

The Effect of Election Rules on Legislative Debate Participation in the Russian Duma

This article examines the impact of electoral rule changes on floor participation in the Russian Duma during the Fourth and Fifth, and Sixth and Seventh convocations. Specifically, it analyses how the transition from mixed-member majoritarianism (MMM) to proportional representation (PR) affect floor participation and whether the subsequent reversal of the electoral system tempered oppositional activity. The analysis builds on the results presented in *The Dynamics of Debate Participation in the Russian Duma* (working paper, 2023), which investigated legislator-level covariates on floor participation across convocations in the Duma. Notably, similar baseline differences were observed between the Fourth and Sixth convocations, while the Seventh convocation displayed marked differences from all others. The former divergence coincided with United Russia's emergence as the dominant party and a significant electoral reform transitioning from MMM to PR systems, while the latter – more significant – deviation coincided with a reversal of electoral system.

The introduction of PR in the Fifth convocation was ostensibly aimed at consolidating the party system and removing sources of unpredictability left over from the Yeltsin era. During the earliest convocations, regional and industrial elites used single-member districts to insert their own members into pro-presidential parties thereby linking their interests to that of the executive (Reuter, 2017). In turn, the electoral reform raised concerns among deputies about the loss of their connections to specific localities and diminished relative independence from parties (White & Kryshantovskaya, 2011 558). However, by the end of the Fifth convocation – just one term into the new electoral policy – United Russia's standing had significantly diminished alongside widespread public discontent. The policy intervention's success in quieting regional elites created newfound unpredictability and a loss of status for United Russia in the party system (Hale et al. 2017).

As a result, for the 2016 elections to the Seventh convocation, the regime reintroduced the original MMM system for the 2016 elections and included additional innovations aimed at election engineering in SMD localities (Kynev 2017). The policy change was accompanied by the returned success of United Russia in SMD districts, indicating that the return to MMM was associated with a strategy of seat-maximization. Gandhi et al. find this to be a key trade off between MMM and PR, since proportionality reduces the potential seats a large party may hold (2022).

This article aims to investigate the impact of the electoral system changes on floor participation and assess whether this varies across rule changes. Specifically, it examines whether speechmaking behaviour among SMD deputies who move into PR from the Fourth to Fifth convocation, and PR deputies who move into SMD roles in the Seventh convocation is impacted by changes in the electoral systems. If there are no significant effects between the intervention periods, we cannot conclude that electoral systems have a direct effect on speechmaking. In other words, if we cannot reject the null hypothesis and find that the effect of electoral systems is otherwise unsubstantiated or negligible, it suggests that factors other than the electoral system drives legislative behaviour on the floor. However, if the effects are significant, we may make several inferences. If the effects are reciprocal, this suggests that the impact of the electoral system is constant across intervention periods, meaning that it is a robust factor that shapes legislative behaviour. Alternatively, if the effect coefficients are not reciprocal, it suggests that the impact of the electoral system varies depending on the intervention period. In this case, further analysis should untangle the cause of that variation.

Electoral Systems, Legislative Behaviour, and Speechmaking Incentives

The impact of electoral institutions on floor participation has been extensively studied in democratic contexts (see Bäck et al. 2021). Nevertheless, research into this subject within hybrid and authoritarian regimes remains limited – although a body of work discusses the purpose of

electoral systems in these regimes. Prevailing scholarship on parliamentary democracies posits that the incentives for speech differ across distinct electoral systems, stemming from the interplay between party leaders and backbenchers (Proksch & Slapin 2015). Notably, party leaders exert greater influence over floor time allocation in electoral systems that prioritise party reputation over individual vote-seeking and, conversely, wield diminished control in systems that preference personal votes. In MMM systems, the situation is more intricate, as deputies possess contrasting incentives on the floor, contingent upon their electoral tier.

MMM allocate a predetermined portion of parliamentary seats from SMDs, while the remaining seats are filled through party lists.¹ Deputies elected from SMD localities encounter fewer party-imposed restrictions and exhibit behavior akin to their counterparts in pure SMD systems (Proksch & Slapin 2015, Chapter 2). For example, they tend to align with local interests over party stances and are more inclined to deviate from the party line. Conversely, deputies elected via closed-lists experience less flexibility in their behaviour, as their presence on the ballot is contingent upon party leadership decisions.

Although research on parliamentary democracies offers valuable insights on the relationship between electoral systems and legislative floor conduct, it is crucial to acknowledge that these findings might not be fully generalizable to authoritarian contexts. In such environments, political competition is typically restricted, opposition influence curtailed, and election engineering techniques employed to manipulate electoral outcomes (Gandhi & Lust-Okar 2009). Furthermore, the recent research (Cite self-working paper 2023) established that electoral system, when held constant, does not influence behaviour. In essence, if an effect of electoral system exists, it must vary by convocation, which could be related to broader regime type.

¹ Note that the majority of MMM systems in authoritarian regimes use closed-lists (Gandhi et al., 2022).

Consequently, the applicability of these incentives within authoritarian settings remains an open question.

Slapin and Proksch (2015) content that deputies elected under PR experience reduced floor access and use less floor time relative to their SMD peers. This is attributed to party leaders exercising tighter control over PR members, prioritising the party's image over individual vote-seeking (2015). Democratic scholarship implies that incentives for floor participation stem from party leaders' control mechanisms such as list inclusion. This logic also applies in the Russian case, where the selection of incumbents and newcomers is constrained by considerations of loyalty (Reuter 2017, Chapter 5; Krol 2017). Therefore, PR deputies should be anticipated to safeguard the party brand. For example, Kunicova and Remington find that PR deputies are more inclined to uphold their faction position in budgetary votes (Kunicova & Remington 2008). Note that party leadership do not need to wait until the election cycle to discipline members – tools such as expulsion from the party are employed against deputies who break the party position or infringe too heavily on the government's interests (Wilson, 2009).

In democratic settings, PR systems enable party leaders to maintain tight control over the nomination process of deputies. As a result, loyalty is rewarded, while disloyalty is penalised through either the inclusion or exclusion of candidates on the party list (Cox et al. 2019). This dynamic incentivises deputies to endorse the party's agenda rather than obstruct it; hence, deputies under such systems possess limited latitude to obstruct the government's agenda in authoritarian contexts. In Russia's case, this dynamic was amplified by modifications during the Fifth convocation's election cycle. Namely, the state-based party registration process, restrictions on party movement after elections, and the move to a solely PR system (Smyth et al. 2007). These regulations furnish supplementary mechanisms for party leadership control and create incentives for incumbent deputies to conform their behaviour to party interests, thereby safeguarding their political future.

The link between deputies and the party under PR rules holds considerable significance for understanding the incentive structure in authoritarian conditions. In Russia, for the dominant party, deputies are not only connected to the party but also directly to the government due to the ‘centralised nature of United Russia’, which permits party leadership to manage deputies through placement on the party list, exclusion from the party list, and expulsion from the party (Wilson 2009). Disloyalty under such circumstances incurs severe penalties. Consistent with this dynamic, electoral autocracies employ PR (and transition electoral systems into PR) to guarantee compliance and establish disciplinary tools for use against potential defectors within pro-governmental parties (Gandhi et al. 2022).

Under electoral authoritarianism, opposition parties encounter analogous incentive structures due to the co-opted nature of their parliamentary inclusion (Schedler 2002). These parties must strike a delicate balance between critiquing or engaging with the government and evading retaliation or outright repression. If the government perceives that parties or their deputies risk overstepping their boundaries and jeopardising regime stability, they may increase participatory barriers within the parliament (e.g., through the Regulations) or introduce barriers to the parliament itself (e.g., by adjusting electoral thresholds). Therefore, parties have a vested interest in regulating their members’ behaviour on the floor and will resort to disciplinary measures – list exclusion being one of them – against members who transgress.

The balancing act is illustrated by instances from *A Just Russia*. Regarding deputies who exhibit excessive contestation against the regime, Dmitry Gudkov was expelled from *A Just Russia* following the 2011-2012 protest period. Concurrently, during this same period, other members were expelled, suspended, or left the party for their overly pro-government stance (e.g., Igor Zotov) (RIA Novosti 2012). Deputies also have a disciplinary connection to the executive through the prospect of censure and expulsion from the Duma, which the government has used as part of its repertoire against oppositional activity that cross the line. For example, Gennady Gudkov was made an example of and completely divested of his mandate due to such

conducted. Consequently, the party possess additional incentives to restrict floor access among deputies who deviate from the official party line and may do so using mechanisms inherent to PR. It is important to note that while expulsion is not necessarily tied to the electoral system, it axiomatically precludes deputies from future party lists. This implies that deputies like Dmitry Gudkov must change parties in subsequent elections if they wish to run, or, as in Igor Zotov's case, they may exit the parliament all together.

Moraski asserts that the initial alteration in Russia's electoral system resulted from the regime's need to rein in their SMD deputies (Moraski 2007). Similarly, Gandhi et al. present evidence that transitioning to PR enhanced party discipline over deputies who held personal votes in the preceding convocation (2022). The underlying intuition is that deputies who cultivate personal votes with their 'charisma, name-recognition, skills or efforts at campaigns' are challenging to control, and PR affords more robust incentives to adhere to the party line (2022). In accordance with this rationale, it can be inferred that the local nature of SMD representation generates a tension between allegiance to the constituency (understood as industrial and regional ties) and the party. Consequently, SMD localities foster incentives to cultivate personal votes, which can subsequently be wielded against the regime (Gandhi et al. 2022; André et al., 2016).

Furthermore, the mechanisms employed against PR deputies do not always pertain to SMD deputies to the same extent. For example, expulsion from the party should not affect a strong local elite's prospects in the next election and there is no party-list consideration unless they dual register on the federal list. However, federal election law does restrict independent deputies from registering in elections via its signature threshold stipulation to favour party membership. For example, the Seventh convocation featured only two successful independent deputies. Therefore, there are at least some party considerations for SMD deputies. It is worth noting that the rules are applied ad hoc against non-systemic politicians and systemic opposition deemed excessively extreme by the regime (for a recent example see The Moscow Times 2021). This suggests that there is also a direct connection between the government and deputies. As a result, the findings

from Slapin and Proksch concerning the relative autonomy of SMD deputies are somewhat upheld, albeit with the caveat that while deputies have fewer partisan constraints compared to their PR counterparts, they remain tied to the government.

Therefore, a discernible distinction exists between the generation of incentive structures in electoral authoritarianism and electoral democracy regarding legislative representation, as an additional layer of consideration constrains deputy and party behaviour on the floor. While in democracies, deputies are constrained by their party due to the incentives intrinsic to electoral systems, authoritarian systems introduce a layer of constraint from the government, independent of the electoral system. Consequently, this dynamic should attenuate the effect magnitude of the electoral system on floor behaviour during the authoritarian period, but not during democratic periods.

Empirical Strategy

To measure the causal impact of electoral rules on floor participation, this article employs a quasi-experimental approach using the Difference-in-Difference (DiD) estimator on panel datasets consisting of the Fourth and Fifth convocations (*Panel A*), and the Sixth and Seventh convocations (*Panel B*). The analysis is restricted to deputies who appear in both convocations within each panel and considers deputies who switch electoral rules designated as the treatment group, while those who remain under the same rules constitute the control group. While the electoral rule changes are exogenous to deputies, non-random selection into the treatment and control groups may arise from the interaction between deputies and their parties, since parties determine the ballot lists. Moreover, deputies switching into SMD during the Seventh convocation are more prevalently from United Russia. Therefore, the results require some caution in interpretation. However, the treatment and control groups are relatively balanced in terms of observable characteristics.

The decision to separate the convocations into two panels rests on several key factors. First, unobserved time-variant effects on word count are likely to differ between time periods, such as during economic crises and war. Second, legislative attrition leads to a small sample size for deputies present in all convocations. Third, qualitative differences between legislators who remain in parliament for longer periods and those who attrit may confound the causal effects of electoral rules. Fourth, the effect of switching from mixed-member to proportional representation may differ from the reverse formulation, further complicating an appropriate modelling approach that covers all convocations. To address these challenges, the DiD estimator compares the change in yearly normalised floor time (i.e., time spent per speech, $DV1$) and the change in yearly number of speeches (i.e., floor access, $DV2$) for deputies who experienced an electoral system change (treatment group) with those who did not experience the change (control group) before and after the policy interventions. Normalised floor time is calculated by dividing the length of each speech by the total number of speeches given during a year.

To estimate the causal effect of electoral rule changes on legislative floor participation I propose the following estimator:

$$Y_{it} = \beta_0 + g + p + \delta \text{Electoral Change} + K_p + X + t + \epsilon_i$$

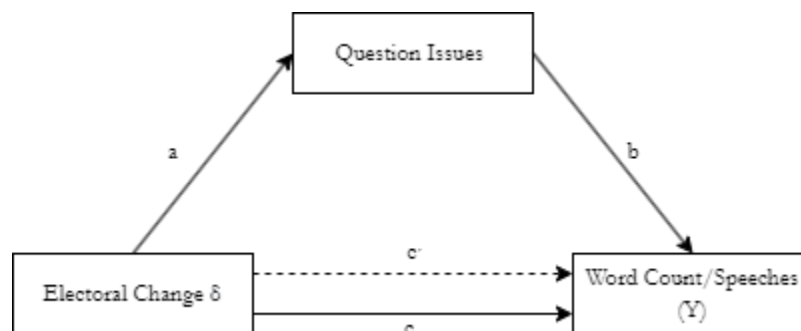
Where Y represents the word count divided by the speeches given by deputy i in year t for $DV1$. Treated deputies are indicated with g , and the intervention period is denoted by p . *Electoral Change* (treatment) is determined based on the interaction of $g * p$ (treated * intervention). Specifically, it takes a value of one for treated deputies after the treatment period and zero otherwise. The parameter of interest is this δ value, which measures the average effect of the treatment on the treated units (ATT). I control for time-varying cross-convocational effects with the intervention period variable, p . K is a vector of relevant covariates that may vary in effect between convocations. Therefore, I interact p onto these covariates. X is a vector of the covariates established as unrelated to convocation such as age, seniority, and gender. I control for year using the time covariate t , since the years are not balanced with convocations starting at different

times through the year. The error term ϵ contains the error, and the random effect for each deputy is modelled as $\epsilon_i = \epsilon + \beta_i$.

For *DV2*, measuring floor access, the modelling strategy simply removes the random effects component and models the number of speeches per year with negative binomial regressions containing the same covariate structure. To account for minor balance deviations, I include inverse probability weights in both model specifications.

The article then tests whether a specific causal mechanism affects floor time (*DV1*), as it is plausible that PR and SMD deputies have different incentives to address a broader or narrower range of topics, which in turn could affect word counts and the number of speeches. To test this hypothesis, I introduce a mediating variable that measures the number of speeches given for specific issues per year. This variable for *question issues* measures the number of specific issues a deputy addresses, as defined by the question type of a given speech, divided by the number of speeches per year. This provides a normalised amount of issues addressed per speech. The underlying idea is that if PR and SMD rules influence behaviour, they may do so via this mechanism, given that SMD and PR deputies may diverge in their incentives to address broader or narrower topics. The following figure illustrates this possible causal pathway.

Figure 1. Causal Pathways of Electoral System on Word Counts



Note that the dashed line c' indicates the indirect effect while the solid line c shows the direct effect. The indirect effect is specified as $c - c' = ab$, while the direct effect is specified as $c' = c - ab$. It is important to highlight that the independent variable remains delta (i.e., treatment).

Therefore, this mediation approach offers the advantage of indicating the robustness of the DiD design, as it measures the total and direct effects by treatment group and on average.

I employ this approach within a mediation context defined by the following equations:

$$Y_{it} = \beta_0 + g + p + \delta \text{Electoral Change} + K_p + M_p + X + t + \epsilon_i$$

$$M_{it} = \beta_0 + g + p + \delta \text{Electoral Change} + K_p + X + t + \epsilon_i$$

Here, the addition of M_i in the first equation indicates that the effect of the moderator is allowed to vary between convocations. Meanwhile, the second equation (M_{it}) shows that the measurement of the dependent variable is by deputy i in year t . These models are used to estimate the causal mediation effects, including the indirect and direct effects specified in *Figure 1*. To estimate these effects, I use the R package *mediation* which provides functionality for random effects models (Tingley et al., 2014).

The causal structure of the models satisfies a key assumption: sequential ignorability. This assumption relies on the condition that treatment assignment mechanism and mediator variable are conditionally independent given the observed covariates. This assumption is similar to the no omitted variable bias and conventional exogeneity assumptions. Specifically, the treatment must be independent of the mediator. In this analysis, there is no theoretical or empirical evidence that the mechanism behind the selection type of incumbent deputy is related to the mechanism that defines the number of questions a candidate addresses. The assignment of a deputy to a new electoral system should be based on broader factors such as regional and political considerations, and not on the frequency of different topics they bring up in speeches prior to their new system. Additionally, the models use weighting to account for potential biases that may remain after the addition of question issues. Moreover, I conducted additional matching and sensitivity analyses across different model specifications (i.e., linear and negative binomial models) to support the primary analysis.

Description of Variables

In this article, I examine the relationship between floor participation and electoral rules in the Duma. This section focuses on debate participation at the yearly level with dependent variables measuring this concept. *DV1* normalises the length of speeches by the number of speeches given per year, resulting in an average word count per speech, while *DV2* indicates the number of speeches given per year. I exclude all speeches which have less than 50 words but retain their data using a value of 0. This section tests the causal effect of two policy interventions on speech participation.

For this article, the data is divided into two panels for the model specifications. Specifically, the data is restricted to members who were present in either the Fourth and Fifth convocations (*Panel A*) or Sixth and Seventh convocations (*Panel B*). Consequently, *Panel A* considers the first policy intervention, while *Panel B* considers the second policy intervention. This created relatively balanced datasets regarding the covariates. However, to account for any minor balance issues, I assign inverse probability weights in the models. Detailed balance tables are provided in the appendix and show the adjustment. Deputies are considered treated if they are elected under a new electoral system (i.e., from SMD to PR, or from PR to SMD).

The table below presents summary statistics of the dependent variables and covariates for *Panel A*.

Table 1. Descriptive Statistics (*Panel A*, 4th and 5th Duma)

	mean	median	sd	min	max	<i>n</i>
<i>N</i> words	5945.68	2326	12,479.98	0	181,937	1199
<i>N</i> words/speeches (<i>DV1</i>)	118.557	98.066	103.1196	0	1252	1199
<i>N</i> speeches (<i>DV2</i>)	99.0092	20	255.2393	0	3041	1199
Party share	0.51584	0.6909	0.273519	0.0044	0.700	1199
Seats	229.1803	304	122.2241	2	315	1199
Committee share	0.05425	0.0403	0.038742	0.0022	0.1446	1199
Seniority	7.24018	6.9165	3.92084	0.0492	15.923	1199

Age	53.5813	55	9.2634	28	80	1199
	0	1	total	<i>n</i>		
Spoke	0.337	99.663	100	1199		
Ruling party	30.16	69.84	100	1199		
Party leader	97.05	2.95	100	1199		
Duma leadership	96.04	3.96	100	1199		
Committee chair	84.07	15.93	100	1199		
Committee deputy chair	57.45	42.55	100	1199		
Gender (female)	86.52	13.48	100	1199		
Treated (SMD to PR)	48.97	51.03	100	1199		
Policy intervention	50.63	49.37	100	1199		

In *Panel A*, the mean number of words spoken on the floor per year is 5,945.68, with a median of 2,326, a minimum of 0, and a maximum of 181,937. The number of speeches show a mean of 118.557, with a median of 98.066, a minimum of 0 and a maximum of 1252. The large outliers indicate a right skewed distribution. The mean number of words spoken per speech (*DVT*) is 118.557 with a median of 98.066, a minimum of 0, and a maximum of 1,252. Note that the treated and intervention variables compose roughly half of the dataset each as well.

The following table presents summary statistics for *Panel B*.

Table 2. Descriptive Statistics (*Panel B*, 6th and 7th Duma)

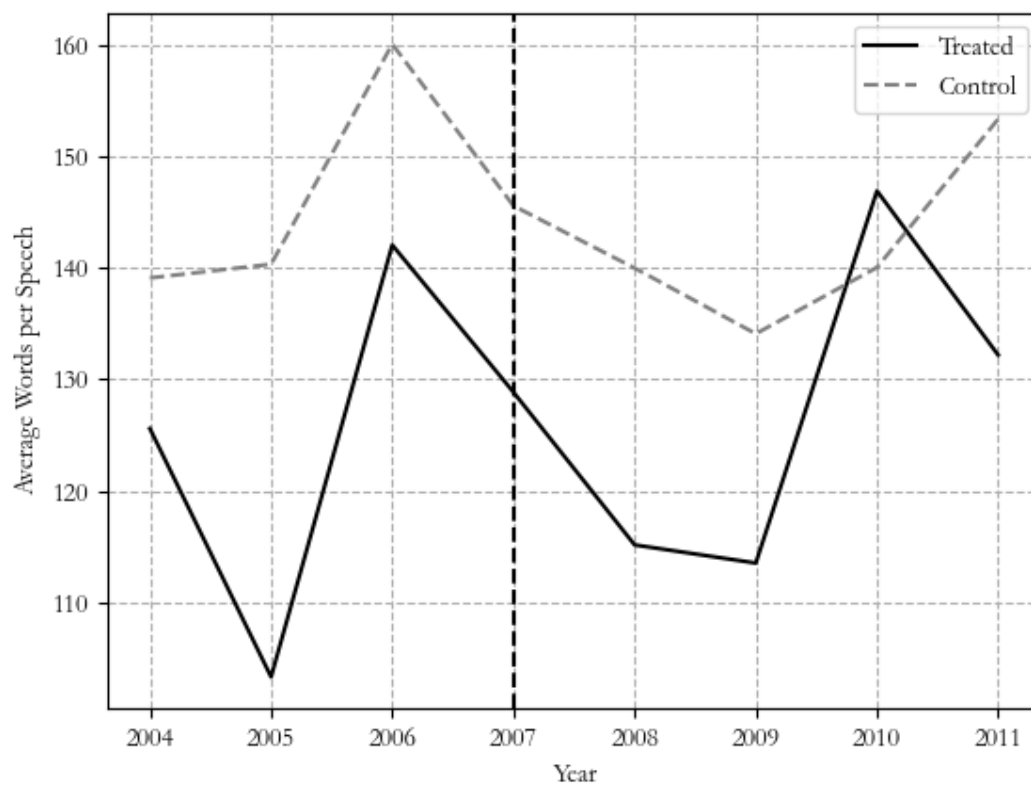
	mean	median	sd	min	max	<i>n</i>
<i>N</i> words	6066.291	2259	11371.31	0	110256	1585
<i>N</i> words/speeches (<i>DVT</i>)	117.3975	97.625	101.5021	0	1252	1585
<i>N</i> speeches (<i>DV2</i>)	73.34132	16	192.562	0	2458	1585
Party share	0.429231	0.5288	0.276616	0.00444	0.74666	1585
Seats	193.1539	238	124.4771	2	336	1585
Committee share	0.055089	0.030095	0.053067	0.00159	0.22527	1585
Seniority	9.57307	8.032831	6.161384	0.27633	25.4829	1585
Age	55.47334	55.00821	11.49214	26.7534	88.939	1585
	0	1	total			
Spoke	0.315	99.685	100			

Ruling party	41.262	58.738	100
Party leader	98.864	1.1356	100
Duma leadership	96.215	3.785	100
Committee chair	86.183	13.817	100
Committee deputy chair	50.095	49.905	100
Gender (female)	83.722	16.278	100
Treated (PR to SMD)	62.461	37.539	100
Policy intervention	44.164	55.836	100

Panel B is similar to *Panel A* except for a somewhat imbalanced treated group and intervention group due to attrition. In *Panel B*, the mean number of words spoken on the floor per year is 6,066.291, with a median of 2,259, a minimum of 0, and a maximum of 110,256. The number of speeches per year (*DV2*) have a mean of 73.341, a median of 16, a minimum of 0 and a maximum of 2458. The large outliers indicate a right skewed distribution as well. The mean number of words spoken per speech (*DV1*) is 117.3975 with a median of 97.625, a minimum of 0, and a maximum of 1,252. However, treated deputies are fewer than the control group indicating that only 37.5% of deputies changed electoral tier.

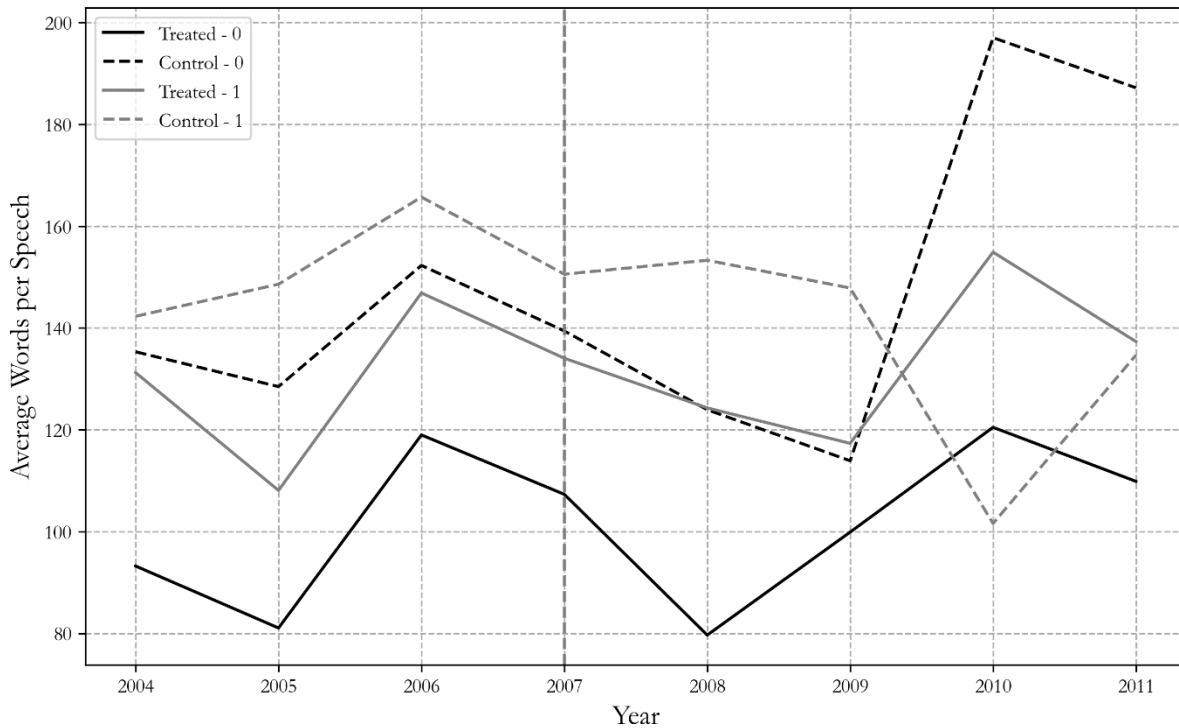
The following graph demonstrates the average word counts divided by speeches per year by treated and control groups for *Panel A*.

Figure 2. Average words/speeches per year by treatment status (*Panel A*)

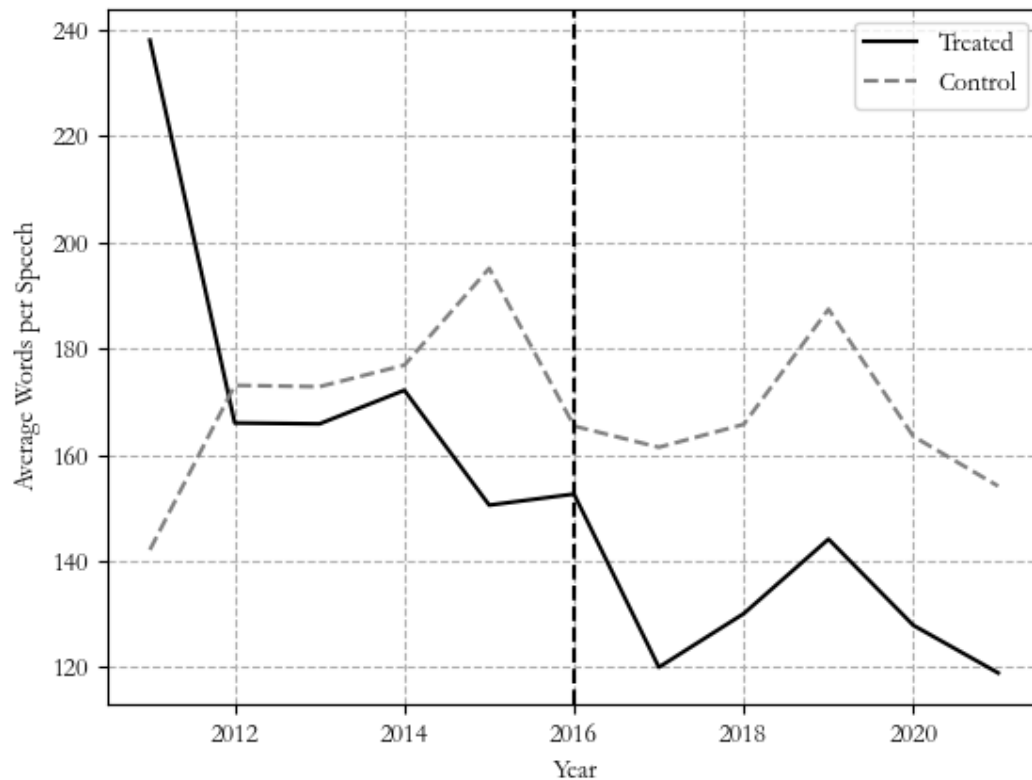


This presents the average words spoken by deputies who appear in both the Fourth and Fifth convocations and notes the change in electoral rules. The treated group consists of SMD members in the Fourth convocation who were subsequently re-elected under the new PR system, while the control group comprises deputies who were initially elected as PR in the fourth Convocation. The dashed line represents the change in electoral system. Notably, a relatively high degree of collinearity between the treatment and control groups is observed between all years except for 2010 and 2011, suggesting that the treatment did not have a strong causal effect on word count. As a result, the DiD estimator is unlikely to corroborate the hypothesis that electoral rules have a significant impact on floor participation during these convocations.

However, it is plausible that the treatment group differs by party status as well. The following figures shows the disaggregated trend lines by party. Notably, the trends are distinct for each party and treatment status. However, variation begins to emerge in 2009, where the control group deviates from the overall trend.

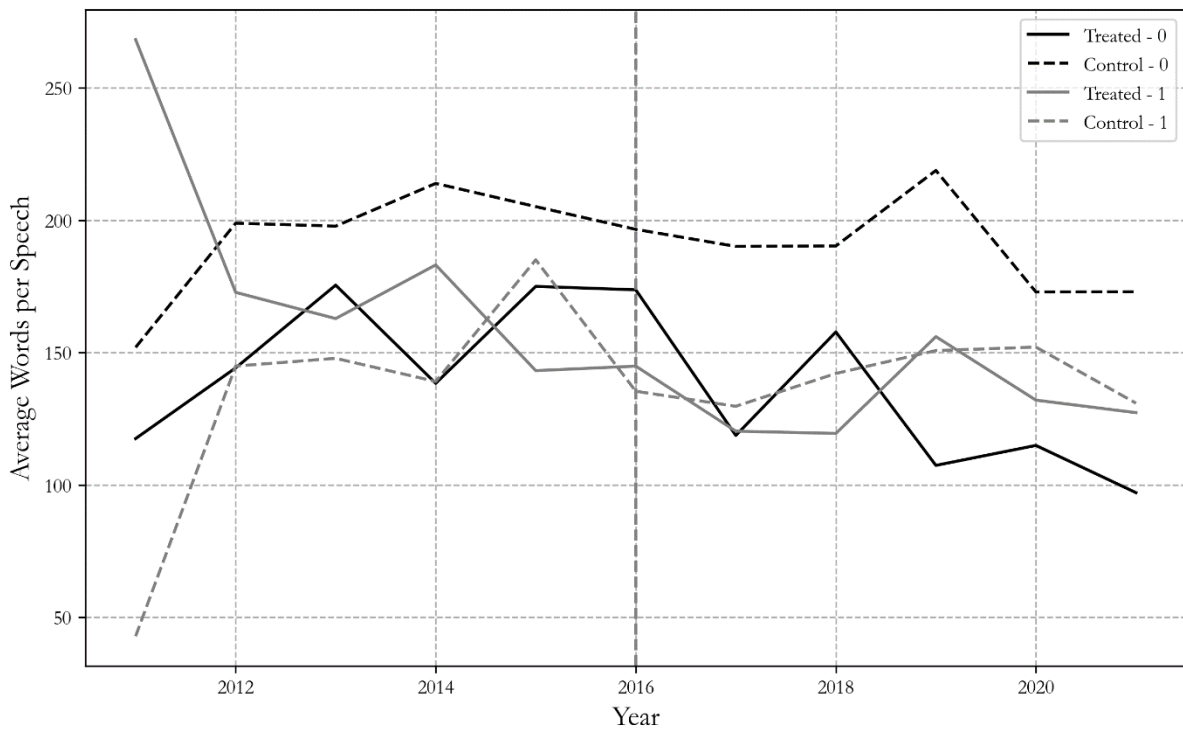
Figure 3. Average words/speeches per year by party and treatment status (*Panel A*)

The following graph depicts the data for *Panel B*, which shows the impact of the policy intervention on speech participation for the Sixth and Seventh convocations. In contrast to the earlier electoral system change, detecting visual collinearity is not as straight forward. The treated deputies in this case are PR members in the Sixth convocation who are re-elected under the new SMD districts, while untreated deputies are elected as PR in both convocations. The dashed line represents the change in electoral system. Since establishing collinearity is difficult for the Sixth convocation, it suggests that the change in electoral rules impacts the outcome of the treatment group in a manner that was not initially present, leading to the relative convergence in collinearity later on. Consequently, this convergence may indicate that the treatment was efficacious in regulating floor time.

Figure 4. Average words/speeches per year by treatment status (*Panel B*)

The increase in word count in 2011 is an interesting outlier. It is plausible that this increase in floor time was due to oppositional activity that began during the end of that year. However, upon disaggregating the trend by party, it becomes apparent that the governmental party is driving that data point. Furthermore, the beginning of the session is only a week-long for the year of 2011, which most likely contributes to the higher average word count. Therefore, the graphs demonstrate the importance of including proper controls for year in the modelling strategy to account for these potential confounders.

The following figure shows the trend between treated and control groups disaggregated by party status for *Panel B*. Here, the governmental deputies in the treated group demonstrate a larger number of words on the floor at the start of the Sixth convocation.

Figure 5. Average words/speeches per year by treatment status and party (*Panel B*)

In order to investigate the data with greater nuance, an additional model will be specified that includes a three-way interaction for intervention, treated group, and the ruling party. This is necessary due to the significant difference observed between control group deputies in United Russia and the opposition. The following statistical tests allow us to explore the data with more nuance.

Results

The first DiD estimator examines the effect of the electoral change parameter (δ) without considering its interaction with ruling party status. In other words, it controls for the ruling party but does not include it as a possible effect conditional on treatment. These mixed-effects models are presented in *Table 3* and provide a preliminary insight into whether the policy intervention has an effect on *DV1*. The ICC (Intraclass Correlation Coefficient) value reflects the proportion of total variability in the outcome variable that is due to differences between the individual groups (deputies) compared to residual variance. For both specifications, the value indicates that

there is more similarity between the members of each group compared to the residual variability. The conditional R^2 values indicate that the random effects components sufficiently explain variation in the response variable and improve upon a modelling strategy that excludes random effects conditioned on deputy. The fixed effects measuring deputy characteristics are also included in the models.

The treatment interactions in the models show the difference between convocations, comparing the Fifth to Fourth and the Seventh to Sixth convocations. The results indicate that the electoral system change in *Panel A* cannot reject the null hypothesis, as δ is not significant. In contrast, the results in *Panel B* reject the null hypothesis since δ is significant.

Table 3. Linear mixed-effects *DV1* (*Panel A* and *Panel B*)

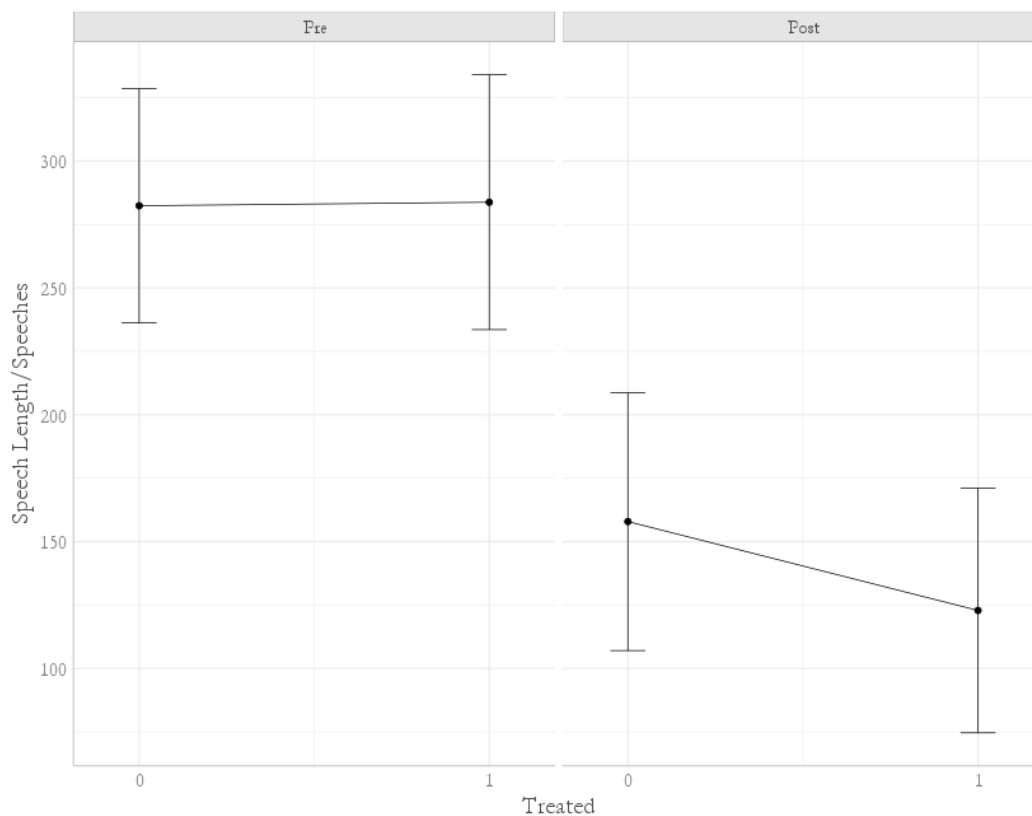
	Text Count/Speeches per Year (<i>DV1</i>)	
	<i>Panel A</i>	<i>Panel B</i>
	(1)	(2)
Treatment	59.92	200.45***
	(68.00)	(67.88)
Treated	-8.21	1.41
	(12.39)	(16.19)
Age ²	0.33	-0.20
	(0.68)	(0.66)
Seniority	-1.12	-0.47
	(2.02)	(1.45)
Faction Percent	52.94	1,425.74***
	(545.84)	(347.19)
Committee Percent	-490.02***	-229.32**
	(177.10)	(93.08)
Ruling Party	-5.63	-563.75***
	(331.29)	(129.58)
Duma Leadership	127.02***	75.07**
	(32.38)	(35.73)
Party leader	160.90***	-8.21
	(36.44)	(42.49)
Committee chair	-52.93***	-14.15

	(16.14)	(21.03)
Committee leadership	-9.56 (11.28)	10.88 (12.56)
Gender (Female)	0.91 (16.80)	18.97 (17.32)
Treatment*Treated	7.50 (10.71)	-36.46*** (12.56)
Treatment*Faction percent	-670.17 (624.88)	-1,810.33*** (520.53)
Treatment*Committee percent	245.52 (164.96)	-17.97 (146.11)
Treatment*Ruling party	355.52 (370.83)	791.31** (316.40)
Treatment*Duma leadership	-71.28 (44.63)	-122.46*** (40.88)
Treatment*Party leader	122.49* (72.65)	-30.98 (81.94)
Treatment*Committee chair	46.20** (17.95)	-38.32 (24.37)
Treatment*Committee leadership	4.66 (13.33)	-7.81 (15.73)
Constant	123.40** (54.60)	-61.97 (75.52)
Time FE:	Yes	Yes
Random Effects		
σ^2	7619.32	9631.36
τ_{00} Deputy ID	3654.95	7185.98
ICC	0.32	0.43
N Deputy ID	177	192
Observations	1,158	1,552
Log Likelihood	-6,898.19	-9,702.70
Akaike Inf. Crit.	13,856.38	19,471.39
Bayesian Inf. Crit.	14,008.01	19,647.85
Marginal/Conditional R ²	0.175/0.442	0.098/0.483
<i>Note:</i>	* p<0.1; ** p<0.05; *** p<0.01	

The DiD estimator indicates that only *Panel B* has a significant delta value ($\beta=-36.46$), which is below the $p<0.01$ threshold. This confirms the original speculation based on *Figure 2* that the

null hypothesis cannot be rejected for the first panel. The second panel indicates that electoral rule changes affect floor time participation as deputies move from proportional representation into SMD districts. The coefficient shows that deputies in this treatment group spoke 36.36 fewer words per speech than their PR colleagues in the control group, indicating that SMD deputies are speaking less when moving from the PR rules. The figure below illustrates the marginal effects of policy intervention by treatment status for *Panel B*.

Figure 6. Marginal effects of speech length/speeches in pre- and post-intervention by treated status with 95% confidence intervals, *Panel B*.



The pre-treatment period displays a higher degree of floor time overall, while the post-treatment period indicates a decline across all deputies. Nonetheless, deputies in the treated group experience a more pronounced decrease in their floor time. This implies that the Seventh convocation itself affects floor time in this subset of deputies, but the change in electoral systems affects the deputies differently depending on their treatment status. This is a notable finding

since the literature on democratic regimes expects that SMD deputies in mixed-member-majoritarian systems should use up more floor time (Proksch & Slapin, 2015, 51). However, the magnitude of effect is relatively small when compared to the model controls, suggesting that electoral system does not solely generate incentives for floor time.

The model for *DV2* did not show significant effects of electoral change on floor access. Therefore, this section moves on to account for the possible moderating effect of the ruling party. To do so, I use three-way interaction terms conditioned on ruling party, treatment, and treated status. These models did not provide significant improvement compared to the original DiD models as indicated by either their R^2 or AIC values for either *DV1* or *DV2*. For *DV1*, the coefficients for the three-way interaction were not significant, suggesting that the ruling party did not have a significant moderating effect on the relationship between the treatment and outcome variables. The treatment-treated interaction remains significant, although the effect magnitude increased slightly ($\beta = -68.78$). This partially confirms the original specification. Moreover, the relevant covariates for these models were similar to those of the original models, with only slight differences in effect magnitudes.

The negative binomial models for *DV2* find a significant interaction term at the $p < 0.05$ level, indicating that *floor access* is moderated by ruling party and electoral system. Moreover, the coefficients are nearly reciprocal which suggests that the effect of electoral system on floor access is somewhat consistent across changes when considering ruling party status. The results are presented in *Table 4*.

Table 4. Negative Binomial *DV2* (Panel A and Panel B)

	Speeches per Year (<i>DV2</i>)	
	Panel A (1)	Panel B (2)
Treatment	2.24** (0.97)	-0.59 (0.74)
Treated	0.41	-0.97***

	(0.26)	(0.24)
Ruling party	-12.06^{***}	-3.03^{**}
	(3.68)	(1.29)
Seniority	0.01	0.03^{***}
	(0.01)	(0.01)
Age²	0.01^{**}	-0.003
	(0.01)	(0.003)
Faction percent	18.76^{***}	3.64
	(6.13)	(3.54)
Committee percent	21.26^{***}	11.62^{***}
	(1.85)	(0.87)
Leadership	-0.77^{**}	0.54
	(0.36)	(0.33)
Party leader	0.83[*]	0.46
	(0.43)	(0.42)
Committee chair	1.27^{***}	1.24^{***}
	(0.18)	(0.19)
Committee leadership	0.01	0.50^{***}
	(0.12)	(0.12)
Gender (female)	-0.55^{***}	-0.58^{***}
	(0.12)	(0.09)
Treatment*Treated	-0.34	0.53[*]
	(0.36)	(0.32)
Treatment*Ruling party	9.70[*]	-0.57
	(5.37)	(3.10)
Treated*Ruling party	-0.95^{***}	1.31^{***}
	(0.29)	(0.28)
Treatment*Faction percent	-18.08^{**}	0.35
	(9.03)	(5.53)
Treatment*Committee percent	-4.00[*]	-0.57
	(2.18)	(1.45)
Treatment*Leadership	1.19[*]	0.25
	(0.63)	(0.45)
Treatment*Party leader	-1.07	1.24
	(1.02)	(0.83)
Treatment*Committee chair	0.36	0.59^{**}
	(0.25)	(0.26)
Treatment*Committee leadership	0.57^{***}	0.39^{**}

	(0.17)	(0.16)
Treatment*Treated*Ruling party	0.84**	-0.89**
	(0.40)	(0.37)
Constant	1.07*	3.22***
	(0.61)	(0.62)
Time FE:	Yes	Yes
Observations	1,199	1,585
Log Likelihood	-5,799.94	-5,295.52
theta	0.57*** (0.02)	0.67*** (0.03)
Akaike Inf. Crit.	11,645.88	10,637.05
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Having determined that the electoral system's impact on floor time is evident in the Seventh convocation and that the effects are present across panels for floor access, I move on to the mediation analysis to explore the potential causal pathway wherein the electoral system affects floor time through the mediator variable of *question issues*. Mixed effects models were run with the new mediation variable specified as a fixed effect and as a dependent variable.

As in the previous models, the results in *Table 5* showing the results for *DV1* indicate that *Panel A* shows no effects of electoral system on floor time, while *Panel B* shows significant direct and total effects. However, *Panel B* demonstrates that there is no indirect mediation effect. The results highlight the significant direct effect of electoral system change on floor time. These findings suggest that the change in electoral system explains floor participation while a plausible mediator cannot reject the null hypothesis.

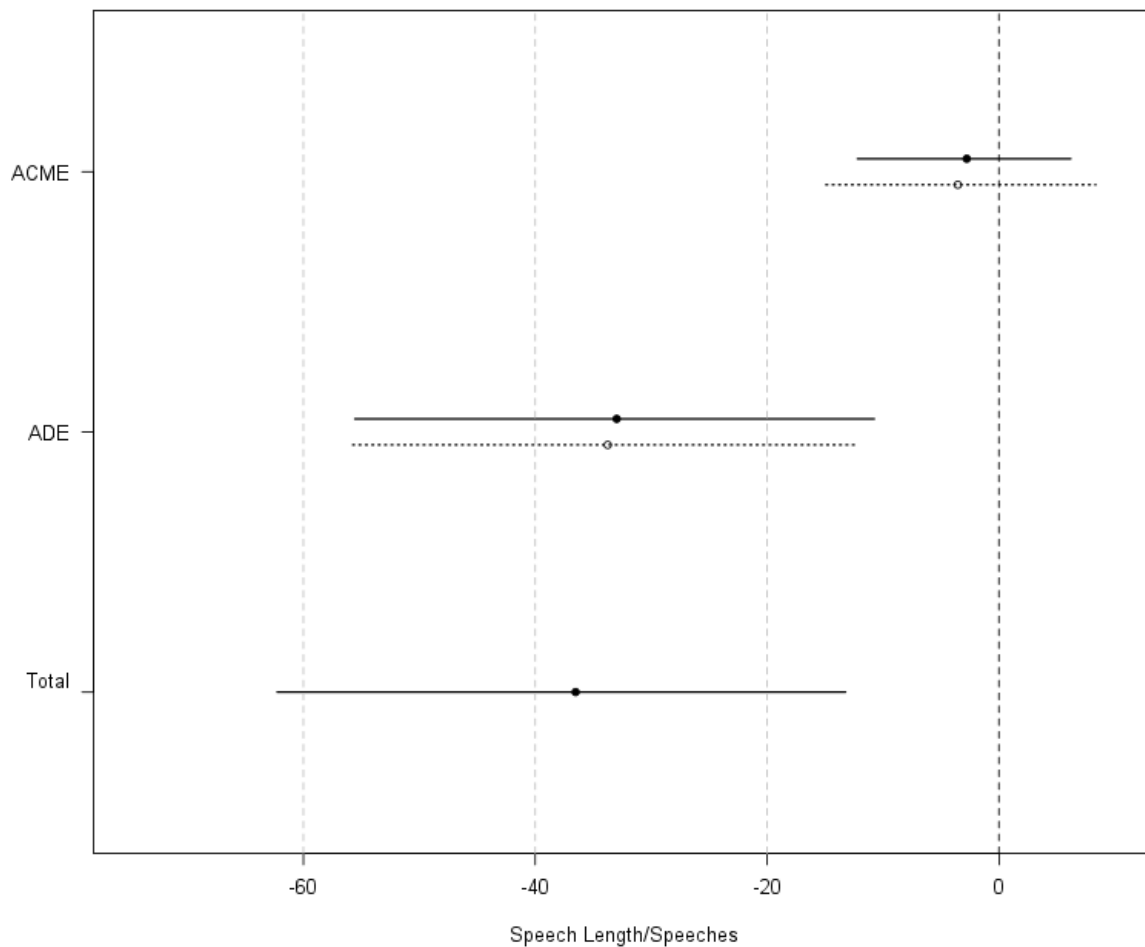
Table 5. Causal Mediation Analysis, *Panel B*

	Estimate	95% CI Lower	95% CI Upper	p-value
ACME (control)	-3.5400	-14.920	8.35	0.554
ACME (treated)	-2.7736	-12.197	6.20	0.554
ADE (control)	-33.740	-55.743	-12.23	0.002 **
ADE (treatment)	-32.974	-55.558	-10.75	0.004 **
Total Effect	-36.514	-62.270	-13.23	<2e-16 ***
Prop. Mediated (control)	0.0965	-0.3681	0.44	0.554
Prop. Mediated (treatment)	0.0731	-0.2963	0.35	0.554
ACME (average)	-3.1568	-13.5444	7.38	0.554
ADE (average)	-33.357	-55.8871	-11.76	0.002**
Prop. Mediated (average)	0.0848	-0.3439	0.41	0.554

Note:

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The following figure demonstrates the mediation effect (null), average direct effect, and total effect for *Panel B*. The ADE and total effect indicate that the mediating variable has little to no effect on the relationship between electoral system and floor participation. In other words, the direct effect is largely explained by the electoral system itself rather than the mediator.

Figure 7. Mediation Effects, Panel B

The results of the analysis demonstrate an unmediated causal impact of electoral system reform on floor time among treated deputies during the last rule change, and a moderated impact on floor access within the same set of deputies as defined by their government or opposition status. The next section will conclude with a discussion on the key takeaways from these results.

Conclusion

The findings reveal that SMD deputies (i.e., the treatment group) speak less than PR deputies during the Seventh convocation, while no significant effect on floor time is observed prior to this convocation. This reinforces the results from the prior publications in this research project (self-cite working paper 2023), which demonstrate that the Seventh convocation differs from all others in respect to its relationship with floor participation, and suggests that participation is

qualitatively distinct in the Seventh convocation. Since the results were not moderated by United Russia, they imply that deputies are treated the same regardless of their party. This suggests a tighter control over floor time in the Seventh convocation over SMD deputies, contrary to the expected floor time interests generated by electoral incentives. Note that the initial rationale for Russia's shift to a PR system was to curtail the influence of United Russia's SMD deputies (Moraski, 2007; Smyth et al., 2007). Consequently, the relative decline of SMD involvement when moving back to MMM is not surprising, given that the regime conditioned the set of treated deputies within PR under party controls and then used this set of deputies for a sizeable portion of its SMD elections.

The findings for floor access corroborate inferences made about the Seventh convocation's unique participatory structure. SMD deputies across all convocations experience restricted floor access, indicating that floor access is consistently controlled by parties according to a deputy's electoral tier regardless of the period. This result is unexpected as more stringent controls are typically associated with PR deputies (Proksch & Slapin, 2015). However, in the context of Russia, where SMD deputies have consistently posed challenges to the regime prior to 2007, deliberate moderation of their floor behaviour through either self-censorship or party-based censorship is a reasonable expectation. This may be particularly relevant if deputies choose to direct their efforts in more substantive ways (e.g., committee duties, bill voting, the amendment process, or in electoral campaigning). Other forms for parliamentary participation may prove more fruitful for these deputies, especially when their floor time is constrained from above.

Furthermore, the absence of significant effects on floor time in the earlier convocations implies that time and access are not directly related at all points in time. Consequently, the electoral system exhibits differential total effects depending on when changes were introduced and the context that they were introduced in. This lends additional support to the argument that the regime uses a range of tools to modify the participatory structure of the Duma in an ad hoc manner.

This article reveals notable differences between convocations concerning the impact of electoral rules on floor access and floor time. However, these effects are muted compared to some of the model controls, suggesting that the electoral system, while influential for generating the incentive structures for speaking and allocating floor access, is not the primary explanatory variable at play. Nevertheless, SMD deputies appear to be marginally more excluded from both floor access and floor time. The results from the floor access model are particularly insightful, as they are significant only when including the interaction continent upon ruling party membership. This indicates that United Russia's SMD deputies, who were selected from the PR system (and thus demonstrated some loyalty and deference to the government), participate less on the floor. This further implies that United Russia has addressed some of the uncertainty issues regarding SMD defiance that were present during the initial decision to transition the system into PR.

Subsequent research should delve into the relationship between deputy characteristics including electoral system on the question issues that deputies address. Although this article demonstrates that discussing a wider or narrower range of topics is unrelated to floor time and electoral type, it is conceivable that certain topics are addressed more frequently by these sets of deputies. For example, SMD deputies may speak more about local and regional issues compared to their PR colleagues.

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Appendix

Table 5. Balance Table Panel A

	Type	Diff.Adj
<i>Treatment</i>	Binary	-0.006504751
<i>Age</i>	Contin.	0.000604946
<i>Age</i> ²	Contin.	0.009284402
<i>Seniority</i>	Contin.	0.095800102
<i>Party share</i>	Contin.	0.028373477
<i>Committee share</i>	Contin.	-0.017817972
<i>Ruling party</i>	Binary	0.011350402
<i>Duma leadership</i>	Binary	0.006127154
<i>Year factor</i>	Binary	-0.021140022
<i>Treatment 0 * Party share</i>	Contin.	0.060802585
<i>Treatment 0 * Committee share</i>	Contin.	0.026786039
<i>Treatment 0 * Ruling party 0</i>	Binary	-0.027407817
<i>Treatment 0 * Ruling party 1</i>	Binary	0.033912568
<i>Treatment 0 * Duma leadership 0</i>	Binary	0.001649307
<i>Treatment 0 * Duma leadership 1</i>	Binary	0.004855444
<i>Treatment 0 * Party leader 0</i>	Binary	-0.001619336
<i>Treatment 0 * Party leader 1</i>	Binary	0.008124087
<i>Treatment 0 * Committee chair 0</i>	Binary	-0.014309729
<i>Treatment 0 * Committee chair 1</i>	Binary	0.020814479
<i>Treatment 0 * Committee leadership 0</i>	Binary	-0.024952056
<i>Treatment 0 * Committee leadership 1</i>	Binary	0.031456807
<i>Treatment 1 * Party share</i>	Contin.	-0.041673186
<i>Treatment 1 * Committee share</i>	Contin.	-0.038767141
<i>Treatment 1 * Ruling party 0</i>	Binary	0.016057415
<i>Treatment 1 * Ruling party 1</i>	Binary	-0.022562166
<i>Treatment 1 * Duma leadership 0</i>	Binary	-0.007776462
<i>Treatment 1 * Duma leadership 1</i>	Binary	0.001271711
<i>Treatment 1 * Party leader 0</i>	Binary	-0.002512649
<i>Treatment 1 * Party leader 1</i>	Binary	-0.003992102
<i>Treatment 1 * Committee chair 0</i>	Binary	0.02476614
<i>Treatment 1 * Committee chair 1</i>	Binary	-0.031270891
<i>Treatment 1 * Committee leadership 0</i>	Binary	-0.00998395
<i>Treatment 1 * Committee leadership 1</i>	Binary	0.003479199

Table 6. Balance Table Panel B

	Type	Diff.Adj
<i>Treatment</i>	Binary	0.007651
<i>Age</i>	Contin.	0.027991
<i>Age</i> ²	Contin.	0.016356

Seniority	Contin.	0.053698
Party share	Contin.	0.008559
Committee share	Contin.	-0.00193
Ruling party	Binary	0.001243
Year Factor	Binary	0.00047
Treatment 0 * Party share	Contin.	-0.04358
Treatment 0 * Committee share	Contin.	-0.15295
Treatment 0 * Ruling party 0	Binary	0.014024
Treatment 0 * Ruling party 1	Binary	-0.02167
Treatment 0 * Duma leadership 0	Binary	-0.01522
Treatment 0 * Duma leadership 1	Binary	0.007572
Treatment 0 * Party leader 0	Binary	-0.01599
Treatment 0 * Party leader 1	Binary	0.008343
Treatment 0 * Committee chair 0	Binary	0.01903
Treatment 0 * Committee chair 1	Binary	-0.02668
Treatment 0 * Committee leadership 0	Binary	-0.01528
Treatment 0 * Committee leadership 1	Binary	0.007626
Treatment 1 * Party share	Contin.	0.035535
Treatment 1 * Committee share	Contin.	0.145463
Treatment 1 * Ruling party 0	Binary	-0.01527
Treatment 1 * Ruling party 1	Binary	0.022918
Treatment 1 * Duma leadership 0	Binary	0.015231
Treatment 1 * Duma leadership 1	Binary	-0.00758
Treatment 1 * Party leader 0	Binary	0.012854
Treatment 1 * Party leader 1	Binary	-0.0052
Treatment 1 * Committee chair 0	Binary	0.005409
Treatment 1 * Committee chair 1	Binary	0.002241
Treatment 1 * Committee leadership 0	Binary	0.010878
Treatment 1 * Committee leadership 1	Binary	-0.00323