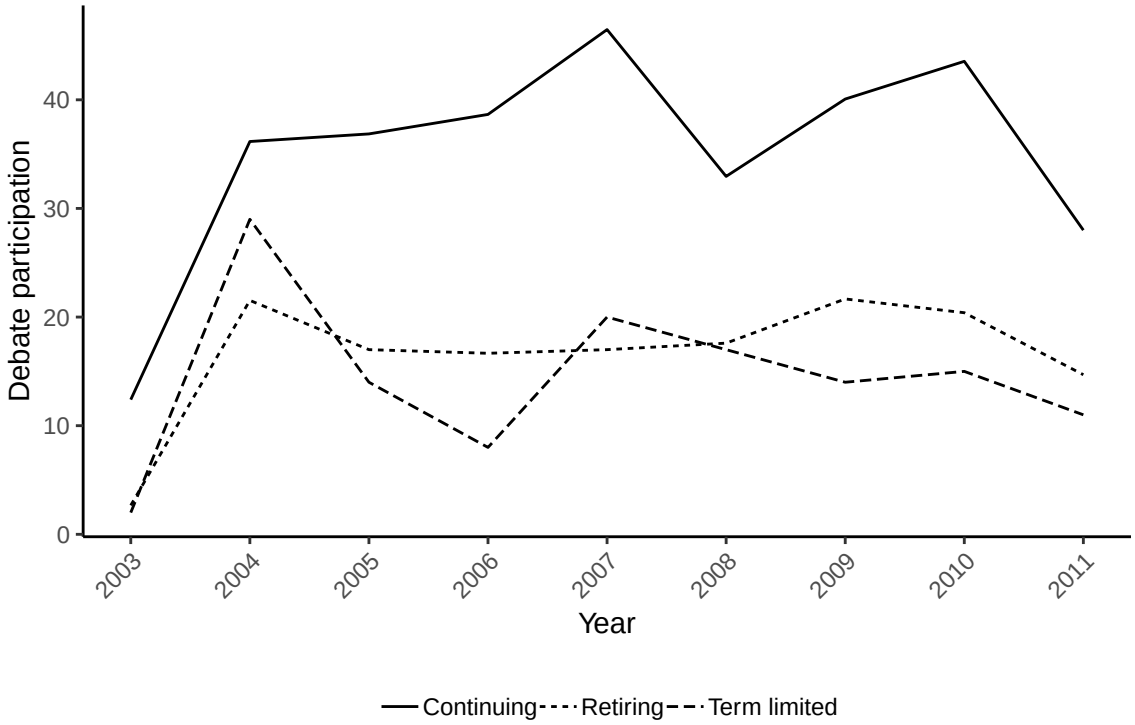
1. Term-limited MPs who retire in 2011 (are classified as such for the entire duration of the 47th and 48th legislative terms);
2. Retiring MPs (are classified as such for the term in which they retire);
3. Continuing MPs: those that fall in none of the three preceding categories.

[33] A "debate" is defined as any discussion on a distinct topic, identified by means of the identifiers included in the debate data provided by the Swiss parliament.

[34] Term-limited legislators who left the Nationalrat in 2011 include: Christine Goll (SP), Mario Fehr (SP), Jean-Claude Rennwald, Simon Schenk (SVP), and Doris Stump (SP). We identified all the other voluntarily retiring MPs on the basis of information provided on the

Figure 3: Participation in National Council and Council of States Debates, 1999-2011

Notes: Lines show the average number of speeches made by three different groups of legislators: i) retirees; ii) term-limited legislators; and iii) continuing MPs.



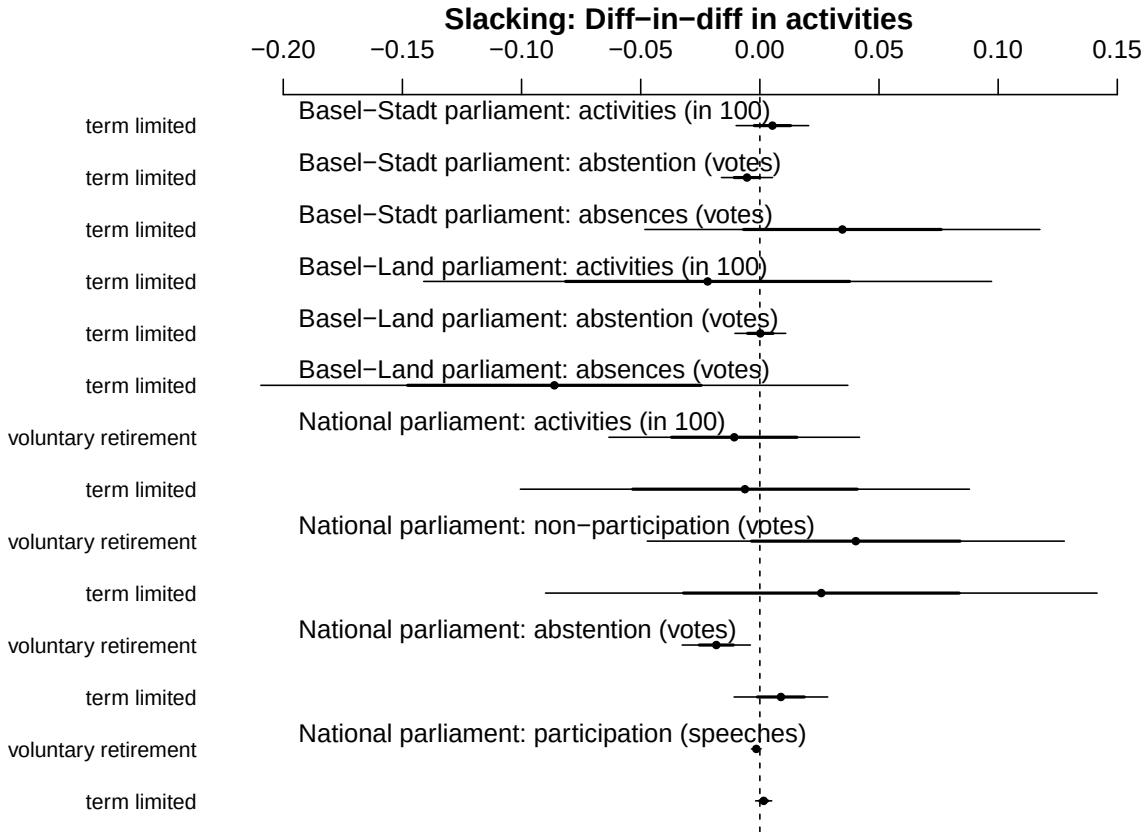
between the two periods. At the national level we can also take into account the number of activities (motions, postulates, etc.) by each MP (see data from Gava et al. 2017) to assess whether slacking occurs. We also have similar data for the two cantonal parliaments, as well as information on abstention rates and absenteeism in these two parliaments.

Figure 4 shows the estimates of our DiD analysis for all our indicators of slacking. The results from the federal-level tests of debate participation do not provide clear evidence in favour of our slacking hypothesis. Being term-limited makes legislators *more* likely to participate compared to other classes of MPs, as do MPs who retire voluntarily. However, neither effect is statistically significant. Further, we do not find a statistically significant decline in *abstentions* in votes in the groups of term-limited legislators. We do however find such an effect for

website of the parliament (see `www.parlament.ch`).

Figure 4: 95% Coefficient Plot of Indicators of Slacking in the Federal and Cantonal Parliaments

Note: Coefficient estimates and 95% confidence intervals of predictors of slacking. Estimates based on models as reported in Appendix A.1.



voluntary retirees, significant at a 95 percent confidence level. Finally, our results for non-participation provide some evidence in favour of our hypothesis. Both term-limited MPs and voluntary retirees reduce their participation in votes more so than their continuing colleagues. Both effects remain, however, statistically insignificant. Regarding the number of activities that MPs at the federal level deploy we find a slight decrease both for term-limited and voluntarily retiring legislators. While the latter effect is slightly larger, the confidence interval for both coefficients are large and include that value of zero.

Turning to the effects at the cantonal level we find mixed results, which differ across the two parliaments. Regarding activities we find that in Basel-Stadt

term-limited MPs slightly increase their level, while in Baselland we find a result in line with H2, namely a negative effect, though with a very large confidence interval. Regarding absenteism and abstentions our results suggest that they actually decrease in Baselland among term-limited MPs. In Basel-Stadt, on the other hand we find an increase in absences and a decrease in abstentions. All these coefficients come, however, with quite large confidence intervals which include the value of zero.[35]

5 Conclusion

Assessing the influence of constituencies and parties on MPs' behaviour is a difficult task. Many different approaches have been proposed and used, to varying degrees of success, and with varied (and sometimes contradictory) outcomes. As constituencies and parties are likely to influence MPs because the latter wish, with the help of the former, to win re-election, MPs' behaviour should change when re-election is not or can not be sought.

While several studies have assessed whether retiring MPs start slacking and/or shirking in their last term, such studies face a chicken-and-egg problem. MPs might also want to retire because they slack and/or shirk. Consequently, term limits that impose mandatory retirement help alleviate these concerns. In this paper, we leveraged such term limits that exist in Switzerland due to cantonal constitutions both in the federal upper house and cantonal parliaments, and in all parliaments due to rules imposed by political parties.

Analyzing votes, speeches and other activities in the two federal chambers and two cantonal parliaments, we find mixed evidence for our two hypotheses. Regarding *shirking* we find no evidence to suggest that term-limited MPs in the cantonal parliaments become less loyal to their party. This might be due in part to the fact that cantonal offices in several instances are stepping stones for careers at the federal level. At the federal level, the results are more nuanced. Using both speeches and votes in the federal chambers, we find that term-limited and retiring MPs, compared to MPs representing themselves for re-election, are

[35] The rather weak results, especially for the parliament of Basel-Land might be due to the fact that the number of term-limited MPs is rather small and that in this canton a popular initiative was launched, but voted down in 2017, to abolish the term limits. See `https://www.srf.ch/news/schweiz/abstimmungen/abstimmungen/abstimmungen-bl/klares-nein-zur-bruderholz-initiative-im-baselbiet`, accessed November 12, 2017).

moving slightly away from their party. Similarly, retiring MPs become less loyal to their party in their last term. While these effects are suggestive, they are not statistically significant. We also find some evidence that suggests that the shirking behaviour of federal MPs goes hand-in-hand with a move toward the preferences of their respective cantonal median voters.

Regarding *slacking behaviour*, we fail to find evidence for our hypothesis at the cantonal level. At the federal level we do find some evidence to suggest that retirees and term-limits MPs change their behaviour. Legislators that do not seek re-election reduce their debate participation in their last term, but this effect is only significant for voluntary retiring MPs. On the other hand, only term-limited MPs appear to increase their non-participation rate in their last term, compared to MPs seeking re-election, while the other retiring MPs are increasing their participation in votes only slightly.

Overall, our results suggest that term-limited MPs and voluntarily retiring MPs at both the federal and (and to much more limited extent) the cantonal levels in Switzerland adjust their behaviour due to the removal of the re-election constraint. While the Swiss case presents several advantages, such as different term limits, parliaments at several levels, and availability of unique data, there are also some limitations to our study. First, at the federal level, only a very small number of MPs (three at the most) are subject to constitutionally imposed term limits, while all other MPs may be subject to party rules. While this mixture has advantages—for instance the number of terms specified in term limits varies—it also restricts our analyses. Similarly, in the two cantonal parliaments that we analyse the same term limits apply to all MPs, allowing us only to partially distinguish the effect of seniority from that of term limits. As the cantonal MPs might also have ambitions at the federal level, the removal of the cantonal re-election constraint might also be of lesser consequence. We leave these, and other challenges, for future work.

A Appendix

In Table 2 we list all party names and their abbreviations as used in this paper.

Table 2: Party names and abbreviations

name	**abbreviation**
Bourgeois democratic party	BDP
Radical-liberal party	FDP
Green Party	GPS
Green list	GL
Free list	FL
Christian-social party	CPS
Alternative List	AL
Evangelical party/Federal democratic Union	EVP/EDU
Social-democrats	SP
Swiss People's party	SVP

A.1 Shirking & Slacking Analyses

In Figure 5 we depict abstention and absence rates for MPS at the national level. In this figure, we use voting records to assess the slacking behaviour of MPs. We consider two indicators of "slacking": i) abstentions; and ii) non-participation (i.e. not voting). Both indicators are defined as the share of abstentions respectively non-participation of the total number of votes cast in a year. Counter to our expectations, MPs who are subject to a term-limit in the National Council do not appear to be less active than voluntary retirees and continuing legislators. All three groups show relatively similar patterns of abstention (left panel in Figure 5) and non-participation (right panel) in the 47th and 48th legislatures. Our results for non-participation in votes (Figure 5, right panel) are *slightly* more in line with our expectations, as retiring legislators are particularly subject to being absent. However, continuing legislators are still *less* active than term-limited MPs, which runs counter to our slacking hypothesis. Table 7 and Table 8 report our analyses of activities in the two cantonal parliaments, while Table 9 and Table 10 shows the results of an analysis of the loyalty of MPs to their respective parties. Tables 13 and 14 report the results of models replicating the analyses reported in tables 11 and 12 while allowing for different effects of term limits and retirement for MPs in the two chambers.

Figure 5: Abstention and non-participation in National Council votes, 47th and 48th legislatures

Notes: Lines show the average number of votes participated among the three different groups of legislators: i) retirees; ii) term-limited legislators; and iii) continuing MPs.

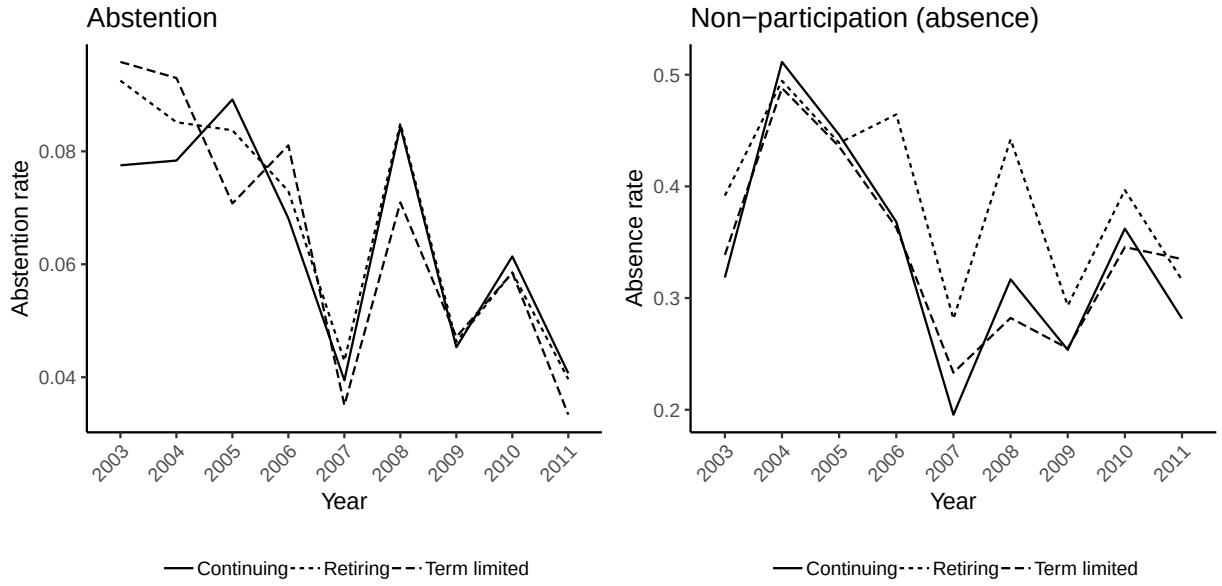


Table 3: OLS estimates of DiD of slacking and shirking in votes in the National Council (Non-Participation)

	Dependent variable:		
	Diff-in-diff (48th Leg. - 47th Leg.)		
	OLS		
	Abstention	Non-participation	Loyalty
	(1)	(2)	(3)
Term-limited	0.009 (0.010)	0.026 (0.058)	−0.010 (0.018)
Voluntary retirement	−0.018** (0.007)	0.040 (0.044)	−0.019 (0.014)
Age	0.001* (0.0005)	−0.001 (0.003)	0.0002 (0.001)
Seniority	−0.001 (0.001)	−0.017*** (0.004)	0.001 (0.001)
CsP	−0.062* (0.037)	−0.362 (0.218)	−0.169** (0.068)
CVP	−0.014 (0.021)	−0.030 (0.132)	−0.005 (0.041)
EVP	−0.060 (0.040)	−0.093 (0.237)	−0.181** (0.074)
FDP	−0.036* (0.021)	0.034 (0.135)	−0.022 (0.042)
FGr	−0.085** (0.037)	0.119 (0.218)	−0.012 (0.068)
Gru	−0.075*** (0.024)	0.040 (0.149)	−0.015 (0.046)
LPS	−0.032 (0.038)	0.366 (0.224)	−0.105 (0.070)
PdA	−0.089** (0.037)	−0.177 (0.216)	0.005 (0.067)
SP	−0.059*** (0.020)	0.069 (0.127)	−0.022 (0.040)
SVP	−0.070*** (0.022)	0.037 (0.140)	0.023 (0.043)
Observations	105	92	92
R^2	0.590	0.595	0.355
Adjusted R^2	0.526	0.523	0.239
Residual Std. Error	0.031 (df = 91)	0.177 (df = 78)	0.055 (df = 78)
F Statistic	9.337*** (df = 14; 91)	8.194*** (df = 14; 78)	3.063*** (df = 14; 78)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 4: OLS estimates of shirking in debates in the National Council and Council of States

	Dependent variable:		
	Partyness		Diff. partyness
	OLS		*OLS*
	47th Leg.	48th Leg.	Diff. 48-47
	(1)	(2)	(3)
Term-limited 48th Leg.	−0.019 (0.049)	0.013 (0.044)	0.029 (0.057)
Retired 48th Leg.	0.012 (0.031)	0.030 (0.027)	0.013 (0.036)
Age at 1st year of leg. session	−0.001 (0.002)	−0.002 (0.002)	−0.0002 (0.003)
Years served at 1st year of leg. session	0.002 (0.003)	0.004 (0.003)	0.001 (0.003)
CsP	0.372** (0.174)	0.397** (0.159)	0.013 (0.209)
CVP	0.416*** (0.110)	0.420*** (0.104)	−0.013 (0.138)
EVP	0.243 (0.193)	0.445** (0.176)	0.181 (0.232)
FDP	0.353*** (0.113)	0.395*** (0.106)	0.026 (0.141)
FGr	0.301** (0.145)	0.440*** (0.133)	0.123 (0.175)
Gru	0.446*** (0.130)	0.590*** (0.121)	0.124 (0.160)
SP	0.551*** (0.101)	0.517*** (0.097)	−0.044 (0.128)
SVP	0.510*** (0.111)	0.581*** (0.106)	0.053 (0.140)
Upper House	0.102*** (0.038)	0.078** (0.032)	−0.028 (0.044)
Observations	112	112	110
R^2	0.915	0.937	0.101
Adjusted R^2	0.904	0.929	−0.020
Residual Std. Error	0.144 (df = 99)	0.128 (df = 99)	0.168 (df = 97)
F Statistic	81.898*** (df = 13; 99)	113.902*** (df = 13; 99)	0.836 (df = 13; 97)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 5: OLS estimates of slacking in debates in the National Council and Council of States

	Dependent variable:		
	Speech participation rate		Diff. speech participation rate
	OLS		*OLS*
	47th Leg.	48th Leg.	Diff. 48-47
	(1)	(2)	(3)
Term-limited 48th Leg.	−0.002 (0.002)	−0.0002 (0.001)	0.002 (0.002)
Retired 48th Leg.	−0.001 (0.001)	−0.002*** (0.001)	−0.001 (0.001)
Age at 1st year of leg. session	0.0001 (0.0001)	0.0001** (0.0001)	0.0001 (0.0001)
Years served at 1st year of leg. session	0.0002** (0.0001)	−0.00004 (0.0001)	−0.0003*** (0.0001)
CsP	−0.002 (0.006)	−0.002 (0.004)	−0.001 (0.006)
CVP	−0.0004 (0.003)	−0.0001 (0.003)	−0.001 (0.003)
EVP	0.006 (0.006)	0.002 (0.005)	−0.005 (0.006)
FDP	−0.002 (0.004)	−0.002 (0.003)	−0.001 (0.004)
FGr	0.004 (0.006)	0.005 (0.004)	−0.0001 (0.006)
Gru	−0.0002 (0.004)	−0.001 (0.003)	−0.002 (0.004)
SP	−0.001 (0.003)	0.0001 (0.002)	0.001 (0.003)
SVP	−0.002 (0.004)	−0.002 (0.003)	−0.001 (0.004)
Upper House	0.004*** (0.001)	0.005*** (0.001)	0.001 (0.001)
Observations	112	113	110
R^2	0.611	0.759	0.149
Adjusted R^2	0.560	0.727	0.035
Residual Std. Error	0.005 (df = 99)	0.003 (df = 100)	0.005 (df = 97)
F Statistic	11.978*** (df = 13; 99)	24.176*** (df = 13; 100)	1.309 (df = 13; 97)
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 6: Activities in the National Parliaments

	Dependent variable:
	differences in number of activities
term-limited	−0.626 (4.712)
voluntary retirement	−1.075 (2.630)
age	0.015 (0.102)
seniority	−0.208 (0.188)
BDP	0.727 (10.942)
CVP	1.892 (5.040)
FDP	1.033 (4.857)
GPS	−1.692 (5.065)
SP	0.794 (4.575)
SVP	0.590 (4.656)
upper house	−0.946 (2.119)
Observations	163
R^2	0.023
Adjusted R^2	−0.048
Residual Std. Error	10.442 (df = 152)
F Statistic	0.325 (df = 11; 152)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 7: OLS Estimates of Slacking in Baselland

	Dependent variable: difference in		
	share of absences	ashare of abstentions	number of activities
	(1)	(2)	(3)
term-limited	−0.086	0.0002	−2.191
	(0.062)	(0.005)	(5.958)
Bürgerlich Demokratische Partei	−11.097	0.862	−746.187
	(6.619)	(0.573)	(640.303)
Christlichdemokratische Volkspartei	−11.111	0.840	−744.263
	(6.612)	(0.573)	(639.684)
Evangelische Volkspartei	−11.018	0.872	−728.457
	(6.530)	(0.565)	(631.740)
FDP	−11.062	0.834	−755.489
	(6.577)	(0.569)	(636.231)
Grüne-Unabhängige	−11.120	0.842	−778.200
	(6.606)	(0.572)	(639.045)
Grüne Partei	−11.168	0.843	−750.685
	(6.605)	(0.572)	(639.024)
Parteilos	−11.006	0.831	−740.326
	(6.602)	(0.572)	(638.703)
Schweizerische Volkspartei	−11.135	0.829	−744.525
	(6.623)	(0.574)	(640.762)
Sozialdemokratische Partei	−11.053	0.841	−739.499
	(6.617)	(0.573)	(640.106)
only one reelection	−0.055	−0.011**	1.051
	(0.060)	(0.005)	(5.760)
age at beginning of term	0.006	−0.0004	0.372
	(0.003)	(0.0003)	(0.320)
Observations	35	35	35
Residual Std. Error (df = 23)	0.126	0.011	12.171
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 8: OLS Estimates of Slacking in Basel-Stadt

	Dependent variable: difference in		
	share of abstentions	share of abstaining	number of activities
	(1)	(2)	(3)
term-limited	0.032	−0.005	0.527
	(0.044)	(0.005)	(0.762)
FDP	0.035	−0.005	2.096
	(0.088)	(0.011)	(1.518)
GB	0.055	−0.015	0.068
	(0.085)	(0.010)	(1.473)
LDP	0.083	0.0004	1.363
	(0.079)	(0.010)	(1.362)
SP	0.091	0.0004	1.836
	(0.074)	(0.009)	(1.284)
SVP	0.029	−0.001	0.465
	(0.078)	(0.009)	(1.350)
age at beginning of term			−0.001
			(0.020)
only one reelection	0.096***	0.005	−0.284
	(0.035)	(0.004)	(0.607)
Constant	−0.087	0.002	−0.681
	(0.072)	(0.009)	(1.680)
Observations	51	51	51
Residual Std. Error	0.098 (df = 43)	0.012 (df = 43)	1.681 (df = 42)

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

Table 9: OLS Estimates of Shirking in Baselland

	Dependent variable:
	difference in loyalty
term-limited	−0.0002 (0.006)
Bürgerlich Demokratische Partei	−0.274 (0.428)
Christlichdemokratische Volkspartei	−0.286 (0.425)
Evangelische Volkspartei	−0.311 (0.424)
FDP	−0.278 (0.426)
Grüne-Unabhängige	−0.278 (0.427)
Grüne Partei	−0.281 (0.425)
Grünliberale Partei	−0.290 (0.428)
Schweizerische Volkspartei	−0.284 (0.428)
Sozialdemokratische Partei	−0.279 (0.427)
only one re-election	−0.004 (0.005)
age at beginning of term	0.0001 (0.0002)
Observations	57
Residual Std. Error	0.013 (df = 45)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 10: OLS Estimates of Shirking in Basel-Stadt

	Dependent variable:
	difference in loyalty
term-limited	-0.008
	(0.013)
FDP	0.034
	(0.028)
GB	0.013
	(0.026)
LDP	0.034
	(0.024)
SP	0.063^{***}
	(0.022)
SVP	0.062^{**}
	(0.023)
age at beginning of term	0.0001
	(0.0004)
only one reelection	-0.053^{***}
	(0.011)
Constant	-0.067^{**}
	(0.030)
Observations	46
Residual Std. Error	0.029 (df = 37)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 11: Shirking in the National Council and the Council of States

	Dependent variable:			
	absolute distance to party			difference
	47th	48th		48th-47th
	(1)	(2)	(3)	(4)
Exit reason				
Term-limited 48th Leg.	−0.034	0.032	0.074	0.100
	(0.091)	(0.091)	(0.110)	(0.086)
Retired 48th Leg.	0.057	0.120**	0.136**	0.086*
	(0.052)	(0.053)	(0.064)	(0.050)
Controls				
Years served at 1st year of	−0.005	−0.001	0.002	0.012***
leg. session cohort	(0.005)	(0.004)	(0.006)	(0.004)
Age at 1st year of leg. session	−0.004	−0.002	−0.003	0.001
	(0.003)	(0.002)	(0.003)	(0.003)
BDP		1.870		
		(7.199)		
CVP	10.535	1.815	−4.310	−24.412***
	(9.323)	(7.232)	(11.139)	(8.716)
EVP/EDU	10.883			
	(9.331)			
FDP	10.536	1.836	−4.278	−24.352***
	(9.325)	(7.232)	(11.144)	(8.720)
FL	11.710			
	(9.277)			
GPS	10.615	1.986	−4.075	−24.321***
	(9.311)	(7.221)	(11.123)	(8.703)
SP	10.627	1.953	−4.158	−24.306***
	(9.306)	(7.214)	(11.119)	(8.701)
SVP	10.935	2.309	−3.744	−24.209***
	(9.309)	(7.221)	(11.123)	(8.704)
Upper House	0.141***	0.295***	0.335***	0.266***
	(0.050)	(0.043)	(0.054)	(0.042)
Observations	146	214	146	146
R^2	0.727	0.668	0.681	0.282
Adjusted R^2	0.703	0.650	0.658	0.230
Residual Std. Error	0.229 (df = 134)	0.255 (df = 203)	0.282 (df = 136)	0.220 (df = 136)

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

Table 12: Shirking to the cantons in the National Council and the Council of States

	Dependent variable:			
	absolute distance to cantonal median voter			difference
	47th	48th		48th-47th
	(1)	(2)	(3)	(4)
Term-limited 48th Leg.	0.238	0.025	−0.069	−0.205*
	(0.144)	(0.130)	(0.146)	(0.123)
Retired 48th Leg.	−0.163*	−0.170**	−0.221**	−0.004
	(0.086)	(0.076)	(0.088)	(0.074)
Controls				
Years served at 1st year of	−0.009	−0.005	−0.008	−0.006
leg. session (cohort)	(0.007)	(0.005)	(0.007)	(0.006)
Age at 1st year of leg. session	0.004	−0.002	0.001	−0.004
	(0.005)	(0.003)	(0.005)	(0.004)
BDP		9.265		
		(10.277)		
CVP	17.686	9.612	16.664	11.581
	(14.880)	(10.323)	(14.806)	(12.522)
EVP/EDU	17.537			
	(14.896)			
FDP	17.680	9.910	16.948	11.798
	(14.885)	(10.323)	(14.813)	(12.528)
FL	19.130			
	(14.807)			
GPS	19.217	10.199	17.229	10.514
	(14.862)	(10.307)	(14.784)	(12.503)
SP	18.452	10.266	17.304	11.346
	(14.852)	(10.297)	(14.780)	(12.500)
SVP	18.637	11.291	18.180	12.083
	(14.858)	(10.308)	(14.786)	(12.505)
upper house	−0.604***	−0.661***	−0.743***	−0.299***
	(0.080)	(0.062)	(0.071)	(0.060)
Observations	144	214	144	144
R^2	0.902	0.917	0.911	0.653
Adjusted R^2	0.893	0.913	0.904	0.627
Residual Std. Error	0.364 (df = 132)	0.363 (df = 203)	0.372 (df = 134)	0.315 (df = 134)

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

Table 13: Shirking in the National Council and the Council of States

	absolute distance to party			difference
	47th	48th		48th-47th
	(1)	(2)	(3)	(4)
Exit reason				
Term-limited 48th Leg. × upper house	−0.052	0.067	0.050	0.029
	(0.136)	(0.141)	(0.162)	(0.126)
Retired 48th Leg. × upper house	−0.051	0.190*	0.157	0.148*
	(0.097)	(0.097)	(0.113)	(0.088)
Term-limited 48th Leg. × lower house	−0.045	0.015	0.101	0.177
	(0.126)	(0.121)	(0.156)	(0.121)
Retired 48th Leg. × lower house	0.097	0.097	0.124*	0.053
	(0.060)	(0.061)	(0.074)	(0.058)
BDP		1.440		
		(7.239)		
CVP	11.381	1.392	−4.650	−25.398***
	(9.347)	(7.270)	(11.307)	(8.789)
EVP/EDU	11.744			
	(9.356)			
FDP	11.389	1.410	−4.616	−25.331***
	(9.349)	(7.271)	(11.312)	(8.793)
FL	12.570			
	(9.302)			
GPS	11.478	1.557	−4.417	−25.312***
	(9.336)	(7.260)	(11.291)	(8.777)
SP	11.481	1.530	−4.503	−25.304***
	(9.330)	(7.253)	(11.287)	(8.774)
SVP	11.797	1.879	−4.087	−25.202***
	(9.333)	(7.261)	(11.292)	(8.778)
upper house	0.185***	0.274***	0.331***	0.254***
	(0.064)	(0.050)	(0.065)	(0.050)
cohort	−0.006	−0.001	0.002	0.013***
	(0.005)	(0.004)	(0.006)	(0.004)
Age −0.004	−0.002	−0.003	0.001	
	(0.003)	(0.002)	(0.004)	(0.003)
Observations	146	214	146	146
R^2	0.731	0.670	0.681	0.292
Adjusted R^2	0.703	0.648	0.653	0.229
Residual Std. Error	0.229	0.255	0.284	0.220
	(df = 132)	(df = 201)	(df = 134)	(df = 134)

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

Table 14: Shirking to the cantons in the National Council and the Council of States

	Dependent variable:			
	absolute distance to cantonal median voter			difference
	47th	48th		48th-47th
	(1)	(2)	(3)	(4)
Exit reason				
Term-limited 48th Leg. × upper house	0.329	−0.021	−0.034	−0.120
	(0.218)	(0.201)	(0.214)	(0.181)
Retired 48th Leg. × upper house	−0.143	−0.321**	−0.286*	0.070
	(0.155)	(0.138)	(0.149)	(0.126)
Term-limited 48th Leg. × lower house	0.158	0.040	−0.113	−0.274
	(0.201)	(0.172)	(0.206)	(0.174)
Retired 48th Leg. × lower house	−0.160	−0.116	−0.188*	−0.029
	(0.100)	(0.086)	(0.103)	(0.087)
BDP		10.203		
		(10.308)		
CVP	17.810	10.535	17.835	10.316
	(15.026)	(10.353)	(15.042)	(12.709)
EVP/EDU	17.659			
	(15.044)			
FDP	17.794	10.838	18.117	10.524
	(15.032)	(10.354)	(15.051)	(12.716)
FL	19.249			
	(14.954)			
GPS	19.336	11.131	18.406	9.242
	(15.010)	(10.338)	(15.022)	(12.692)
SP	18.586	11.190	18.481	10.092
	(14.999)	(10.328)	(15.016)	(12.687)
SVP	18.758	12.229	19.359	10.811
	(15.006)	(10.339)	(15.024)	(12.694)
Upper House	−0.624***	−0.618***	−0.726***	−0.332***
	(0.101)	(0.071)	(0.085)	(0.072)
cohort	−0.009	−0.005	−0.009	−0.005
	(0.007)	(0.005)	(0.007)	(0.006)
age	0.003	−0.002	0.001	−0.005
	(0.005)	(0.003)	(0.005)	(0.004)
Observations	144	214	144	144
R^2	0.902	0.918	0.911	0.655
Adjusted R^2	0.892	0.913	0.903	0.623
Residual Std. Error	0.366	0.364	0.374	0.316
	(df = 130)	(df = 201)	(df = 132)	(df = 132)
Note:				*p<0.1; **p<0.05; ***p<0.01

Term limits in cantonal parties

Below, we present a (possibly incomplete) list of cantonal parties that have adopted term limits for their members

- SP
  - AG https://www.sp-aargau.ch/fileadmin/Dokumente/Dokumente/01_Statuten-SPKantonAargau_120529.pdf 12 years limit, 2/3 can renominate.
  - GE http://www.ps-ge.ch/wp-content/uploads/2013/02/Status-du-PSG-Etat-au-4-mars-2017.pdf (accédé le 30.7.2017) .
  - JU http://www.psju.ch/statuts/ art 49 trois périodes consécutifs., 2/3 overturn.
  - NE file:///C:/Users/simon/Downloads/statuts_du_psn_10_novembre_2012_0.pdf 16 ans max. (sans exception).
  - VS file:///C:/Users/simon/Downloads/statuts_psvr_version_definitive_9_04_2016_.pdf 3 mandats, exceptionellement 4ème.
  - BE http://spbe.ch/fileadmin/user_upload/sp-be/sp-kanton-bern-fr/pdf/20130418_Statuts_Rev_congres.pdf (accédé le 30.7.2017).
  - BS https://www.sp-bs.ch/sites/sp-bs.ch/files/documents/statuten_revision_2015.pdf 4 terms (accepted 2015).
  - AG https://www.sp-ps.ch/sites/default/files/documents/links.ag_124-2012.pdf art 31, 12 years, 2/3 overturn. (10. Januar 2012 Einführung).
  - TI 2016 http://www.ps-ticino.ch/wp-content/uploads/2015/02/20160123statutops.pdf: Art. 19: three consecutive terms (max. 16. years).
  - ZH https://spkantonzh.ch/aktuell/artikel/bewegung-ins-parlament/ 2010 https://spkantonzh.ch/app/uploads/2016/12/Reglement-Nominationsverfahren-SR-NR-Wahlen.pdf 3 terms, 2/3 override. https://spkantonzh.ch/app/uploads/2016/12/Reglement-Nominationsverfahren-SR-NR-Wahlen.pdf.
  - none: GR 2016, VD.
- CVP
  - FR https://pdc-fr.ch/wp-content/uploads/2014/12/Statuts_PDC_FR_2014_11-2.pdf 4 terms.
  - SG http://www.cvp-sg.ch/wp-content/uploads/2015/03/CVP-SG_Statuten-2014_def.pdf 4 mandates, 2/3 can overrule, Jakob Büchler will be subject to this rule.
  - LU https://www.cvp-luzern.ch/sites/default/files/2017-03/Statuten%20-%20Schlussfassung%202013.pdf 4 terms 2013 Parteisekretär suggests in personal email communication that this rule has existed for at least 20 years.

  - VS http://www.pdcvr.ch/wp-content/uploads/2016/05/Statuts_du_PDC_VR_-_21.04.2008_-.pdf 3 terms, may be overriden by 2/3 majority in secret vote.
  - none: BE 2016, TG 2014, GR 2016, AR 2009, ZG 2014/2001, UR 2010, SH 1985/2014, SO 2006.
  - unclear: AI, TI

- SVP
  - AG https://www.bluewin.ch/de/news/regional/region-east/2017/5/15/svp-aargau-baut-huerde-gegen-sesselkleber-im-bundes.html max.16 years, introduced in 2017.
  - BE http://svp-bern.ch/wp-content/uploads/sites/9/866e4ab44c8db54f1af7199db15543fb.pdf 2013 art.. 39 maximal dreimal wiedergewählt (max 16 years). Adrian Amstutz term-limited in 2019 https://www.nzz.ch/schweiz/svp-kanton-bern-statuten-verhindern-weitere-amtszeit-von-amstutz-ld.133018.
  - none: GR 2016, TG 2010, LU 2013, ZH 2012, VD 2016, SG 2016, SZ 2008.
  - unclear: VS

- GPS
  - GE https://www.verts-ge.ch/les-verts/les-statuts.html Art. 33 - 3 mandats probablement depuis 1998.
  - none: AG 2017,VD 2013
  - unclear: ZH

- FDP
  - TI http://www.plrt.ch/documents/view/536cd69b-eea0-4587-bdc6-6b090a320dd1 4 terms art 64, according to party introduced in 2011.
  - LU http://www.fdp-lu.ch/imagesimages/stories/Mandanten/LU/FDPLuzern/Statuten/Statuten_FDP_Kt_LU_DV_04.2016.pdf 2016: art 19: usually restricted to 4 leg. periods.
  - none: BE 2012, BL 2013, NW 2013, OW 2008 SG 2010, SH 2014: Art.12: max. 3 terms but ONLY for party organs, SO 2013, UR 2017 VD 2012, ZH 2010, ZG 2012.
  - unclear: TG

- BDP
  - none: FR 2010 SO 2009.
  - unclear: GR

A.2 Measuring MPs' "Partyness" with Machine Learning[36]

A.2.1 Key Assumptions

The machine learning approach of measuring the position of MPs relies on a simple assumption of how language is generated. When parties use distinct terms to discuss a particular political issue, that use of language reveals partisanship. Such dynamics are perhaps most evident in the US Congress, where Republicans will refer to "death taxes" and "illegal aliens", while Democrats will speak of the same issues using phrases such as "estate taxes" and "undocumented workers" (cf. Gentzkow et al. 2016).

When using machine learning, we introduce information on the party label of legislators, and train a model to "recognise" the features associated with different labels. The trained model "knows" how members of party A typically speak—it has "learned" the features of that party's language—and estimates the probability of an individual belonging to that party A for each speech that we "ask" it to predict. As a basic intuition, a polarised parliament consists of groups that choose to use very distinct language, and an unpolarised legislature includes MPs who are linguistically proximate to members of their own party. Style, sub-topic, and other semantic differences are used strategically by legislators to make a point. The level to which these differences in language use accord with a particular "party label" as predicted by a trained model reveals the degree of partisanship of the member.

The machine learning approach is particularly well-suited to high-dimensional data because we avoid the problem of issue space altogether. Disagreement is instead reduced to one dimension: language use. Admittedly, this broadens the concept of "ideology" as it is usually defined in the literature (see also Peterson and Spirling 2018; Gentzkow et al. 2016). But, it can be seen as an efficient and appropriate approach if we accept the assumption that all—or at least a majority—of an MP's linguistic choices are informed by political considerations.

[36]The information contained in this part of the appendix is an abridged version of Goet (2017).

A.2.2 Implementation

To measure legislator preferences and parliament-level polarisation, we apply the stochastic gradient descent machine learning algorithm with a log loss function and l2 regularisation (Bottou 2004). SGD has a cost function is defined as follows over m training samples:

$$J_{train}(\theta) = \frac{1}{m}\sum_{i=1}^{m} \text{cost}(\theta, (x^{(i)}, y^{(i)})) \tag{1}$$

The algorithm operates by randomly shuffling over the dataset (i.e. reordering the training samples randomly), and subsequently updating the cost function for each training sample m until convergence:

$$\text{Repeat}\{ \tag{2}$$
$$for\ i = 1, \cdots, m\{ \tag{3}$$
$$\theta_j = \theta_j - \alpha(h_\theta(x^{(i)} - y^{(i)}) * x_k^{(i)} \tag{4}$$
$$for\ j = 0, \cdots, n \tag{5}$$
$$\} \tag{6}$$
$$\} \tag{7}$$

For every training sample $x^{(i)}, y^{(i)}$, the parameters are modified to improve the fit for the next training sample, and so on, until it has looped through the entire training set and reached convergence.[37]

By cross-validating ten-fold, we obtain individual level partisan scores for each legislator using probability estimates for each label. In other words: for each speech, the probability that it belongs to a "class" represents a legislator's "partyness" for that speech. The mean probability of belonging to their party across all the individual's speeches for a time period t represents that legislator's partyness for that period t.

To account for differences in the length of speeches, important and common words, we apply the TF-IDF transformation to the WFMs. This transformation

[37]Note that for SGD, as opposed to *Batch* Gradient Descent, we do not actually reach the global minimum; rather, the algorithm "wanders" continuously around a region close to the global minimum.

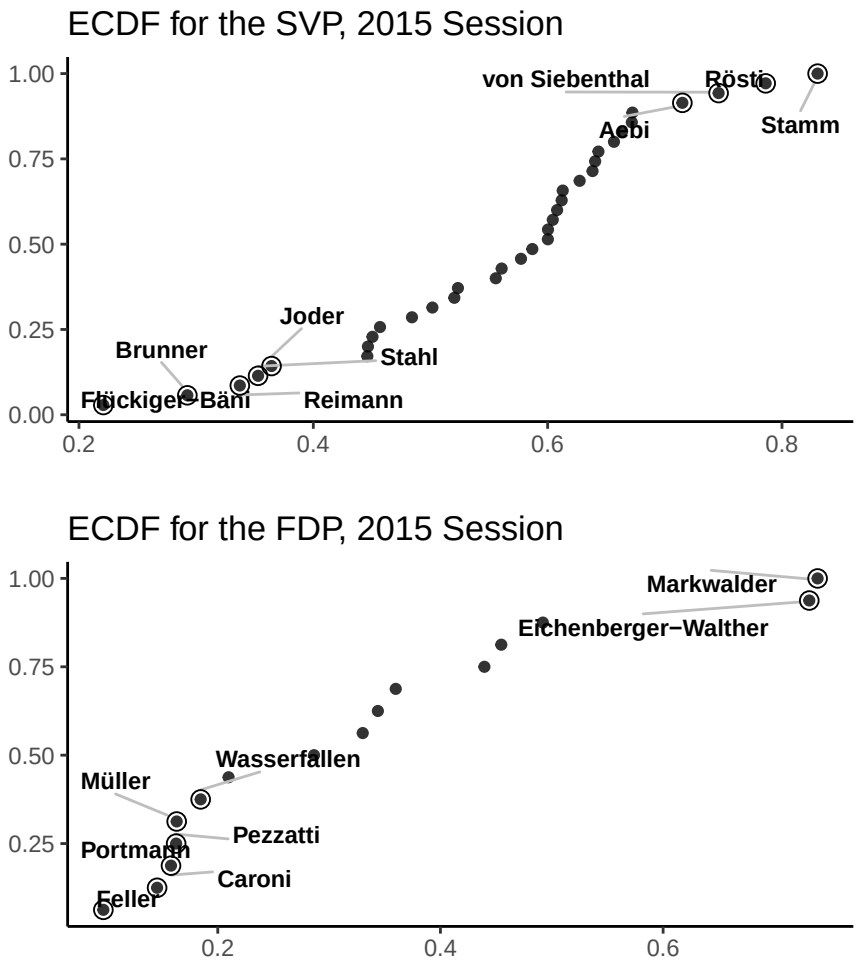
up-weights words proportional to the number of times they appear in the document, and is offset by the frequency of the term across the corpus (Manning et al. 2008). We conduct a "rough" grid search to tune the α hyper-parameter, varying the α between 1e-4 and 1e-24, and selecting different levels for this parameter based on model performance evaluated by the classifier's accuracy.

A.2.3 Example: "Partyness of SVP and FDP Legislators in the 2015 Session"

By means of this implementation, we obtain sessional scores of "partyness" for each MP (i.e. their mean score across the classification score for each speech they made in that session). We can subsequently consider the distribution of these accuracy measures within parties. Specifically, the empirical cumulative distribution function (ECDF) shows how MPs are located within the parties to which they belong. Below, we consider the ECDFs of the SVP and FDP-Liberale in the session of 2015 in the lower house. Individuals at either extremes of the distribution (i.e. low partyness or high partyness) are labeled).

To verify our partyness scores we compare the positions of the (labelled) individuals at the extremes of the distribution (see figure 6) with their position on a left-right scale, calculated based on roll-call votes (see e.g. Hermann and Nowak 2016). Our partyness scores, it seems, are more accurate for the FDP than for the more extreme SVP. Christa Markwalder is known to be relatively moderate/left within the FDP, and so is Corina Eichenberger-Walther. Hence, it is very likely that both use a very similar language. Similarly, Bruno Pezatti, Walter Müller, Hans-Peter Protmann and Christian Wasserfallen are all located relatively right on a left-right scale. Our results are more mixed for the members of the conservative SVP: while our score indicates that Andreas Aebi, Erich von Siebenthal, Albert Rösti and Luzi Stamm all have a similar position within the party, this is not the case on a left-right scale. While the former two are at the moderate side of the party distribution, Luzi Stamm is at the extreme right and Albert Rösti in the centre of the party. Also Toni Brunner and Lukas Reimann have relatively right positions in voting but use a similar language as Rudolf Joder and Jürg Stahl, who are at the moderate/left side of the SVP.

Figure 6: ECDFs of Classifier Accuracies of MPs in the SVP and the FDP, 2015 session



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