Supplementary Online Materials for Daniel and Metzger (2018) "Within or Between Jobs? Determinants of Membership Volatility in the European Parliament, 1979-2014."[1]

Appendix A:
Within-Wave Turnover, by Country

	EP Wave						
Country	1	2	3	4	5	6	7
Austria				0.00	0.00	16.67	10.53
Belgium	50.00	12.50	12.50	12.00	44.00	4.17	9.09
Bulgaria						55.56	16.67
Croatia							0.00
Cyprus						0.00	33.33
Czech Republic						0.00	9.09
Denmark	12.50	31.25	6.25	6.25	12.50	35.71	15.38
Estonia						16.67	16.67
Finland				18.75	6.25	21.43	30.77
France	51.85	35.80	34.57	21.84	17.24	15.38	18.92
Germany	9.88	9.88	12.35	3.03	3.03	7.07	5.05
Greece	33.33	33.33	16.67	8.00	20.00	29.17	22.73
Hungary						8.33	18.18
Ireland	46.67	13.33	13.33	0.00	6.67	7.69	25.00
Italy	12.35	19.75	13.58	8.05	12.64	46.15	10.96
Latvia						11.11	0.00
Lithuania						7.69	8.33
Luxembourg	50.00	33.33	50.00	16.67	33.33	0.00	0.00
Malta						20.00	50.00
Netherlands	12.00	4.00	12.00	9.68	12.90	18.52	15.38
Poland						12.96	5.88
Portugal		12.50	20.83	32.00	28.00	12.50	9.09
Romania						40.00	12.12
Slovakia						0.00	0.00
Slovenia						14.29	12.50
Spain		5.00	21.67	14.06	21.88	12.96	9.26
Sweden				0.00	18.18	15.79	10.00
UK	0.00	2.47	0.00	3.45	4.60	6.41	5.48

Notes: Within-wave turnover describes the percentage of MEPs from that column that exit the given wave early.

[1] Replication data and code is available at http://shawnakmetzger.com/wp/.

Appendix B:
Lijphart Results

We also include Lijphart's (1999) index of federalism in our model specification, as it offers a more nuanced coding of federalism and decentralization, although with fewer observations.

TABLE 1. Models with Lijphart Variable (Excludes CEE Members)

	Model 1	Model 2	Model 3
SITTING MEP → DROPOUT			
Subnational Elections	-0.678***	-0.562***	
	(0.123)	(0.116)	
De Jure Federalism	-1.156***	-0.902***	
	(0.161)	(0.133)	
Lijphart Federalism Index	0.143***		-0.215***
	(0.050)		(0.034)
Months Since Last Election	0.006	0.006*	0.002
	(0.004)	(0.004)	(0.004)
CPL @ Nat'l Level	1.155***	0.919***	0.161*
	(0.148)	(0.120)	(0.093)
CPL @ EP Level	-0.101	-0.024	0.360***
	(0.096)	(0.094)	(0.092)
Female	-0.284***	-0.259**	-0.177*
	(0.105)	(0.104)	(0.104)
Age	-0.009**	-0.010**	-0.007*
	(0.004)	(0.004)	(0.004)
Far Left Party Family	-0.422**	-0.441***	-0.297*
	(0.170)	(0.170)	(0.170)
DROPOUT → SITTING MEP			
Subnational Elections	-1.028	-0.822	
	(1.029)	(0.890)	
De Jure Federalism	-1.583	-1.065	
	(1.658)	(1.095)	
Lijphart Federalism Index	0.213		-0.322
	(0.543)		(0.297)
Months Since Last Election	-0.035	-0.036	-0.039
	(0.027)	(0.026)	(0.026)
CPL @ Nat'l Level	2.044	1.507	0.182
	(1.768)	(1.224)	(0.686)
CPL @ EP Level	-0.101	-0.024	0.360***
	(0.096)	(0.094)	(0.092)
Female	-0.284***	-0.259**	-0.177*
	(0.105)	(0.104)	(0.104)
Age	-0.064*	-0.064*	-0.065**
	(0.033)	(0.033)	(0.032)
Far Left Party Family	-0.422**	-0.441***	-0.297*
	(0.170)	(0.170)	(0.170)
Log-Likelihood (partial)	-4648.57	-4652.77	-4708.54
Number of countries	16	16	16

* = $p \leq 0.10$, ** = $p \leq 0.05$, *** = $p \leq 0.01$, two-tailed tests. Light-gray shading = covariates whose coefficients are constrained to be equal across both transitions in the model. Wave fixed effects included in all models, constrained to be equal across transitions, and not reported to save space.

Appendix C:
Time Since Last Election Interactions

Our main models assume the effect of time since last election (hereafter, TSLE) is unconditional. However, it is possible TSLE's effect is *conditional* on our other covariates of interest—perhaps TSLE only has an appreciable effect in federal countries and has no effect in non-federal countries, for instance. If true, our non-result Panel A could be due to TSLE's various conditional effects, cancelling each other out.

To investigate this possibility, we create three two-way interactions by interacting TSLE with federalism, subnational elections, and CPL @ national, respectively. We continue to include the interactions' constituent terms as covariates. We estimate this model, and generate transition probabilities from the model's estimates. We hold the values for federalism, subnational elections, and CPL @ national constant within a scenario. We then vary TSLE's value for our transition probability scenario, as we did for the main text's figures. There are eight possible scenarios to check, since the three non-TSLE variables constituting the interactions are all binary (= 2^3). Table 1 lists these scenarios for reference.

TABLE 2. Interaction Scenarios

Subnat'l?	*Federal?*	*CPL@nat?*	*Results?*
N	N	N	No
N	N	Y	Yes (Figure 2)
N	Y	N	12 + 36 only ($t \geq 32$)
N	Y	Y	No
Y	N	N	12 + 36 only ($t \geq 57$)
Y	N	Y	Yes (Figure 1)
Y	Y	N	No
Y	Y	Y	12 + 36 only ($t \geq 19$) 24 + 36 only ($56 \leq t \leq 57$)

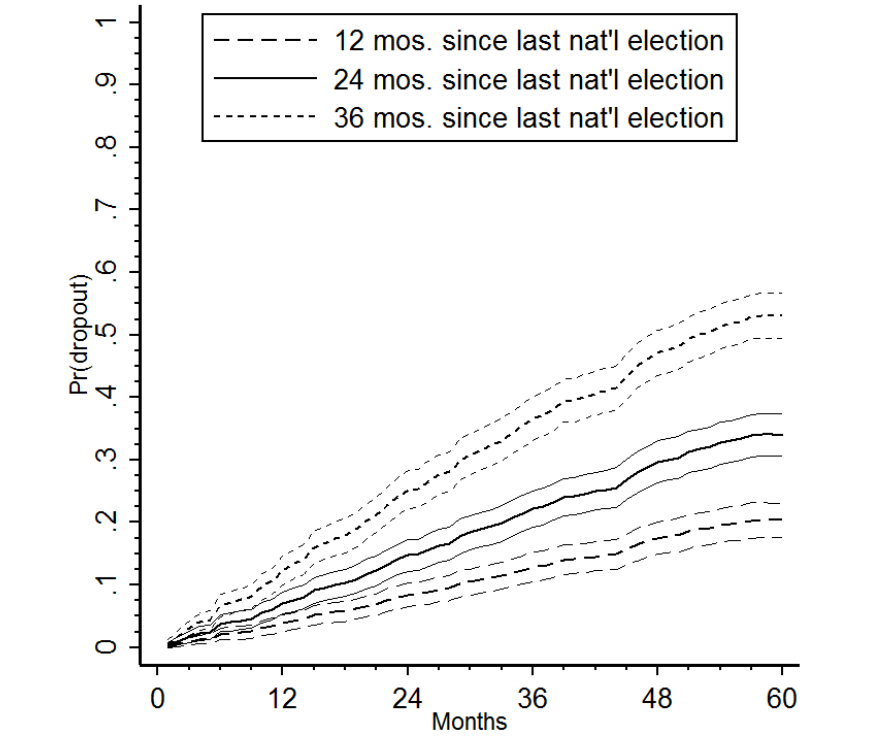
Shaded row: higher TSLE decreases Pr(dropout) {counter to H2}

We begin with the scenario whose covariate values are most generous to our H2, based on the Cox-with-two-way-interactions model estimates. We examine the effect of different TSLE values on MEP dropout for countries (a) without a de jure mention of federalism in their constitutions, (b) with

direct subnational exec + leg elections, and (c) with CPL national electoral rules. If we did not detect evidence of TSLE's effect here, it would suggest TSLE truly has no appreciable effect on MEPs' drop out probabilities.

Figure 1 displays this scenario's transition probabilities. We do see TSLE has a significant effect, evident in the way none of the lines' CIs overlap past the 12-month mark. Further, we see MEPs' dropout probability increases as more time passes since the last election. For example, at the wave's halfway point—30 months—MEPs from countries whose last national election was 12 months before the wave's start have a 10.5% probability of dropping out of the wave early (long-dashed line). By contrast, for national elections last held 24 months before the wave's start, the dropout probability is 18.4% (solid); for 36 months, 30.8% (short dash). Only two countries exhibit this scenario's covariate profile—Bulgaria and Croatia. Bulgaria is the sole country with this covariate profile in wave 6.

FIGURE 1. Probability of MEP Dropout, Most Generous Scenario

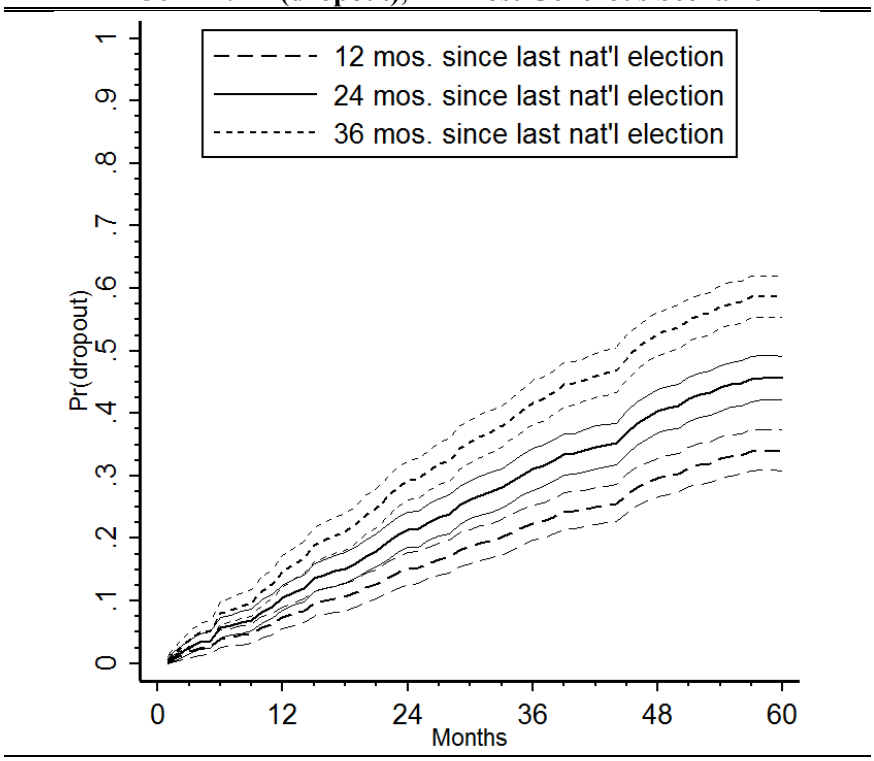


Quantities generated from appendix's Cox-with-interactions model. Scenario: non-federal country, both subnational exec and leg direct elections, and CPL @ national level. All other covariates held at median values. Wave FEs set to wave 6. 750 MEPs per simulation, 1000 simulations in total. Thin lines = 95% confidence intervals.

The next most-generous scenario for H2 is for countries (a) without a de jure mention of federalism in their constitutions (same as previous scenario), (b) with*out* direct subnational executive and

legislative elections (different), and (c) with CPL national electoral rules (same). Here, too, we find evidence that TSLE matters (Figure 2). Only Romania has this scenario's covariate profile in wave 6. It is also the only country to have this covariate profile in the entire dataset, across all waves. In short: election timing matters in newer EU countries who have direct subnational elections and CPL at the national level, regardless of whether the country's constitution mentions federalism or not. The pattern is consistent with Daniel's (2015) argument about some countries using the EP as a way for politicians to gain experience before returning to the national arena.

FIGURE 2. Pr(dropout), 2nd Most Generous Scenario



Quantities generated from appendix's Cox-with-interactions model. Scenario: non-federal country, ¬(both subnational exec and leg direct elections), and CPL @ national level. All other covariates held at median values. Wave FEs set to wave 6. 750 MEPs per simulation, 1000 simulations in total. Thin lines = 95% confidence intervals.

The six remaining scenarios produce transition probability figures similar to the main text's Panel A (see Table 1 for reference). For three of the six scenarios, all of the confidence intervals overlap for all three TSLE values; the dropout probabilities for different TSLE values are not statistically distinguishable from each other. For the other three scenarios, the dropout probability between 12 months since the last election and 36 months becomes statistically significant during the wave, but neither is statistically

different from 24 months.[2] Curiously, one of these scenario's results is opposite of what our H2 suggests. For countries with (a) a de jure mention of federalism, but do not have (b) direct elections for both the executive and legislature at the subnational level and (c) non-CPL national election rules: as more time passes since the country's last election, the country's MEPs are *less* likely to dropout of the wave early. The difference between 12 and 36 months becomes statistically significant at the 47-month mark. Hungary and the Netherlands have this covariate profile in wave 6.

Given that the number of possible combinations of our variables yield mostly country-specific results (or results that pertain substantively to only a small number of countries), we retain the general conclusion of the main text that electoral timing may well matter at the margins, but does not have substantive significance for our results to the same degree as H1 or H3.

[2] In one of the scenarios (all Y), the 24-month mark is statistically different from the 36-month mark, but only for two time points ($t = 56$, $t = 57$).

Appendix D:
Additional Control Variables Considered

In this paper, we deliberately employ a conservative estimation strategy that favors including only the most theoretically relevant and statistically significant control variables into our final models and simulations. As a consequence, the main paper models do not include a variety of independent variables that might logically predispose MEPs to early exit from or return to the EP. In this appendix, we detail the additional independent variables that were considered, but ultimately not included in these models. Unless otherwise mentioned, these variables were not statistically significant and were thus excluded for reasons of parsimony.

1. INDIVIDUAL-LEVEL VARIABLES:

All the following variables come from Daniel's (2015) book dataset.

EP leadership variable dichotomize MEPs holding positions of leadership at the committee (e.g., committee chair and vice-chairs) or parliamentary (e.g., president, vice president, party group leaders, quaestors, etc.) level.

Terms served variable is a count of the number of terms served by MEPs and is a proxy for MEP seniority.

Party group fixed effects for all party groups were included; however, only the far-left (currently GUE/NGL) group was statistically relevant and left in the paper models.

Rapporteurships counts the number of committee reports concluded by an MEP in a given term and is a proxy for the MEP's dedication to legislating in the EP. While this variable was correlated with the leadership variables above, it did not itself lead to a changed likelihood of early exit.

MEP Salary measures an MEP's monthly salary (scaled for PPP euros and then normalized via a natural logarithm) and is a proxy for uneven financial incentives for service to the EP (MEPs were paid in parity with national MPs until 2009).

2. COUNTRY- AND (NATIONAL) PARTY-LEVEL VARIABLES:

Normalized Election Clock is a ratio variable that offers an alternative coding for our election timing variable. In this, we examine the percentage of the normal, national legislative election 'clock' that has elapsed (most countries must hold these elections within a stated four- or five-year period), at a given point in the EP term. The constitutional maximum interelectoral period information comes from Seki and Williams' Government and Ministers dataset (2016), and time since last election we discuss in the main text. This offers a theoretically distinct possibility that MEPs might 'anticipate' a national election at a various point in the EP cycle, even if specific election dates are oftentimes not known very far in advance. The results here are virtually identical to our preferred variable, which we retain in the paper.

Personal Incentive is an index created by Jackson and Wallack (2006) capturing whether an MEP's national electoral system leads to a greater/lesser incentive to cultivate a personal 'brand' at election time. Similar to our closed-party list variable, this independent variable can be seen as a proxy for 'strong' and 'weak' party management of candidate selection and recruitment. The results here are also broadly similar to our preferred variable, which we choose to retain in the paper, as it is both more parsimonious and more current (the current dataset (Johnson & Wallack, 2012) covers up to 2005 only).

Lijphart federalism index is a finer-grained measure for the presence of functional federalism in select Western European countries. We take the variable from Daniel's (2015) book dataset. Please refer to Appendix B for additional information.

National Government is a dichotomous variable for MEPs hailing from a national party currently in government at the national level. We take the variable from Daniel's (2015) book dataset. We did find a slight effect for the presence of this condition leading to am MEP's increased likelihood of early exit from the EP, but it did not affect the main variables of interest and was thus excluded from the simulations for the sake of parsimony.

National Delegation is a ratio variable for the percentage of MEPs from a given country and proxies for the possibility that larger country delegations will experience more turnover. We compute this quantity from our own dataset, which itself is based on Daniel's (2015) book dataset. We do find that this

variable predicts early exit, but this result does not interfere with our other national-level variables of interest and is thus exclude for the sake of parsimony.

Distance from Brussels measures the distance between the MEP's national capital and Brussels and accounts for the possibility that the travel demands of the job may lead to early exit from farther flung MEPs.

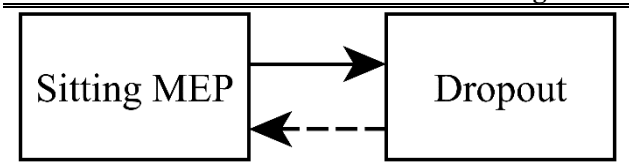
Proportional Elections is a dichotomous variable that proxies for MEPs coming from national election systems that use PR. This accounts for the possibility that MEPs might find it easier/harder to gain election to the EP (which must use PR), as compared with their national electoral system. These data come from the Database of Political Institutions.

Appendix E:
Methods Details

The Cox model is perhaps an unusual choice for assessing our hypotheses, but Metzger and Jones (2017b) argue that it can be a beneficial one for at least four reasons. First, the Cox setup allows us to easily acknowledge the effect of time's passage within an MEP-wave, as the probability of dropout may vary across time within the wave. Second, Cox models are semi-parametric, meaning that they do not specify *how* the baseline probability varies across time (i.e., the baseline probability's functional form), only that it *could* vary across time.[3] Incorrectly specifying the baseline probability's functional form can produce incorrect predicted quantities from the model (Box-Steffensmeier & Jones, 2004, pp. 21–22). Cox models' semi-parametric estimation allows them to sidestep this danger.

Third, Cox models allow us to analyze the substantive effect of our variables by generating transition probabilities (Metzger & Jones, 2016, 2017b). Transition probabilities are broadly similar in spirit to logit/probit predicted probabilities. In a duration model setting, we can cast any process of interest as being composed of a number of stages. Stages are defined based on the event(s) that subjects are at risk of experiencing. In our case (Figure 3), the initial stage in each wave is "Sitting MEP," where all of our MEPs begin. MEPs are at risk of experiencing one event in this stage—dropping out of Parliament before the wave ends. MEPs exiting early are then in the "Dropout" stage, where they are again at risk of a single event—a return to Parliament before the wave ends (as described above).

FIGURE 3. Within-Wave Transition Diagram



A transition probability speaks to the probability of transitioning between a process' stages. Formally, it denotes the probability of some subject *i*, characterized by a specified set of covariate values, being in stage *g* at time *t*, given that the subject started in stage *j* at time *s*. For us, we are interested in the

[3] "Baseline hazard" is the more common terminology from the duration literature. The baseline hazard represents the probability of observing our event of interest when all the included covariates are equal to zero.

probability of an MEP being in the Dropout stage at various points in time t, given that the MEP was seated at the start of the wave ($s = 0$). We use transition probabilities to interpret our results because we believe probabilities are more intuitive quantities to engage with than hazards, which are the usual means of interpreting Cox models (e.g., Box-Steffensmeier & Jones, 2004, pp. 59–63). Equally as important, however, is that our hypotheses are about the *probability* of an MEP dropping out of the EP early, making transition probabilities a natural choice for our substantive interpretations.

Fourth and finally, a Cox model also allows us to easily accommodate the dozen or so MEPs that drop out and then return in the same wave. Metzger and Jones (2016) show that assuming a stage has no exiting transitions—when exiting transitions do exist in the data—may result in biased estimates of the Cox model's predicted quantities. Our hypotheses pertain to the solid arrow in the diagram—the factors affecting MEPs' movement from being a seated to relinquishing that seat before the wave ends. Because of Metzger and Jones' findings, we err on the side of caution by also modeling the dashed arrow.[4] We permit a unique baseline hazard rate and unique covariate effects for each transition.

The biggest threat to the accuracy of our models' eventual estimates stems from the major assumption underlying Cox models: proportional hazards (PH). Cox models assume a variable's hazard ratio is constant across time (Box-Steffensmeier & Zorn, 2001, p. 975). Violating the assumption causes biased and inefficient estimates for the offending variable (Schemper, 1992). We check for PH violations in all of our models for each stratum separately (Metzger & Jones, 2017a). We check three different functions of time: $\ln(t)$, Kaplan-Meier, and survival time rank (Keele, 2010; Park & Hendry, 2015). Some of the wave fixed effects violate PH across all three transformations. Time since last election (TSLE) also violates PH. However, we cannot correct for any of the violations because the procedure we use to generate our transition probabilities in R cannot handle time interactions—our preferred correction technique. We find TSLE's violation concerning, since it is one of our main independent variables. In

[4] Modeling the dashed arrow involves further manipulating our dataset's structure, resulting in a true unit of analysis of MEP-wave-counter-transition. The rationale behind the manipulation is not necessary to understand the results we present. For the rationale, see Jones and Metzger (forthcoming, Supplemental Appendix A). The resultant model is technically a multistate survival model (Metzger & Jones, 2016).

our rough, unofficial corrections for TSLE's PH violation, the resultant transition probability graphs are effectively identical to the main text, meaning PH violations do not appear to be responsible for TSLE's non-result.

TABLE 3. Summary Statistics

Variable	*Mean*	*StDev*	*Min*	*Max*
Dropout	0.131	0.337	0	1
Duration (mos.)	50.060	16.091	0.167	58.867
Subnational Elections	0.593	0.491	0	1
De Jure Federalism	0.628	0.483	0	1
Election Time Elapsed	24.437	13.245	0.9	54.1
CPL @ Nat'l Level	0.299	0.458	0	1
CPL @ EP Level	0.553	0.497	0	1
Female	50.326	10.074	21	88
Age	0.260	0.439	0	1
Far Left Party Family	0.068	0.251	0	1