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The Electoral Business Cycle of Wikipedia: What Elections Reveal About Partisanship, the Public's Attention, and the Production of Political Knowledge

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Abstract

We trace the divergence between editor activity and reader interest to show how the production of online information depends on the interplay between public attention and the availability of novel content. The shadow of public attention lingers long after the events that made a politician worth documenting have ended. Analyzing 1.8 million edits to the Wikipedia pages of every U.S. member of Congress (2003–2022), we find that readers visit the pages of sitting and recently retired politicians at nearly identical rates, yet elections accelerate editing far more for those still in office (a 39% gap). When attention is held fixed by the data, we measure editing rates that diverge. A within-politician event study confirms the dissociation: after departure, editing declines faster than readership. While much research focuses on how demand affects editing, we show a divergence in edits that depends on the production function of information. Decentralized knowledge platforms underproduce current information about actors who have lost institutional power, a structural bias in any event-fed knowledge system.

Keywords: RDD, Elections, Wikipedia, Knowledge Infrastructure

1 Introduction: When the Information Pipeline Shuts Off

When a member of Congress leaves office, edits to their page stall, but readers keep coming. Readers look up recently retired officeholders at rates comparable to those of sitting members. But editing rates slow down, the intervals between edits lengthen, and the number of active editors declines. Even if the public remains interested, the information pipeline shuts off.

Extensive work on Wikipedia editing shows that public attention is the prime driver of editorial activity. When traffic to a topic increases, editors create new pages and update the content of old pages, which in turn attracts more readers (Ciampaglia et al. 2015; Zhu et al. 2020). In this demand-driven account, attention and editing move in lockstep. In this paper we focus on the production function of information holding attention constant. We trace the divergence between editor activity and reader interest, using an exogenous shock to the availability of novel content. In the reported natural experiment, with elections deciding the politician's trajectories, we evaluate cases where the public's attention has modest or null effects on editorial activity.

Using 1.8 million edits to the Wikipedia pages of every U.S. member of Congress, we document the electoral business cycle of Wikipedia edits: the systematic changes in editing activity, editor composition, and information production that occur around U.S. elections (see Figure 1). We identify the effect of the election outcome on editing behavior using a robust regression discontinuity design (Calonico et al. 2014) around four Presidential Elections (2008–2020), trace the mechanisms with Cox Proportional Hazards survival models (Batista and Calvo 2024), and isolate the within-page effect of leaving Congress using a two-way fixed-effects event study that absorbs aggregate Wikipedia-wide attention shocks.

Our key empirical finding exploits a natural comparison between members of Congress who remain in office and those who just left it. Around elections, readers visit the pages of both groups at nearly identical rates: the RDD estimate for page views is 2.157 ($p < 0.01$) for sitting members and 2.152 ($p < 0.01$) for former members. Editing does not follow. For sitting members, the time-to-edit discontinuity is 1.205 ($p < 0.01$); for former members it is 39% smaller (0.738, $p < 0.01$). Because attention is held fixed by the data across the two groups, the gap in editing cannot be a demand-side effect. Readers treat sitting and former members alike; editors do not, because sitting members generate the documentable events that former members do not.

The event study confirms the dissociation. Within the same member's page, and after absorbing aggregate time trends with year-quarter fixed effects, both editing speed and page views decline after departure from Congress, with editing speed declining more steeply: by approximately 2.3 log units versus 1.9 for page views over four quarters. The steeper editing decline reflects the disappearance of event-driven content production, while the slower views decline reflects the gradual erosion of public interest in a politician who is no longer making news.

This finding motivates what we call the *supply-side asymmetry*: the post-election editing surge depends not only on attention but on the availability of new facts to

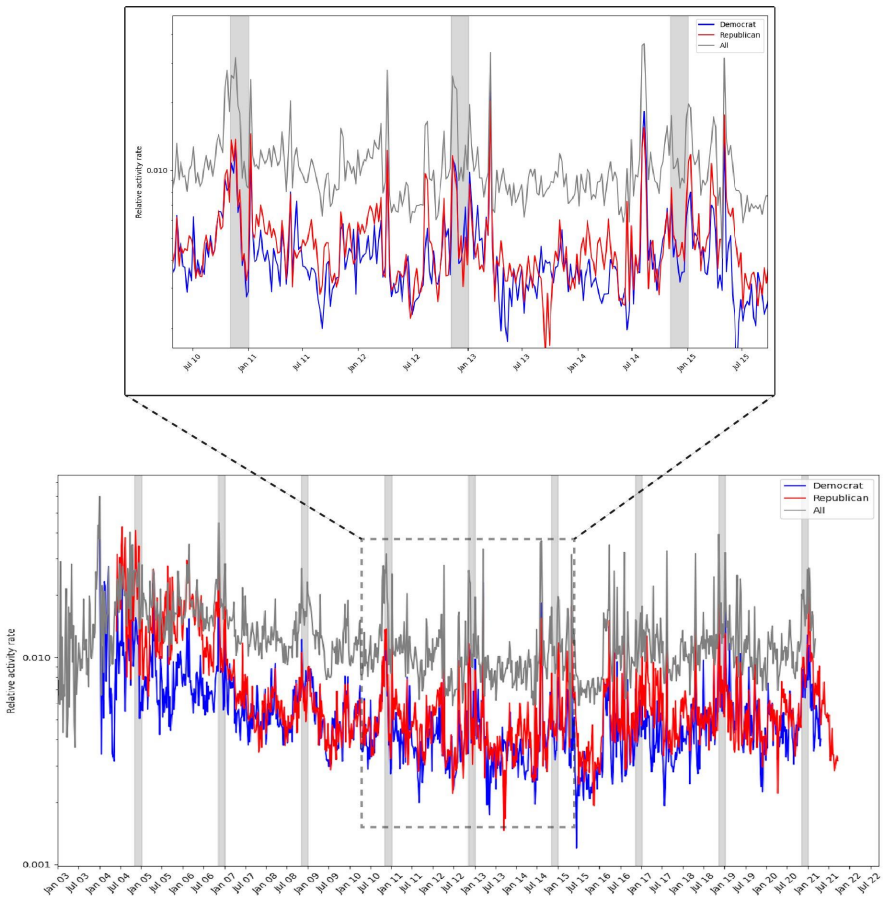


Fig. 1 The electoral business cycle of Wikipedia editing, 2003–2022. Lower panel: daily relative activity rate (fraction of all edits occurring on a given day) for Democratic (blue), Republican (red), and all (grey) Member of Congress pages. Shaded regions mark the transition window from Election Day to the convening of the new Congress on January 3rd. Upper panel: a zoom into the 2010–2015 period, resolving the 2010 midterm, 2012 presidential, and 2014 midterm cycles. The y-axis is on a log scale.

document. Winners produce committee assignments, caucus memberships, and roll-call votes; losers and former members produce silence. The attention-driven account (Ciampaglia et al. 2015; Zhu et al. 2020) correctly identifies the demand-side feedback loop, but our results show that it is incomplete. The knowledge infrastructure does not simply respond to what readers want to know. It responds to what officeholders *do*.

Three additional findings support this argument. First, elections recruit less experienced and more ideologically specialized editors (H_3), consistent with motivated partisan entry into Wikipedia editing. Second, the editing surge is concentrated among

more moderate members of Congress (H_4), whose institutional activities generate a steady stream of new facts. Third, leaving Congress slows editing by 22% even after controlling for page views, demographics, and article quality, confirming that the availability of novel content, not just the demand for information, drives editorial activity. Decentralized knowledge platforms underproduce current information about actors who have lost institutional power—a structural bias in any event-fed knowledge system.

2 Hypotheses: The Supply of Political Knowledge

2.1 Attention and the Feedback Loop

A well-developed body of work documents the relationship between public attention and information production on Wikipedia. Ciampaglia et al. (2015) show that traffic spikes toward certain topics precede the creation of new entries in those knowledge areas, establishing a temporal ordering in which demand for information drives its supply. García-Gavilanes et al. (2017) find that exogenous shocks and collective memory jointly shape attention and content creation, suggesting that the feedback loop is amplified by events that activate shared cultural referents. Zhu et al. (2020) demonstrate that the introduction of new information generates additional attention, completing the cycle: demand creates supply, and supply creates demand.

These feedback loops are especially pronounced during breaking news events, when Wikipedia's collaborative editing model produces rapid documentation of unfolding events (Keegan et al. 2013). The speed and scale of the editorial response to breaking news illustrates the platform's capacity to mobilize volunteer labor in response to exogenous shocks, a capacity that, as we argue below, depends on the availability of documentable events rather than on the level of public interest alone.

Elections, we argue, function as a sustained version of this breaking news dynamic: an exogenous shock that unfolds not over hours but over weeks, as results are certified, committees are assigned, and a new Congress is organized. Unlike a single breaking event, an election generates a sequence of documentable facts over the transition period, creating a prolonged window of supply-side stimulus for editorial activity.

In the political domain, Wikipedia is one of the most actively edited topic areas (Shi et al. 2019). Prior work has examined political knowledge as a site of editorial disagreement (Agarwal et al. 2020), documented partisan asymmetries in Wikipedia coverage (Greenstein and Zhu 2012), and used Wikipedia traffic for election prediction (Kennedy et al. 2017; Yasseri and Bright 2016). These studies treat attention as the primary driver: when voters want information, editors supply it.

Yet the demand-side account leaves several questions unanswered. If attention alone drives editing, we would expect the post-election surge to be proportional to page traffic, symmetric across parties regardless of who wins, and equally strong for former Members of Congress as for sitting ones. As we show below, none of these predictions holds cleanly. The editing surge is moderated by ideology, asymmetric across demographic groups, and larger among moderate Members of Congress who generate institutional events but are not necessarily the most-covered figures in the news cycle.

2.2 The Supply Side: Winners Produce Events, Losers Do Not

We argue that the attention-driven account is incomplete for political knowledge, because the *events themselves* are endogenous to the electoral outcome. Consider what happens in the weeks after a presidential election. Winning candidates receive committee assignments from party leadership, join legislative caucuses, hire Washington staff, announce policy priorities, schedule constituent town halls, and begin casting roll-call votes. Each of these events creates a citable, documentable fact that an editor can add to a Wikipedia page: "On January 15, Representative X was appointed to the House Appropriations Committee." The losing candidate does none of these things. They hold no committee hearings, take no votes, and make no staff announcements. The raw material for encyclopedic content is concentrated among winners.

This asymmetry operates through three channels. First, the *newsworthiness channel*: winning candidates generate press coverage that provides reliable sources for Wikipedia's verifiability standards. A committee assignment reported in a newspaper becomes a citable fact; a losing candidate's silence generates no such source. The relationship between press coverage and Wikipedia content is well documented: Keegan et al. (2013) show that Wikipedia articles about breaking events draw heavily on news sources, and the same dynamic applies to political biographies that must be updated with new institutional facts.

Second, the *institutional channel*: the congressional infrastructure (floor schedules, committee rosters, caucus memberships, constituent services) produces structured, documentable information only for those who hold office. The U.S. Congress generates a substantial stream of such information: the Congressional Record, committee hearing schedules, bill sponsorships, and roll-call votes are all public, dated, and citable. This institutional pipeline creates a steady supply of encyclopedic facts for incumbent MCs that has no equivalent for defeated candidates. The contrast is clearest during the transition period between Election Day and the convening of a new Congress (the shaded regions in Figure 1), when committee assignments are announced, leadership elections are held, and the organizational structure of the new Congress takes shape.

Third, the *editorial motivation channel*: volunteer editors who are ideologically aligned with winning candidates may be motivated by the excitement of victory to contribute, while those aligned with losers may disengage. This channel connects our argument to recent work on the winner-loser gap in news consumption. Batista and Calvo (2024) document that election winners consume news more rapidly, access more articles, and follow more peer recommendations, while losers disengage. We extend this logic to information *production*: the same motivational asymmetry that drives winners to seek news may also drive them, or editors sympathetic to them, to produce encyclopedic content. The production asymmetry has a structural component that the consumption asymmetry does not: even a highly motivated editor aligned with a losing candidate has fewer facts to document.

The distinction between the demand-side and supply-side mechanisms matters for how we interpret the post-election editing surge. If the surge is purely demand-driven, then it reflects a temporary reallocation of editorial attention that will dissipate as the news cycle moves on. If it is partly supply-driven, then it reflects a structural change in the availability of documentable events that will persist as long as the winners continue

to hold office and generate institutional facts. Our empirical design is structured to distinguish between these mechanisms: the leaving-Congress comparison (H_6) directly tests whether editing tracks events or attention, by examining cases where the two diverge.

2.3 Hypotheses

These considerations motivate three research questions. First, what does the electoral business cycle look like in Wikipedia, and how do editing patterns, editor composition, and information quality change around elections? Second, what motivates volunteer editors to contribute political knowledge, and does the answer differ for editors aligned with winners versus losers? Third, does increased public attention toward candidates affect the makeup and activity of the editor community? We operationalize these questions as six testable hypotheses:

H_1 **(Attention shock):** *Editing speed and page views for all Members of Congress will increase sharply after the election, reflecting the general newsworthiness of the event.*

This is the baseline demand-side prediction. Elections are newsworthy; attention increases; editors respond. H_1 should hold under both the attention-driven and supply-driven accounts.

H_2 **(Supply asymmetry):** *The post-election increase in editing activity will be larger for the pages of Members of Congress whose party won the presidency, reflecting the differential production of newsworthy events.*

A pure attention shock would affect both parties equally. The supply-side account predicts an asymmetry: the winning party's MCs generate more institutional events, and their pages should attract disproportionately more editing.

H_3 **(Editor composition):** *The post-election period will attract less experienced and more ideologically specialized editors, consistent with motivated partisan entry into Wikipedia editing.*

Elections may function as a recruitment mechanism, drawing new contributors into the encyclopedia. The editorial motivation channel predicts that these newcomers will be ideologically engaged rather than encyclopedically motivated.

H_4 **(Ideology and moderation):** *The editing surge will be concentrated among more moderate Members of Congress, whose institutional activities (committee assignments, bipartisan caucuses) generate more encyclopedic content than those of ideological outliers.*

Moderate legislators receive the more prominent committee assignments and institutional positions. The attention-driven account would predict the opposite: more extreme and controversial MCs should attract more attention and therefore more editing.

H_5 **(Attention feedback):** *Pages with higher prior page views will experience faster subsequent editing, consistent with the demand-supply feedback loop.*

H_5 tests whether the demand-side mechanism operates alongside the supply-side mechanism.

H_6 **(Leaving Congress):** *For Members of Congress who have left office, the post-election increase in editing speed will be smaller than for sitting Members, even though the increase in page views is comparable.*

H_6 tests the supply-side mechanism directly. Former Members no longer generate committee assignments, votes, or policy announcements. If editing were purely demand-driven, the post-election surge should be equally strong for former and sitting Members, because readers look up both groups at similar rates around elections. The supply-side account predicts a divergence: attention rises equally, but editing rises less, because the events that editors document are absent.

3 Data and Empirical Strategy

3.1 Data Sources

Our analysis draws on four data sources that we merge into a single edit-level dataset. The first is the **Wikipedia revision history**, retrieved via the MediaWiki API. For every Member of Congress who served between 2003 and 2022, we queried the API for the complete revision history of their English Wikipedia page. Each revision record contains the timestamp, the editor's username (or IP address for anonymous edits), the revision size in bytes, the edit summary comment, and the parent revision ID, which allows us to compute the size of each individual edit. The resulting dataset contains 1,816,512 edits across 1,899 unique pages, spanning from the earliest Wikipedia political biographies (circa 2003) through December 2022.

The second source is the **ORES quality prediction system** (Halfaker and Geiger 2020). For each edit, we obtain ORES's machine-learned predictions of whether the edit is "damaging" (likely to degrade article quality) and the article's overall quality class (Stub, Start, C, B, Good Article, Featured Article). The damage classifier provides a probability score; we use the binary classification at the default threshold. ORES allows us to assess whether the post-election surge in editing activity comes at a cost to information quality, a question with direct implications for the reliability of the encyclopedia as a source of political information.

The third source is the **congress-legislators repository**, maintained by the @unitedstates project, which provides biographical and political information for every Member of Congress: party affiliation, state, district, chamber (House or Senate), gender, race/ethnicity (African American, Hispanic, Asian/Pacific Islander), and the start and end dates of each legislative term. The term dates are essential for constructing the electoral cycle variable, and they allow us to construct the `inCongress` indicator, which takes the value 1 when the Member is currently serving at the time of a given edit and 0 otherwise. Members who were serving and then stopped (whether through defeat, retirement, or death) transition from 1 to 0, and this transition identifies the "leavers" in our supply-side test.

The fourth source is the **Voteview DW-NOMINATE dataset** (Poole 2005), which provides ideology scores for each Member of Congress on a liberal-conservative dimension. We merge these scores on ICPSR legislator identifiers and congress number, yielding ideology estimates for approximately 70% of the edit-level observations

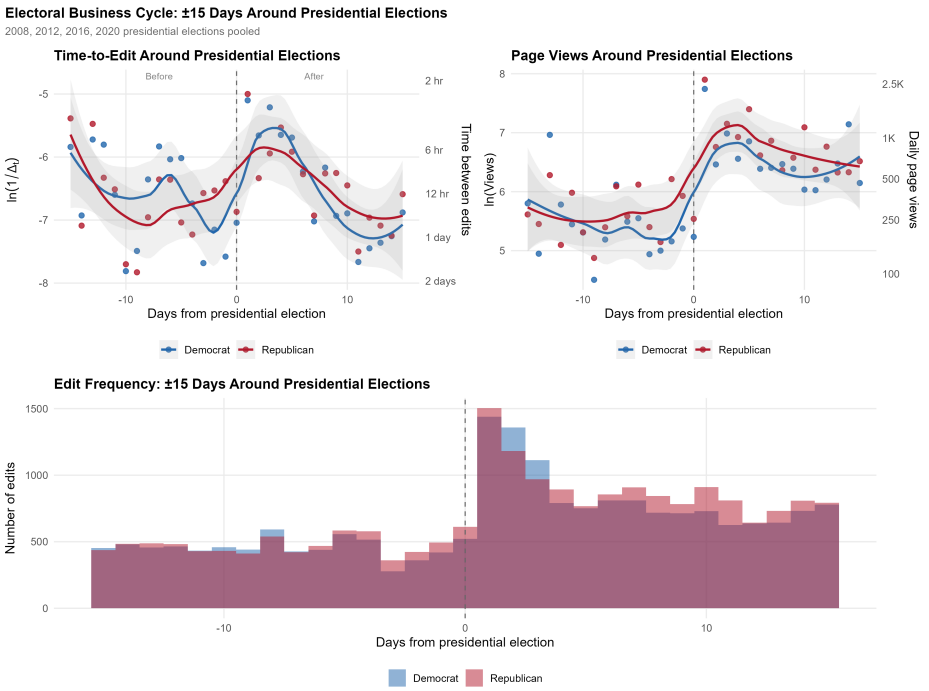


Fig. 2 The ±15-day window around four presidential elections (2008–2020). Upper panels: time-to-edit and page views by party, with the x-axis in days from election. The left y-axis shows the log-transformed variable; the right y-axis shows human-readable units. Lower panel: edit frequency by day.

(the remainder lack matches due to non-voting delegates, pre-Voteview congresses, or identifier mismatches).

3.2 Descriptive Overview

Figure 1 provides a panoramic view of the data. The lower panel displays the daily relative activity rate, defined as the fraction of all edits occurring on a given day, for Republican MC pages (red), Democratic MC pages (blue), and all MC pages (grey) between 2003 and 2022. Several patterns are immediately visible. First, the overall level of editing activity has declined over time, consistent with the well-documented maturation of Wikipedia's editor community. Second, the shaded regions, which cover the period from Election Day through the convening of the new Congress on January 3rd, show clear spikes in editing activity, especially during presidential election years (2004, 2008, 2012, 2016, 2020). Third, there is substantial day-to-day volatility, with isolated spikes corresponding to individual political events. The upper panel zooms into the 2010–2015 period, showing the 2010 midterm, 2012 presidential, and 2014 midterm election cycles at higher resolution.

Figure 2 focuses on the ±15-day window around the four presidential elections, pooling across 2008, 2012, 2016, and 2020. The upper-left panel shows the mean time-to-edit ($\ln(1/\Delta_t)$) by day, with human-readable labels on the right axis. Both parties show a clear acceleration around Election Day: the average time between edits drops from roughly one day to approximately six hours. The upper-right panel shows mean daily page views, which spike from approximately 250 to over 1,000 around the election. The lower panel confirms that the editing frequency peaks sharply on Election Day and remains elevated for several days afterward.

3.3 Key Variables

Our primary dependent variable is the *time-to-edit*, defined as the elapsed time in seconds between consecutive edits to the same Member of Congress's Wikipedia page. Following Batista and Calvo (2024), we transform this as $\ln(1/\Delta_t)$, where higher values indicate faster editing (shorter intervals between edits). This transformation has a natural interpretation: an increase of 1 unit corresponds to an e-fold decrease in the time between edits.

We also analyze: *page views*, measured as the daily number of views to the Wikipedia page (transformed as ln(Views)); *damaging edits*, a binary indicator from the ORES classifier; *editor experience*, measured as the log of the total number of edits by that editor across all congressional pages ($\ln(N_{\text{edits}})$); *MC ideology*, measured by first-dimension DW-NOMINATE scores; and *editor partisan leaning*, measured as the proportion of an editor's total edits that go to Republican Members of Congress. The `inCongress` transition from 1 to 0 identifies MCs who left Congress during the observation window; for each leaver, we compute the departure date and the number of days since leaving.

3.4 Empirical Design

We construct the running variable for the regression discontinuity by centering the electoral cycle at the election date. The raw variable `electoralCycle` runs from 0 (start of a congressional term) to 1 (end). We recenter it so that the election falls at 0, with negative values before and positive values after. For the presidential election replication, we use the number of days from the nearest presidential election date as the running variable.

We estimate robust RDD models (Calonico et al. 2014) with MSE-optimal bandwidth selection, local polynomial estimation, and bias-corrected robust confidence intervals. We complement the RDD with Cox PH survival models (SI Tables S7–S11), which estimate how the time between edits varies with covariates over the full observation period, and a two-way fixed-effects event study (MC fixed effects + year-quarter fixed effects) around the departure from Congress. The year-quarter FE absorb aggregate Wikipedia-wide attention shocks, including the general election-related editing surge, so that the event-study estimates reflect MC-specific changes in editing and readership.

4 Results

4.1 The Election as an Information Shock

Table 1 presents the RDD estimates for the three primary outcomes: time-to-edit, page views, and damaging edits. The results provide strong support for H_1. After elections, the time between edits to congressional Wikipedia pages drops sharply: the robust RDD estimate is 1.413 ($p < 0.01$) for Republican MC pages and 2.048 ($p < 0.01$) for Democrat MC pages. In substantive terms, the Democratic estimate implies that the average inter-edit time falls by a factor of $\exp(2.048) \approx 7.8$ immediately after the election. Page views show a parallel surge: the estimated discontinuity is 1.563 for Republicans and 2.399 for Democrats (both $p < 0.01$).

The larger estimates for Democratic MC pages are consistent with H_2: two of the four presidential elections in our sample were won by Democrats (Obama in 2008, Biden in 2020), and the winning party's MCs generate more institutional events during the transition period. The full-cycle estimates pool across all elections, including 2016 (won by Trump); the presidential-window Cox model (SI Table S11) provides more targeted evidence, with a negative Republican×Election interaction (-0.137, $p < 0.05$) indicating slower editing on Republican MC pages in the tight window around elections won by Democrats.

Damaging edits show a small but significant decline after elections (-0.014 for Republicans, -0.013 for Democrats, both $p < 0.05$). Despite the influx of less experienced editors documented below, the rate of damaging edits does not increase. The post-election editing surge is not driven by vandalism. The decline in damage is consistent with the rapid corrective behavior we observe in the Cox models: experienced editors who serve as gatekeepers respond quickly to problematic edits, maintaining information quality even as the editorial workforce turns over.

Editor experience declines significantly after elections: -0.452 for Republican MC pages and -0.409 for Democrat MC pages (both $p < 0.01$; SI Table S6). The decline confirms H_3: elections function as a recruitment mechanism, drawing individuals into Wikipedia editing who might not otherwise have contributed. The ideology results support H_4: post-election editing shifts toward more moderate MCs (-0.007, $p < 0.10$ for Republicans; $+0.008$, $p < 0.01$ for Democrats, both toward the center). Editor partisan leaning increases sharply on Republican MC pages ($+0.035$, $p < 0.01$) but is null on Democratic pages (-0.003, n.s.), suggesting that the partisan editorial surge is asymmetric (SI Table S6).

4.2 The Leaving Congress Test: Readers vs. Editors

Table 2 presents the central test of the supply-side hypothesis (H_6). We split the sample into edits to pages of Members currently serving (`inCongress` = 1) and edits to pages of Members who have left office (`leftCongress` = 1, `inCongress` = 0). The supply-side prediction is clear: if editing is driven by the availability of new events to document, the election effect should be smaller for former Members, who generate no new institutional facts. If editing is driven purely by attention, the effect should be comparable, since readers look up both groups at similar rates around elections.

Table 1 Robust Regression Discontinuity: Time-to-Edit, Page Views, and Damage

		Conventional		Bias-corrected		Robust	
	N	Est.	SE	Est.	SE	Est.	SE
ln(Time-to-Edit), Republican MC	800423	1.357	0.082	1.413	0.082	1.413***	0.084
ln(Time-to-Edit), Democrat MC	712089	1.980	0.100	2.048	0.100	2.048***	0.101
ln(Views), Republican MC	313278	1.523	0.064	1.563	0.064	1.563***	0.067
ln(Views), Democrat MC	274731	2.346	0.088	2.399	0.088	2.399***	0.090
Damaging Edit, Republican MC	799501	-0.016	0.005	-0.014	0.005	-0.014**	0.006
Damaging Edit, Democrat MC	711215	-0.012	0.004	-0.013	0.004	-0.013**	0.005

Note:

Standard errors in parentheses. *** p¡0.01, ** p¡0.05, * p¡0.1

The results confirm a divergence *at the electoral discontinuity*. For sitting Members, the post-election editing acceleration is 1.205 ($p < 0.01$). For former Members, it is 0.738 ($p < 0.01$), a gap of 39%. But page views surge nearly identically: 2.157 for sitting Members and 2.152 for former Members ($p < 0.01$ for both, difference not statistically significant). The election-day attention shock does not discriminate between current and former officeholders; editorial activity does, because former Members are no longer producing the events that editors document.

The divergence is direct evidence for the supply-side mechanism. If editing were purely demand-driven, the editing surge should mirror the views surge. It does not: readers treat sitting and former Members interchangeably around elections, but editors do not, because sitting Members generate the institutional events that constitute editable content and former Members do not.

Table 2 Robust RDD: Members In Congress vs. Members Who Left

		Conventional		Bias-corrected		Robust	
	N	Est.	SE	Est.	SE	Est.	SE
ln(TTE), In Congress	518926	1.162	0.071	1.205	0.071	1.205***	0.073
ln(TTE), Left Congress	199008	0.717	0.076	0.738	0.076	0.738***	0.089
ln(Views), In Congress	198176	2.109	0.072	2.157	0.072	2.157***	0.073
ln(Views), Left Congress	97353	2.164	0.072	2.152	0.072	2.152***	0.084
Damage, In Congress	517884	-0.023	0.005	-0.024	0.005	-0.024***	0.006
Damage, Left Congress	198742	-0.026	0.005	-0.024	0.005	-0.024***	0.006

Note:

Standard errors in parentheses. *** p¡0.01, ** p¡0.05, * p¡0.1

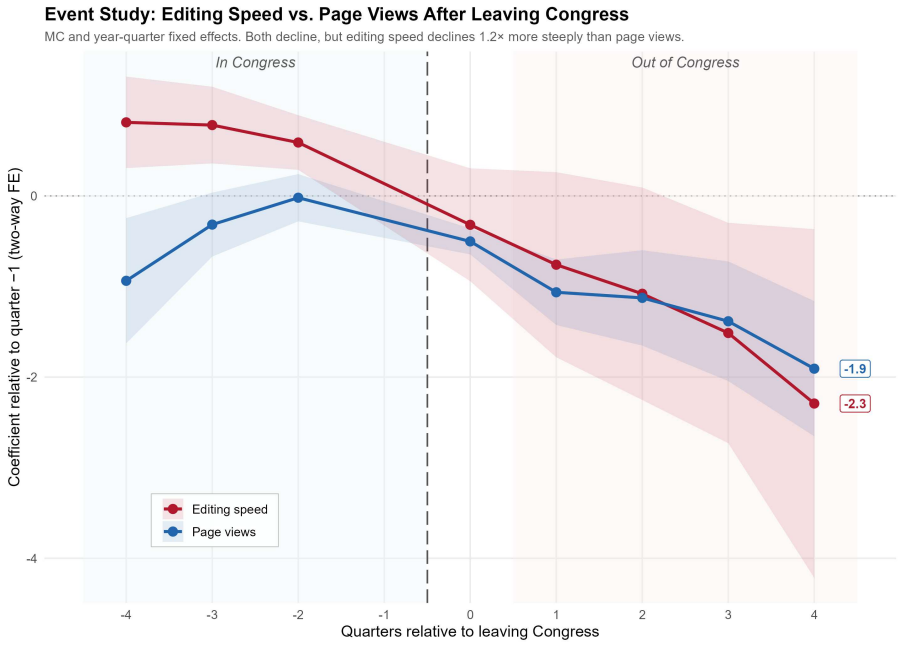


Fig. 3 Event study: editing speed (red) and page views (blue) in the ±4 quarters around departure from Congress. Both outcomes are estimated with MC and year-quarter fixed effects, with $q = -1$ as the reference. Both decline after departure, but editing speed declines more steeply. The events that editors document disappear, while residual readership persists longer.

4.3 Event Study: The Medium-Run Trajectory

The RDD captures the sharp discontinuity at the election. To trace the *medium-run* trajectory of editing and readership around departure from Congress, we estimate a two-way fixed-effects event study with MC fixed effects (absorbing time-invariant MC characteristics) and year-quarter fixed effects (absorbing aggregate Wikipedia-wide attention shocks, including the general election-related editing surge). The dependent variables are editing speed ($\ln(1/\Delta_t)$) and page views ($\ln(\text{Views})$), estimated in quarterly bins over the ±4 quarters around departure, with the quarter immediately before departure ($q = -1$) as the reference period.

Figure 3 presents the results. Both editing speed and page views decline after departure, but editing speed declines substantially more steeply. By four quarters after departure, the editing speed coefficient reaches approximately -2.3 (relative to $q = -1$), while the page views coefficient reaches approximately -1.9. Because the year-quarter fixed effects absorb the general election-related editing and viewing surge, these estimates reflect MC-specific changes: the decline is not an artifact of the aggregate electoral cycle but a within-MC response to the loss of institutional events.

The pre-departure period (quarters -4 to -2) shows an informative asymmetry. Editing speed is elevated relative to the reference period (coefficients of $+0.5$ to $+0.8$), reflecting the pre-departure editing surge that is likely driven by the election/transition period coinciding with the MC's final months in office. Page views, by contrast, are

relatively flat or slightly depressed in the pre-period. The pattern suggests that the pre-departure editing surge is supply-driven: editors are documenting the MC's final institutional activities (committee work, floor votes, farewell speeches), while readers are not yet seeking out these pages at above-average rates. The supply-side mechanism is visible not only in the post-departure decline but in the pre-departure elevation.

Two features of this event study merit emphasis. First, the steeper decline in editing speed than in page views is the within-MC analog of the RDD finding: the supply of documentable events disappears faster than the demand for information. When an MC leaves office, readers gradually lose interest (the page becomes less newsworthy over time), but editors lose their raw material immediately (the MC stops generating institutional facts on the day they leave). The editing decline is front-loaded; the views decline is gradual. Second, the year-quarter fixed effects ensure that the estimates are not confounded by the general election-related attention surge. The decline in editing speed after departure is not because the election tide recedes. It is because the MC-specific information pipeline shuts off.

Figure 4 provides a descriptive view of the same trajectory, disaggregated by party and binned monthly over a wider ±12-month window. Editing speed drops from approximately 2–6 hours between edits to 6–12 hours after departure. Edit volume drops by 60–70%, with a sharp spike in months −2 to 0 (the election/transition window) followed by a sustained lower baseline. The persistence of some post-departure editing (0.738 in the RDD, not zero) is consistent with maintenance editing: editors continue to update "former member of" language, add post-congressional career information, fix links, and document deaths.

4.4 Cox Proportional Hazards Models

While the RDD identifies the causal effect at the discontinuity, the Cox models estimate how the time between edits varies with covariates over the full observation period. The progressive specification (SI Table S7) builds from a bare party model through demographic controls, the electoral context, page characteristics, article quality, and ideology. The `afterElection` coefficient is positive and significant across all specifications ($\hat{\beta} = 0.096$, $p < 0.01$ in the full model), confirming H_1. Lagged page views are strongly associated with faster editing ($\hat{\beta} = 0.263$, $p < 0.01$), confirming H_5: the demand-side feedback loop is active alongside the supply-side mechanism. Damaging edits in the previous revision substantially accelerate subsequent editing ($\hat{\beta} = 0.614$, $p < 0.01$), consistent with rapid corrective responses by the gatekeeping community.

Table 3 directly estimates the leaving-Congress effect. Leaving Congress slows editing by 22% (hazard ratio = $\exp(-0.249) = 0.78$, $p < 0.01$). The Cox analog of the RDD and event-study findings holds here too: controlling for page views, demographics, damage, and article quality, the loss of institutional events independently reduces editorial activity. The `leftCongress`×`Republican` interaction is -0.127 ($p < 0.01$), indicating that departure hurts Republican MC pages more than Democratic ones, possibly because Republican MC pages depend more heavily on institutional events for editorial activity, or because the Republican editorial community is less engaged with former officeholders.

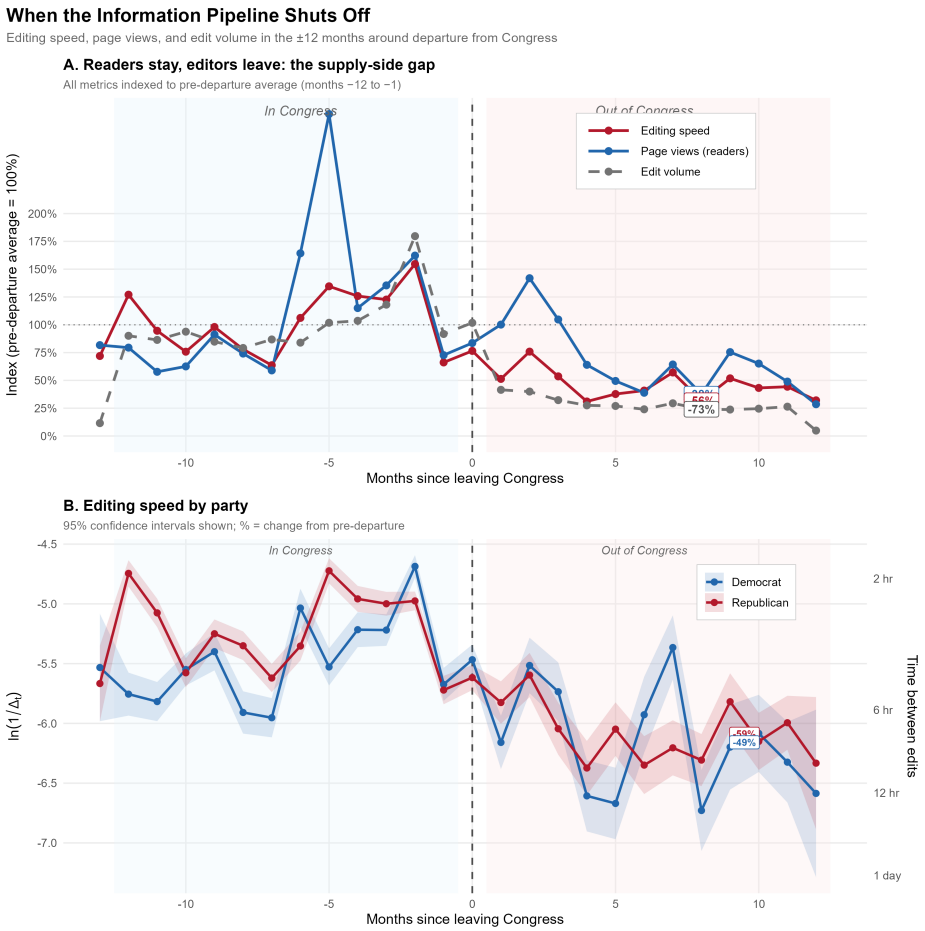


Fig. 4 Editing speed, page views, and edit volume in the ±12 months around departure from Congress, by party. The dashed line marks departure. Edit volume drops by 60–70% after departure.

The interaction models (SI Table S9) reveal that the African American×Election interaction is negative and significant (-0.047, $p < 0.01$), indicating a smaller post-election surge for African American MC pages. The Ideology×Election interaction is positive ($+0.049$, $p < 0.01$; SI Table S10), confirming H_4. In the ±15-day presidential window (SI Table S11), the Republican×Election interaction is negative (-0.137, $p < 0.05$), consistent with H_2 for the elections won by Democrats (2008, 2020).

Table 3 Cox PH Models: In Congress vs. Left Congress

	timeElapsed			
	Base Model 1	**Leave×Elec** Model 2	**Leave×Elec×Rep** Model 3	**Full** Model 4
leftCongress_01	−0.249***	−0.245***	−0.167***	
	(0.004)	(0.006)	(0.010)	(0.000)
afterElection		0.098***	0.091***	0.096***
		(0.005)	(0.007)	(0.005)
Republican	0.126***	0.127***	0.162***	0.147***
	(0.004)	(0.004)	(0.007)	(0.016)
woman	−0.029***	−0.031***	−0.021***	−0.030***
	(0.005)	(0.005)	(0.005)	(0.006)
african_american	0.023***	0.022***	0.031***	0.026***
	(0.007)	(0.007)	(0.007)	(0.008)
hispanic	−0.040***	−0.044***	−0.042***	−0.082***
	(0.009)	(0.009)	(0.009)	(0.010)
damage	−0.086***	−0.086***	−0.087***	−0.113***
	(0.006)	(0.006)	(0.006)	(0.008)
damage_lag	0.593***	0.592***	0.591***	0.613***
	(0.007)	(0.007)	(0.007)	(0.008)
lnViews_surv	0.272***	0.273***	0.272***	0.263***
	(0.002)	(0.002)	(0.002)	(0.003)
lnViewsLag_surv	0.044***	0.043***	0.044***	0.044***
	(0.002)	(0.002)	(0.002)	(0.003)
FA	−0.022**	−0.014	−0.005	0.008
	(0.009)	(0.009)	(0.009)	(0.012)
Stub	0.531***	0.528***	0.520***	0.312***
	(0.075)	(0.075)	(0.075)	(0.078)
ideology_dim1				0.021
				(0.018)
lnPageCreation				−0.065***
				(0.003)
leftCongress_01:afterElection		−0.010	−0.015	
		(0.008)	(0.013)	(0.000)
leftCongress_01:Republican			−0.127***	
			(0.012)	
afterElection:Republican			0.012	
			(0.009)	
leftCongress_01:afterElection:Republican			0.003	
			(0.017)	
N	278174	278174	278174	193882
R-squared	0.292	0.294	0.295	0.255
Max. R-squared	1.000	1.000	1.000	1.000
Log Likelihood	−3160917.000	−3160610.000	−3160501.000	−2138159.000
Wald Test	104163.000***	104630.400***	105003.000***	63299.830***
	(df = 11)	(df = 13)	(df = 16)	(df = 13)
LR Test	96211.380***	96825.510***	97043.930***	56960.120***
	(df = 11)	(df = 13)	(df = 16)	(df = 13)
Score (Logrank) Test	108192.400***	108819.100***	109194.400***	65765.890***
	(df = 11)	(df = 13)	(df = 16)	(df = 13)

***p < .01; **p < .05; *p < .1

5 Discussion

5.1 Readers and Editors: The Divergence on Two Timescales

The central finding of this article is that public attention and editorial production respond differently to the departure of a Member of Congress, and the divergence reveals the role of information supply. The evidence operates on two timescales.

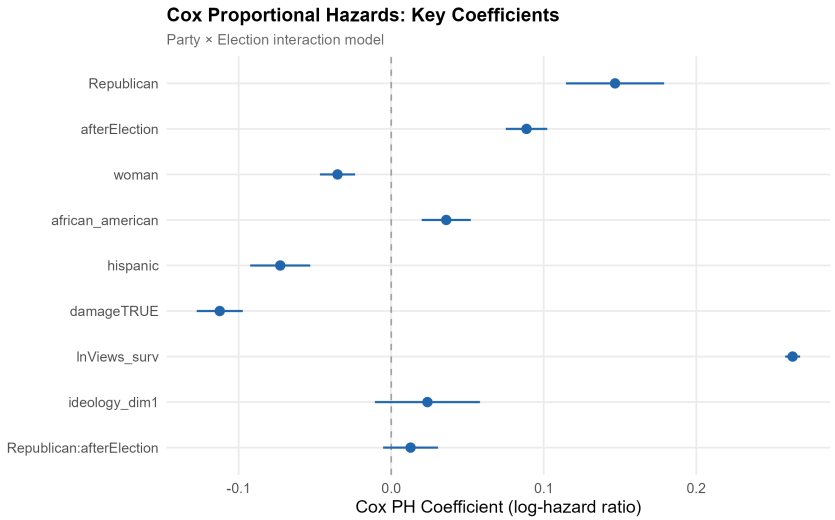


Fig. 5 Key Cox PH coefficients from the Party×Election interaction model (SI Table S9, Model 1). Positive coefficients indicate faster editing. Page views (`lnViews_surv`) is the largest predictor of editing speed.

In the *short run*, at the electoral discontinuity, the RDD shows that page views spike equally for sitting and former Members (2.157 vs. 2.152), but editing speed accelerates 39% less for former Members (1.205 vs. 0.738). The election-day attention shock is general, affecting all congressional Wikipedia pages regardless of whether the MC is still serving. The editing response is not, because editing requires new institutional events to document, and former Members no longer generate them.

In the *medium run*, the two-way fixed-effects event study reveals that both editing speed and page views decline within the same MC page after departure, but editing speed declines more steeply. By four quarters after departure, and after absorbing aggregate Wikipedia-wide time trends, editing speed falls by approximately 2.3 log units while page views fall by approximately 1.9. The steeper editing decline reflects the immediate disappearance of event-driven editing (committee assignments, votes, policy announcements), while the more gradual views decline reflects the slower erosion of public interest in a politician who is no longer making news.

Taken together, these results show that the production of political knowledge online depends on two distinct inputs: public attention (the demand side) and institutional events (the supply side). Attention alone is insufficient; even when readers continue to visit a page, editors cannot produce new content without new facts to document. The supply-side asymmetry is not just a short-run phenomenon visible at the electoral discontinuity. It is a structural feature of the knowledge infrastructure that persists and deepens over the quarters following departure.

5.2 Elections as a Recruitment Mechanism for Wikipedia

Beyond reshaping how existing editors behave, our results suggest that elections serve as a pathway into Wikipedia editing for new contributors. The sharp decline in average

editor experience after elections (H_3) is not simply a dilution effect; it reflects the entry of individuals who had not previously edited congressional pages. The recruitment of new editors matters for the supply-side mechanism: newcomers are drawn by the salience of the electoral event rather than by the steady availability of institutional facts to document. They arrive during the attention shock but may not persist once the stream of new events subsides, a hypothesis that longitudinal tracking of editor careers could test.

The fact that damage rates *decline* rather than increase after elections (Table 1, columns 5–6) suggests that the existing community of gatekeeping editors successfully absorbs and polices the newcomers. If elections reliably attract new editors, the editorial infrastructure could capitalize on this influx by providing targeted onboarding during post-election periods: guidance on sourcing requirements, neutral point of view policies, and the conventions for political biography editing.

5.3 The Electoral Business Cycle of Knowledge

The analogy to the electoral business cycle in macroeconomics (Nordhaus 1975) is deliberate. Just as incumbents can influence economic conditions before elections, the electoral process influences the production of political knowledge. The "boom" phase occurs after the election, when new officeholders generate facts. The "bust" phase occurs during the middle of the congressional term, when legislative activity is routine and generates less editorial attention. The shaded periods in Figure 1, which run from Election Day to the start of Congress, correspond to the transition period when committee assignments are made, leadership elections occur, and the new Congress is organized. It is precisely during this period that the supply of new political information is concentrated.

5.4 Implications for the Knowledge Infrastructure

Our findings raise concerns about the equity of political knowledge production. If the Wikipedia pages of winners are updated faster, by more editors, with more attention from partisan specialists, then the encyclopedia may systematically provide more current and detailed information about incumbent officeholders than about their predecessors or challengers. The downstream consequences extend to voters seeking information (Brown 2011), to journalists using Wikipedia as a background source, and to search engines that surface Wikipedia content in response to political queries.

The demographic heterogeneity in our results is also concerning. The smaller post-election editing surge for African American MCs (SI Table S9), and the gendered asymmetries in editing speed, suggest that the volunteer editorial workforce does not distribute its attention equitably across the political landscape. The pattern aligns with broader concerns about representational gaps in Wikipedia's coverage of politicians (Wagner et al. 2015).

More broadly, the supply-side asymmetry we document is not unique to Wikipedia. Any knowledge platform that depends on real-world events to generate documentable content will exhibit similar asymmetries when events are concentrated among particular actors. Court dockets illustrate the pattern: when a judge leaves the bench, their

Wikipedia page continues to receive traffic from law students and journalists, but edits slow because the judge no longer issues opinions that generate citable facts. The same logic applies to corporate databases that update when firms file disclosures, to sports wikis that track athletes only while they compete, and to scientific profiles that grow only as researchers publish. In each case, the production of knowledge depends on an external stream of events, and when that stream stops, even sustained public interest cannot compensate.

5.5 Limitations and Future Directions

The principal limitation of the leaving-Congress comparison is that Members leave for heterogeneous reasons (electoral defeat, voluntary retirement, and death), each of which may produce different patterns of editorial response. Our current analysis pools these categories. Electoral defeats are the cleanest supply-side test because they are plausibly exogenous to the MC's editorial profile; future work could exploit close elections as a regression discontinuity at the margin of victory to isolate the causal effect of losing office on Wikipedia editing. Separating retirements (which are announced in advance and may produce a gradual editorial decline) from defeats (which are sudden) would further sharpen the identification.

Additional limitations include the observational nature of our survival models, which cannot rule out all confounding; the fact that we observe editing behavior but not the *content* of edits (future work should analyze whether post-election edits correspond to institutional events like committee assignments); the pooling across four presidential elections with different partisan outcomes; and the absence of data on individual editor motivations, which survey or interview methods could address.

5.6 Conclusion

Elections reallocate political power, but they also reallocate the raw material of political knowledge: the events, decisions, and institutional activities that constitute documentable facts. The electoral business cycle of Wikipedia reflects this deeper asymmetry. Winners generate the information that editors document, and the knowledge infrastructure responds accordingly. When Members of Congress leave office, both readers and editors eventually depart. Editors depart faster, because the supply of new facts dries up before the demand for information does. Online political knowledge is constrained not only by how many people want to know, but by how many facts there are to write.

Supplementary information. The Supplementary Information (SI) contains additional tables (S6–S11) referenced throughout the text.

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Code availability. Replication code will be made available on Dataverse upon publication.

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