Political Appointments, Careers, and Performance in the Civil Service: Evidence from U.S. Federal Judges*

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Abstract. This paper studies the role of political appointments on the performance and career trajectories of civil servants. The focus is on U.S. federal judges, who are nominated by the president based on recommendations from their home-state senators. Leveraging individual-level data on judges and senators from 1789 to 2019, we employ difference-in-differences and event-study designs to compare judges' performance before and after their recommending senators leave office. Following their recommenders' exit from Congress, judges' performance decline. These negatives effects manifest in both quantity, as measured by fewer judicial opinions authored and a larger backlog of civil cases, and quality, indicated by shorter opinions and fewer citations made and received. The results are consistent with an erosion of career prospects driving the effects: after their recommenders leave office, district court judges become less likely to be promoted to upper-level courts. The findings highlight how political appointments can incentivize civil servants through career concerns but also show that these incentives are closely tied to the tenure of their political sponsors.

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1. INTRODUCTION

Political appointments are the predominant method for selecting public employees worldwide (Lim and Snyder Jr, 2021). These appointments play a crucial role in shaping the qualifications of public servants (Colonnelli et al., 2020), the provision of public goods (Akhtari et al., 2022; Aneja and Xu, 2024; Toral, 2024), levels of corruption (Gagliarducci and Manacorda, 2020), fiscal capacity and financial performance (Vannutelli, 2022; Xu, 2018), and the effectiveness of crisis management (Chen et al., 2022). Judicial appointments are no exception: as of 2021, 70% of the world's nations filled court positions through presidential appointment (CIA, 2021). Despite their importance, there is limited evidence on the consequences of political influence in judicial nominations – a notable gap given that judicial performance is central to democratic quality (Hamilton et al., 1998; La Porta et al., 2004; Locke, 1976; Montesquieu, 1991) and economic development (Acemoglu and Johnson, 2005; La Porta et al., 1997).

Recent studies have begun to address this gap by examining how political appointments affect judicial performance. Some compare elected and appointed judges within the same country (Lim, 2013) while others analyze institutional reforms that removed political appointments altogether (Mehmood, 2022). However, because judges typically operate under a single appointment system throughout their careers, their dependence on political actors is more likely to vary due to individual-level rather than system-wide changes.

In this paper, we leverage the institutional features of the U.S. federal judicial appointment process to provide the first within-judge estimates of how political appointments affect judicial performance. Federal district court judges in the United States are nominated based on recommendations from home-state senators who share the president's party affiliation. Using individual-level data on judges and senators from 1789 to 2019, we identify each judge's recommending senator(s). We then employ a stacked-by-event design (Cengiz et al., 2019; Deshpande and Li, 2019) to examine how the exit of the recommending senators from Congress affects the performance and career progression of the judges they supported.

We find that district court judges author fewer judicial opinions and accumulate a larger backlog of civil cases following the departure of their recommending senators. Moreover, the loss of a recommending senator leads to a statistically significant decline in the quality of judicial opinions, as measured by opinion length, the number of citations received, and the number of citations included. Event-study estimates show that these effects emerge only after the senator's exit, supporting the parallel trends assumption underlying our identification strategy.

These negative effects are widespread. Heterogeneity analyses show that they hold across judges with varying levels of quality, tenure, and partisan affiliation. The findings are robust to a range of sensitivity checks, including alternative approaches to identifying political recommenders. Specifically, we collect and review all available minutes from the confirmation hearings of district court judges during our study period – 1,202 hearings, covering 56% of the judges in our sample. We designate a senator as a judge's recommender only if the senator publicly endorses the nominee during the hearing. The results remain robust and quantitatively similar when using this more stringent definition. Furthermore, the decline in performance occurs regardless of whether the senator's departure from office is due to an unexpected event – such as electoral defeat or death – or to voluntary exits, such as retirement, resignation, or pursuing another office.

To confirm that the observed decline in judicial productivity is driven by the exit of home-state senators, rather than broader partisan dynamics, we further show that the treatment effect remains even when a judge's recommender is replaced by a co-partisan. This suggests that ties to specific senators – rather than shared party affiliation – are responsible for the observed changes in judicial output.

Next, we investigate the mechanisms linking the exit of recommending senators to the observed decline in judicial productivity. Because senators play a central role in the nomination of higher-level judges (Domnarski, 2009), we hypothesize that the loss of a recommending senator may diminish a district judge's career advancement opportunities. Given that district court judges hold lifetime appointments, established economic theories of career incentives (Gibbons and Murphy, 1992; Rosen, 1986) imply that the departure of a key political sponsor may reduce incentives to exert high effort.

Consistent with this hypothesis, we find a substantial negative effect of recommenders' exit on judges' career advancement. Judges experience a sharp decline in the probability of being promoted to an upper-level court following the departure of their recommenders, effectively closing off opportunities for advancement within the federal judiciary. In line with the institutional rules governing federal judicial nominations, this effect is concentrated in years when judges share partisan affiliation with the sitting president – periods in which judges are best positioned to benefit from their recommenders' backing.

This paper makes several contributions. First, it extends the growing literature on the political appointment of civil servants. Recent studies (e.g., Colonnelli et al., 2020; Gallo and Lewis, 2012; Spenkuch et al., 2023; Xu, 2018) document how patronage appointments can undermine the quality and performance of various public organizations. Leveraging the institutional features of the federal judiciary, this study examines how the effects of discretionary appointments evolve over the course of civil servants' careers, particularly in response to the exit of their political sponsors. The findings suggest that, while in office, recommending senators may enhance judges' performance by providing career incentives that influence both the quantity and quality of their output.

Second, this study bridges the literature on political appointments with research on how promotion schemes influence incentives and performance (Bertrand et al., 2020; Ke et al., 2018; Voth and Xu, 2019). Since promotions constitute the central causal mechanism in our analysis, this paper further contributes to the broader literature at the intersection of political economy and organizational economics. While this body of work consistently finds that limited career advancement opportunities weaken public employee performance (Bertrand et al., 2020; Deserranno et al., 2024; Finan et al., 2017; Karachiwalla and Park, 2017; Kim, 2022; Nieddu and Pandolfi, 2022), it has only tangentially addressed career concerns in the judiciary, typically focusing on small or selective subsamples of judges (Black and Owens, 2016; Schneider, 2005). Yet, understanding how to incentivize judges is critical, as judicial performance plays a foundational role in both democratic governance (La Porta et al., 2004) and economic development (Acemoglu and Johnson, 2005). Leveraging comprehensive data and a unique empirical setting, the current work contributes to this endeavor by providing causal estimates for the universe of

district court judges over a span of more than two centuries, within one of the largest judiciaries in the world.

Third, these findings contribute to the broader debate on the merits of alternative appointment procedures for high-level public officials (Huber and Ting, 2021). A substantial body of research has shown that the behavior of elected officials is often shaped by electoral incentives, and that judges are not exempt from such pressures (Berdejó and Yuchtman, 2013; Besley and Payne, 2013; Canes-Wrone et al., 2014; Gordon and Huber, 2007; Huber and Gordon, 2004; Lim et al., 2015). By showing that political considerations also shape the behavior of appointed judges, this study calls into question the extent to which lifetime appointments insulate the judiciary from political influence and mitigate the distortions introduced by electoral cycles.

Finally, this article advances our understanding of the functioning of the U.S. federal judiciary and the factors that shape judicial performance. Prior research has primarily examined how judicial bias arises from judges' partisan affiliation (Cohen and Yang, 2019; Sunstein et al., 2007) or personal ideology (Schanzenbach and Tiller, 2008). In contrast, this study offers a new perspective by investigating how connections to specific politicians influence judicial performance through their impact on career incentives. This approach deepens our understanding of judicial behavior by emphasizing how performance incentives can evolve dynamically over the course of a judge's career.

The remainder of the paper is organized as follows. Section 2 provides background on the U.S. federal court system, with particular emphasis on the role of home-state senators in the nomination process for district court judges. Section 3 describes the data sources and key features of our dataset on federal judges and U.S. senators, along with the procedure used to match them. Section 4 outlines the empirical strategy. Section 5 presents the main results on judicial performance, and Section 6 examines the impact on promotions – our hypothesized causal mechanism. Section 7 concludes.

2. INSTITUTIONAL BACKGROUND

U.S. federal courts are responsible for adjudicating both civil and criminal cases involving potential violations of federal law. The federal judiciary is structured in three tiers: 94 district courts, 13 courts of appeals (also known as circuit courts), and the U.S. Supreme Court. Unlike state-level judges, who are typically elected by the public, federal judges are appointed for life by the President of the United States. However, while the president formally makes these nominations, the process – particularly at the district court level – involves several other actors.

In practice, candidates for district court judgeships are traditionally recommended by home-state senators who share the president's party affiliation. If no such senators exist, the president often consults with other high-ranking state officials from the same party, such as House representatives (Rutkus, 2016). After vetting the candidate(s) proposed by these political allies, the president submits a nomination to the Senate Judiciary Committee, which then conducts a confirmation hearing that includes a public question-and-answer session with the nominee.

Following the hearing, the committee refers the candidate to the full Senate with a favorable, unfavorable, or no recommendation. In the vast majority of cases, nominees are reported favorably and in a relatively swift manner.[1] The full Senate then votes on the nomination, typically by unanimous consent. Aside from the Senate, the only other institution with a formal role in the process is the American Bar Association (ABA), which provides a non-binding evaluation of the nominee before the Judiciary Committee takes action.

Although not constitutionally mandated, the practice of deferring to home-state senators in the nomination of district court judges has become a deeply entrenched norm, applied consistently across administrations of both parties. As a result, district court judges are often associated more closely with their senatorial recommenders than with the nominating president. As U.S. Attorney General Robert F. Kennedy once put it, "Ba-

[1] However, longer confirmation times – and occasional rejections – have become more common in recent decades (Binder and Maltzman, 2009).

sically it's senatorial appointment with the advice and consent of the president" (O'Brien, 1986, p. 40).

This practice has drawn criticism for favoring politically connected candidates over more qualified ones. As one U.S. senator openly acknowledged, it serves as an "important source of political patronage" for members of the Senate (Tydings, 1977). Factors influencing senatorial recommendations often include personal ties such as friendship, acquaintance, or family relationships (Domnarski, 2009). Moreover, political alignment plays a substantial role in selection: most district judges were politically active prior to their appointment (Carp et al., 2019).

While home-state senators are generally thought to influence only district court nominations, anecdotal and documentary evidence suggests they also play an active role in circuit court appointments (Domnarski, 2009). Congressional hearing transcripts often contain strong oral and written endorsements of court of appeals nominees by home-state senators. This may reflect either direct recommendations for circuit court appointments or efforts to promote judges whom they had previously recommended for district court positions.

3. DATA

To study the impact of senators' tenure on the performance and careers of federal judges, we assemble a novel dataset that combines information on U.S. federal judges and senators covering the period from 1789 to 2019.

3.1. US Federal Judges Data. Data on judicial careers come from the Biographical Directory of Article III Federal Judges, compiled by the Federal Judicial Center (FJC), the research and education agency of the judicial branch of the U.S. government. The directory includes biographical information on judges appointed since 1789 to the U.S. district courts, courts of appeals, Supreme Court, and Court of International Trade, as well as now-defunct courts such as the U.S. circuit courts, Court of Claims, Customs Court, and Court of Customs and Patent Appeals. The FJC data provide complete career histories

for federal judges, including the exact dates of each appointment.

Data on judicial opinions come from CourtListener, a free legal research platform operated by the non-profit Free Law Project. CourtListener contains over 9 million legal opinions from federal, state, and specialty courts, spanning from the 1920s to the present. Judicial opinions – written statements explaining the court's ruling – are a central component of a judge's work and are usually single-authored at the district court level. Prior studies have relied on them as a central measure of judicial performance (Ash et al., 2024; Ash and MacLeod, 2024, 2015; Posner, 2008).

For each judge-year observation, we compute four performance outcomes. The first captures the *quantity* of output: the total number of judicial opinions single-authored by a judge in a given year. While not all case resolutions require a written opinion, this metric serves as a close proxy for the number of substantive rulings issued and cases closed. Because new cases are randomly assigned to judges on a rolling basis, variation in the number of opinions reflects differences in judicial speed and productivity rather than differences in caseload composition.

The remaining three outcomes proxy for the *quality* of judicial output: the average number of words per opinion, the average number of citations received, and the average number of citations included. While citations do not directly measure the correctness of a decision, they serve as informative indicators. A higher number of citations received implies that the opinion proved useful to future courts, whole a higher number of citations included suggests that a judge made a greater effort to ground their reasoning in precedent.

Data on civil case backlog are drawn from the Civil Justice Reform Act (CJRA) Reports, available semiannually starting in 1998. Mandated by the Civil Justice Reform Act of 1990, these reports are compiled by the Administrative Office of the U.S. Courts and provide standardized statistics for each U.S. district judge. Among the various metrics reported, we focus on the number of civil cases pending for more than three years – a key indicator of judicial backlog and protracted litigation delays.

3.2. US Senators Data. Data on U.S. senators are compiled from three sources: the Biographical Directory of the United States Congress, the website Voteview.com, and the Roster of Members of the United States Congress (McKibbin et al., 1984). By combining these sources, we construct complete political biographies of all senators who served between 1789 and 2019.

3.3. Matching of the Datasets. We focus on federal judges who, at any point during the 230-year sample period, were appointed to a U.S. district court.[2] We follow each judge's career in the district courts until their promotion, retirement, resignation, or death – whichever comes first. In doing so, we also track whether and when the senator(s) who recommended their nomination left Congress. To facilitate this, we transform the FJC data into an unbalanced panel at the judge-year level.

To identify the recommending senator(s) for each judge, we merge this panel with the senator data. We define as recommenders the senator or pair of senators who: (i) represented the state of appointment at the U.S. Senate at the time of nomination, and (ii) belonged to the same party as the nominating president.[3] Because our treatment of interest is the departure of a judge's recommender from Congress, we exclude from the analysis judges who were appointed in states where no senator shared the president's party at the time of nomination.

The final sample includes 1,885 judges appointed between 1789 and 2019.[4] Table A.1 provides summary statistics on judge characteristics. The average judge authors approximately six opinions per year. These opinions are, on average, 3,644 words in length, receive 4 citations, and include 13 citations. Judges have, on average, 12 civil cases pending for more than three years on their docket. Approximately half of the judges have two recommending senators, while the other half have one. Six percent of judges in the sample are promoted to an appellate court, with an average time to promotion of seven

[2]We exclude: (i) judges appointed in years when their state did not yet have Senate representation, and (ii) judges serving in the district courts of Washington, D.C., and Puerto Rico.

[3]This procedure reflects the established institutional practice of senatorial recommendation, as described in Section 2.

[4]As discussed in Section 3, judicial opinion data are available from 1924 onward, while CJRA backlog data begin in 1998.

years. Figure A.1 shows the distribution of promotions by year, which ranges from 0 to 7. Roughly half of the judges in the sample are appointed by a Democratic president, and half by a Republican.

4. Empirical Strategy

The identification strategy leverages the staggered exit of recommending senators from Congress across judges. Two key features allow us to use these events for identification. First, judges have no influence over the timing or duration of their recommenders' tenure in the Senate. Second, approximately half of all exits occur for plausibly unanticipated reasons – such as death in office, loss in a general election, or loss in a primary – which form the focus of our main specification.[5] Hence, the timing of treatment is plausibly exogenous. The empirical strategy compares the evolution of outcomes among judges treated at different times.

Given the presence of staggered treatment assignment, we adopt a "stacked-by-event" design (Aneja and Xu, 2024; Cengiz et al., 2019; Deshpande and Li, 2019). This estimator accounts for the potential pitfalls of two-way fixed effects estimators in the presence of staggered adoption (Borusyak et al., 2024; De Chaisemartin and d'Haultfoeuille, 2020; Goodman-Bacon, 2021).[6]

The "stacked" design treats each senator exit wave as a separate sub-experiment. For each wave, we construct a difference-in-differences estimate comparing judges affected by that wave to those unaffected in that year. We then stack these wave-specific estimates to obtain a pooled effect of senator exits across all events.[7] Let j index the senator exit wave, and k denote the number of years relative to the exit, where $k = 0$ corresponds to

[5] Unexpected exits account for 49% of all exits between 1789 and 2019. Other exits occur when a senator chooses not to seek re-election, seeks or accepts another office, or resigns. Including these additional cases yields similar results (see Section 5.3).

[6] In this context, one main concern is including already-treated judges as part of the control group. In the presence of heterogeneous treatment effects across judges experiencing senator exits at different points in time, this can lead to biased estimates.

[7] This design makes the composition of comparison groups explicit. Specifically, the control group for each event consists of judges who have not yet experienced a senator's exit by the end of the event window ("not-yet-treated" judges).

the year of exit and negative values denote years prior. We restrict the pooled sample to a 12-year symmetric window around each event.[8] For judge i, senator exit wave j, and year k relative to the exit, we estimate:

$$y_{ijk} = \beta(Treated_{ij} \times Post_{jk}) + \theta_{ij} + \tau_{jk} + \epsilon_{ijk} \tag{1}$$

where $Treated_{ij} = 1$ if judge i's recommending senator exits Congress in wave j, and 0 otherwise. The outcome of interest is denoted by y_{ijk}. The variable $Post_{jk}$ is defined as $Post_{jk} = \mathbb{1}\{k \geq 0\}$ for each wave j, taking the value 1 in the year of the exit $k = 0$ and in all subsequent years, and 0 before. The term τ_{jk} represents wave-specific year fixed effects, which control for common temporal shocks across judges in the same wave. Because the same judge may appear as both treated and control in different exit waves, we include judge fixed effects θ_{ij} separately for each event wave.[9] The coefficient β is the main parameter of interest, capturing the effect losing the recommending senator, relative to control judges who have not yet experienced such an exit in the corresponding wave. Standard errors are clustered at the judge level to account for serial correlation and for the repeated appearance of judges across different event waves, either as treated or control units.

To support a causal interpretation, we require that, in the absence of treatment, outcomes for treated and control judges would have followed parallel trends. To assess this assumption and explore the dynamic evolution of treatment effects, we also estimate:

$$y_{ijk} = \sum_{l=-5}^{+6} \beta_l (Treated_{ij} \times \mathbb{1}\{k = l\}) + \theta_{ij} + \tau_{jk} + \epsilon_{ijk} \tag{2}$$

with the year immediately preceding the senator's exit ($k = -1$) omitted as the reference category. In this specification, the coefficients β_l capture the difference in outcomes for treated judges l years relative to the exit, compared to the pre-exit year, and relative to the evolution of outcomes for control judges who have not yet been treated.

[8] Six years corresponds to the length of a full Senate term. Results are robust to alternative window lengths (not reported for brevity but available upon request).

[9] Control judges who experience a senator's exit within the event window of wave j are excluded from that wave's estimation.

As discussed in Section 2, judges may start their appointment with either one or two recommending senators. Since our main interest lies in assessing the impact of losing all political ties, the analysis focuses on the exit of the last active recommender. For judges with a single recommender, this is the only relevant exit. For judges with two, we define treatment as the exit of the second (i.e., last remaining) recommender.[10]

5. Main Results

5.1. Effect of Senator's Exit on Judge's Performance. Table 1 reports estimates of β from Equation (1), which capture the causal effect of a recommending senator's exit from Congress on judicial performance. Columns (1) through (4) present results for the four measures of performance based on judicial opinions, while column (5) shows the effect on the number of pending civil cases.

Column (1) reveals a substantial decline in judicial output following the departure of the judge's last active recommender: this event leads to a 19% reduction in the number of opinions authored.[11]

As noted above, the number of opinions that a judge authors on a given year is mechanically tied to the number of cases they close during that period. Thus, the negative and significant coefficient in column (1) may reflect one of two dynamics: judges may take more time per case in order to produce higher-quality opinions, or they may simply slow down, closing fewer cases without any improvement in quality. The estimates in columns (2) through (4) support the latter interpretation. Following the exit of the recommending senator, judges author opinions that are, on average, shorter (column 2), receive fewer citations from other opinions (column 3), and include fewer citations to prior work (column 4).

The results in column (5) further reinforce this interpretation. Although data on civil cases pending for more than three years are available only for a shorter time span, the esti-

[10] In Section 5.2, we also explore the effects of each of these exits separately.

[11] Since the coefficients are estimated using Poisson regressions, the magnitude of the coefficients can be calculated as follows: $\%\Delta y = 100 \times (e^{\beta} - 1)$.

mates are in line with those from the other performance measures. After the departure of their recommender, judges accumulate a significantly larger backlog of civil cases. Given that judges have, on average, between five and six such cases while their recommender remains in office, the estimated coefficient implies an increase of nearly 11 additional pending cases.

Taken together, these results show that the loss of a political sponsor leads to a decline in both the quantity and quality of judicial output.

Table 1: Effect of Senator's Exit on Judge's Performance

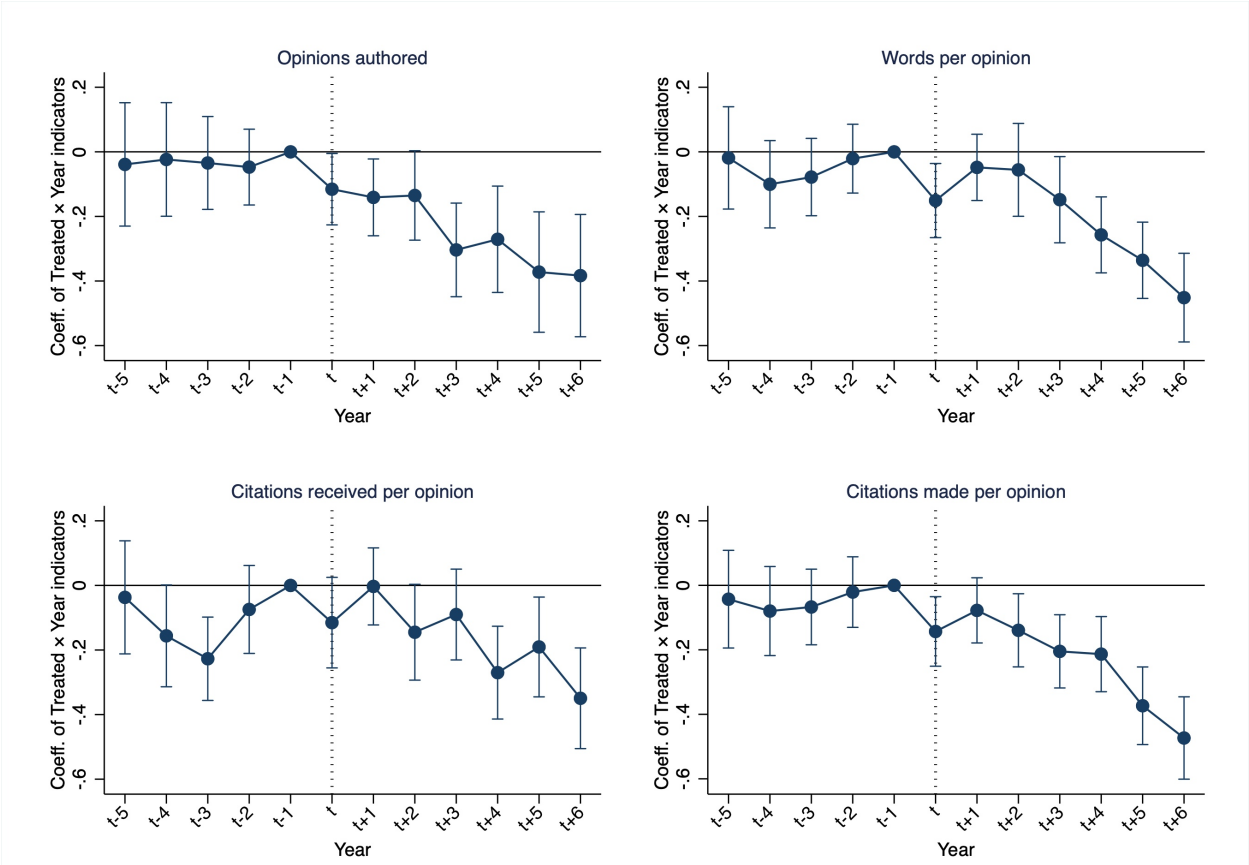
	Judicial Opinions				
	Total authored	Number of words	Citations received	Citations made	Civil cases pending
	(1)	(2)	(3)	(4)	(5)
Treated × Post	-0.21***	-0.16***	-0.07	-0.19***	1.07**
	(0.07)	(0.04)	(0.05)	(0.04)	(0.50)
Observations	33,338	33,338	31,961	33,021	9,171
Mean of dep. var., Treated = 1 & Post = 0	4.91	3431.44	4.85	11.94	5.55
Judge × Event FEs	Y	Y	Y	Y	Y
Year × Event FEs	Y	Y	Y	Y	Y

Notes: All coefficients are estimated using Poisson regressions. The unit of observation is judge × year × senator exit wave. The dependent variables are: the number of opinions authored by judge i in each year (column 1); the average number of words in the opinions authored by judge i in each year (column 2); the average number of citations received by the opinions authored by judge i in each year (column 3); the average number of citations included in the opinions authored by judge i in each year (column 4); and the number of civil cases assigned to judge i that have been pending for more than three years as of year t. Treated is an indicator equal to 1 if the judge's recommender exits the Senate in the event wave, and 0 otherwise. Post is an indicator equal to 1 starting in the event year. All regressions include judge × event and year × event fixed effects. Standard errors are clustered at the judge level. *** p<0.01, ** p<0.05, * p<0.1.

Figures 1 and 2 display estimates of the β_l parameters from Equation (2), for $l = -5, +6$, using the year prior to the senator's exit ($l = -1$) as the omitted category. Figure 1 presents four event-study panels corresponding to the opinion-based outcomes in Table 1, while Figure 2 shows the results for the backlog of civil cases. In all cases, the estimates indicate no evidence of pre-trends. The effects emerge immediately after the senator's departure from Congress and persist for at least six years. Notably, while the increase in

pending cases begins shortly after the exit, the effect becomes substantially larger starting four years later, consistent with the CJRA definition which flags civil cases pending for more than three years.[12]

Figure 1: Effect of Senator's Exit on Judicial Opinions
Dynamic Effects

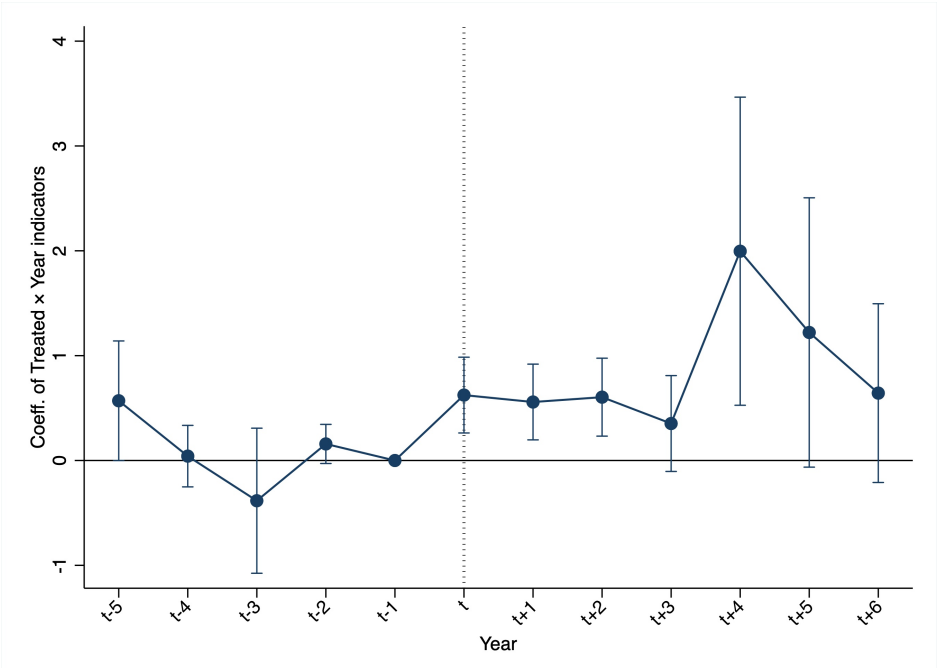


Notes: The figure reports estimates from Equation (2), an event-study specification that augments Equation (1) by allowing the estimated difference between treated and control judges to vary by year relative to the one before the senator's exit. The dependent variables are: the number of opinions authored by judge i in each year (top left); the average number of words in the opinions authored by judge i in each year (top right); the average number of citations received by the opinions authored by judge i in each year (bottom left); and the average number of citations included in the opinions authored by judge i in each year (bottom right). All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

5.2. Heterogeneity Analyses. The results presented above show that the output of federal district court judges significantly declines following the departure of all recommend-

[12]The elevated backlog persists through year $t + 6$, though the effect appears somewhat muted after the spike at $t + 4$. One possible explanation is that the release of the CJRA report at $t + 4$, which publicly documents the growing backlog, may prompt judges to respond by reducing delays in subsequent years.

Figure 2: Effect of Senator's Exit on Civil Cases Backlog
Dynamic Effects



Notes: The figure reports estimates from Equation (2), an event-study specification that augments Equation (1) by allowing the estimated difference between treated and control judges to vary by year relative to the one before the senator's exit. The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

ing senators. But are these effects driven specifically by the exit of the unique recommender (for judges with only one) or by the last active recommender (for judges with two)? Figures A.2 through A.5 address this question. Across all specifications, performance declines in both cases, with slightly more pronounced effects when the departing senator is the judge's sole recommender.

A further question is whether these effects are homogeneous across judges with different characteristics. To examine this, we introduce interaction terms into Equation (1) and assess heterogeneity in the results from Table 1 along four key dimensions. First, we investigate the role of partisanship. Since senators' involvement in the nomination process can vary widely across cases (Domnarski, 2009), it is possible that Democratic and Republican judges respond differently to the loss of their recommending senators. However, as shown in Figures A.6 and A.7, the decline in judicial productivity appears across judges appointed by both Democratic and Republican presidents, with somewhat larger

effects on case backlog for Democratic appointees.

Second, we examine whether professional competence moderates the impact of losing political sponsors. To assess this, we link each judge to the rating they received from the American Bar Association (ABA) at the time of their appointment and divide the sample into two groups: those rated "Not Qualified" or "Qualified" (low-qualified), and those rated "Well Qualified" or "Very Well Qualified" (high-qualified). As shown in Figures A.8 and A.9, the effects of recommender exit are present for both groups, suggesting that professional qualifications do not shield judges from the consequences of losing political support.

Third, we examine whether the effects vary by judicial tenure at the start of the 12-year observation window. Judges are divided into three groups based on tenure quartiles: newly appointed judges (1 year), early-career judges (2–3 years), and longer-serving judges (4+ years).[13] Figures A.10 and A.11 show that the effects of recommender exit are consistently present across all tenure groups, suggesting that political sponsorship influences judicial performance throughout the course of a judge's career.

Finally, we examine whether the impact differs depending on the reason for the senator's departure. We distinguish between unexpected exits – due to death in office or electoral defeat – and voluntary exits, such as retirement or resignation. Figures A.12 and A.13 present the results. While the estimated effects are somewhat larger when the departure is unexpected, a decline in productivity appears even in cases of voluntary exit.

Taken together, these heterogeneity analyses show that the consequences of senatorial exits are broad-based, affecting judges regardless of the number of recommenders, their partisanship, professional qualifications, tenure, or the nature of their recommender's departure from Congress.

5.3. Robustness Checks. We conduct additional analyses to assess the robustness of the results presented in Table 1. First, we test whether the findings hold under a more fine-grained method of identifying political recommenders. Instead of assuming that each judge was recommended by all home-state senators who shared the president's party

[13]These groups are constructed by dividing judges into quartiles based on their tenure at the beginning of the 12-year window, with 1 year of tenure corresponding to the bottom two quartiles.

affiliation at the time of nomination, we rely on explicit endorsements made during the judge's confirmation hearing. Because not all hearing transcripts are publicly available, we can apply this stricter definition to 56% of the judges in our sample, while retaining the original measure for the remainder. Re-estimating Equation (1) using this alternative definition yields results that are virtually unchanged, as shown in Table A.2.

Second, we examine the sensitivity of our inference to an alternative clustering strategy. While our baseline specification clusters standard errors at the judge level, we re-estimate the model clustering at the level of the recommending senator (or senator pair) – that is, the level at which treatment is assigned. As reported in Table A.3, this alternative approach does not affect the statistical significance of our estimates.

5.4. Alternative Explanation. We examine and rule out an alternative explanation for the observed drop in judicial productivity. Specifically, we test whether the effects are driven not by the exit of the recommending senator, but rather by a broader partisan alignment between judges and the party that nominated them. To assess this, we estimate differential effects based on the party affiliation of the senator who replaces the recommender and present the results in Figures A.14 and A.15. The coefficients confirm that it is the departure of the specific recommender – rather than changes in partisan alignment – that drives the observed decline in productivity.

6. MECHANISMS

In this section, we examine whether – consistent with our hypothesis – the decline in judicial productivity following the departure of the recommending senator is driven by an erosion of career prospects. Specifically, we posit that senators may also play an active role in promoting district judges to the appellate courts, thereby enhancing a judge's chances of career advancement while their recommenders remain in office. If this is the case, the departure of recommending senators could reduce the incentives for continued effort by weakening judges' promotion prospects. To test this mechanism, we estimate Equation (1) using as the dependent variable an indicator for whether judge i is promoted

to an appellate court in a given year.

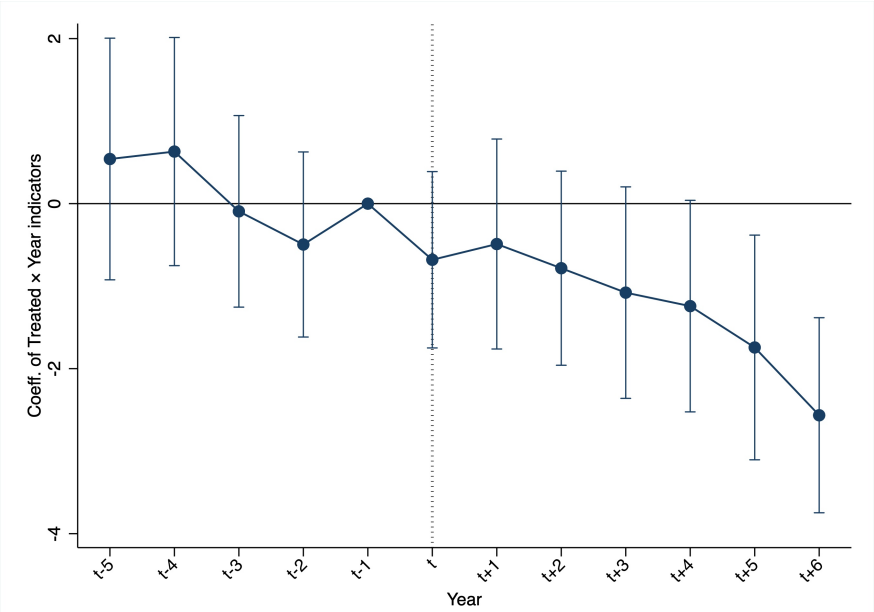
Consistent with this hypothesis, the coefficients reported in Table 2 show that the exit of a recommending senator significantly reduces judges' likelihood of promotion. Given the rarity of such promotions, this finding suggests that advancement to the appellate bench becomes nearly unattainable without the continued support of a senatorial sponsor. Notably, as shown in column (2), the effect is concentrated in years when the judge shares partisanship with the sitting president – periods in which the judge would be best positioned to benefit from their recommender's backing. To complement these results, Figure 3 presents event-study estimates from Equation (2), while Figure 4 shows heterogeneous effects by the party of the incumbent president. The findings reinforce the results from Table 2, indicating that the negative effects are concentrated in years when judges and presidents are politically aligned. In all cases, we find no evidence of anticipatory effects prior to the senator's departure, consistent with the parallel trends assumption.

Table 2: Effect of Senator's Exit on Judge's Promotion

	Promoted	
	(1)	(2)
Treated × Post	-1.17***	-0.29
	(0.42)	(0.54)
Treated × Post × Same-party president		-1.68**
		(0.79)
Observations	42,389	42,389
Mean of dependent variable,		
Treated = 1 & Post = 0	0.51	0.51
Judge × Event FEs	Y	Y
Time × Event FEs	Y	Y

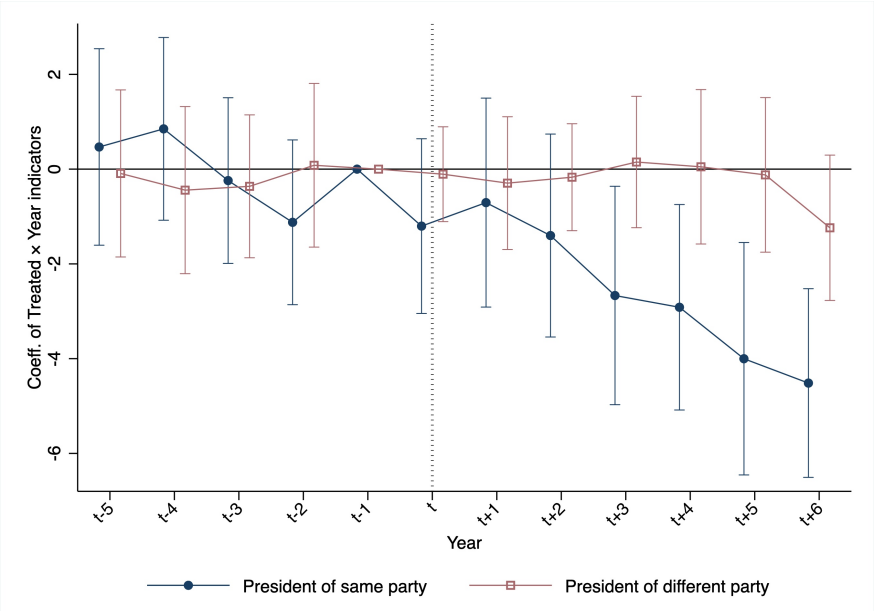
Notes: The unit of observation is judge × year × senator exit wave. The dependent variable is an indicator equal to 1 if judge i is promoted to an upper-level court in a given year (multiplied by 100). Treated is an indicator equal to 1 if the judge's recommender exits the Senate in the event wave, and 0 otherwise. Post is an indicator equal to 1 starting in the event year. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Standard errors are clustered at the judge level. *** p<0.01, ** p<0.05, * p<0.1.

Figure 3: Effect of Senator's Exit on Judge's Promotion – Dynamic Effects



Notes: The figure reports estimates from Equation (2), an event-study specification that augments Equation (1) by allowing the estimated difference between treated and control judges to vary by year relative to the one before the senator's exit. The dependent variable is an indicator equal to 1 if judge i is promoted to an upper-level court in a given year (multiplied by 100). All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure 4: Effect of Senator's Exit on Judge's Promotion, by President's Party



Notes: The figure reports estimates from equation (2), interacted with an indicator for whether the incumbent president is of the same party as judge i (blue dots) or of a different party (red squares). The dependent variable is an indicator equal to 1 if judge i is promoted to an upper-level court in a given year (multiplied by 100). All regressions include judge $\times$ event and year $\times$ event fixed effects. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

7. Conclusion

We provide the first within-judge estimates of the effects of political appointments on judicial performance. Our empirical setting is the U.S. federal judiciary, where district court judges are appointed through presidential nomination based on recommendations from home-state senators. Exploiting the exit of a judge's recommender from Congress, we show that the departure of political sponsors significantly reduces both the quantity and quality of judicial output: judges author fewer opinions, which are shorter and contain fewer citations, and they accumulate a larger backlog of pending civil cases.

The key causal mechanism underlying this effect is an erosion of career incentives. Using an additional set of difference-in-differences estimates, we show that the loss of a recommending senator significantly reduces a judge's likelihood of promotion. Consistent with the political appointment system that governs the federal judiciary – and many other federal agencies – this effect is concentrated in years when judges share partisan affiliation with the sitting president and are thus best positioned to benefit from their senatorial sponsors' continued support.

These findings contribute to ongoing debates in institutional analysis, political economy, and organizational economics. Within the empirical literature on political appointments, our study is among the few to examine how political sponsors influence both initial appointments and subsequent promotions. In this context, our results complement those of Voth and Xu (2019), who show that patronage-based promotions in the British Royal Navy improved performance when patrons prioritized merit over kinship. Leveraging a within-judge research design, we demonstrate that political sponsors may also undermine the long-term productivity of their appointees once the underlying political ties are severed.

This study also contributes to the broader debate on judicial appointment systems and their implications for institutional effectiveness. While much of the existing literature has focused on the biases introduced by judicial elections, the role of political nominations has only recently begun to receive systematic empirical attention. In this emerging line of work, this paper is the first to provide within-judge estimates of the effects of po-

litical discretion in hiring, while holding constant the institutional environment in which judges operate. This approach offers a promising path for uncovering the roots of judicial inefficiency—factors that remain persistent barriers to political stability and economic development worldwide (Acemoglu and Johnson, 2005; Chemin, 2020; Persson et al., 1997).

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ADDITIONAL TABLES AND FIGURES

Table A.1: Summary Statistics

	Mean	Stand. Dev.	Min	Max
Panel A. Judge-Year-Event Level				
Opinions Authored	5.70	7.92	0	90
Words in Opinions	3,644	3,232	0	62,325
Citations Received	4.34	4.56	0	105
Citations Made	13.40	11.64	0	108
Civil Cases Pending	11.97	130.4	0	7,799
Tenure at Year t	6.75	5.81	1	46
Promoted at Year t (x 100)	0.74	8.58	0	100
Same-Party President	0.61	0.49	0	1
	Mean	Stand. Dev.	Min	Max
Panel B. Judge Level				
Recommenders at Appointment	1.47	0.50	1	2
Total Tenure	9.29	7.03	1	46
Promoted	0.06	0.24	0	1
Recommenders at Promotion	1.36	0.48	1	2
Tenure at Promotion	7.14	4.33	1	21
Party of Appointment				
Democratic	0.49	0.50	0	1
Republican	0.49	0.50	0	1

Notes: In Panel A, statistics are computed at the judge-year-event level, covering all observations included in our sample as described in Sections 3.3 and 4. In Panel B, statistics are computed at the judge level.

Table A.2: Robustness: Alternative Measure of Recommenders

	Judicial Opinions				
	Total authored	Number of words	Citations received	Citations made	Civil cases pending
	(1)	(2)	(3)	(4)	(5)
Treated × Post	-0.19***	-0.15***	-0.07	-0.17***	1.22**
	(0.07)	(0.04)	(0.05)	(0.04)	(0.53)
Observations	32,161	32,161	30,800	31,847	9,085
Mean of dep. var., Treated = 1 & Post = 0	4.91	3445.79	4.87	11.91	5.12
Judge × Event FEs	Y	Y	Y	Y	Y
Year × Event FEs	Y	Y	Y	Y	Y

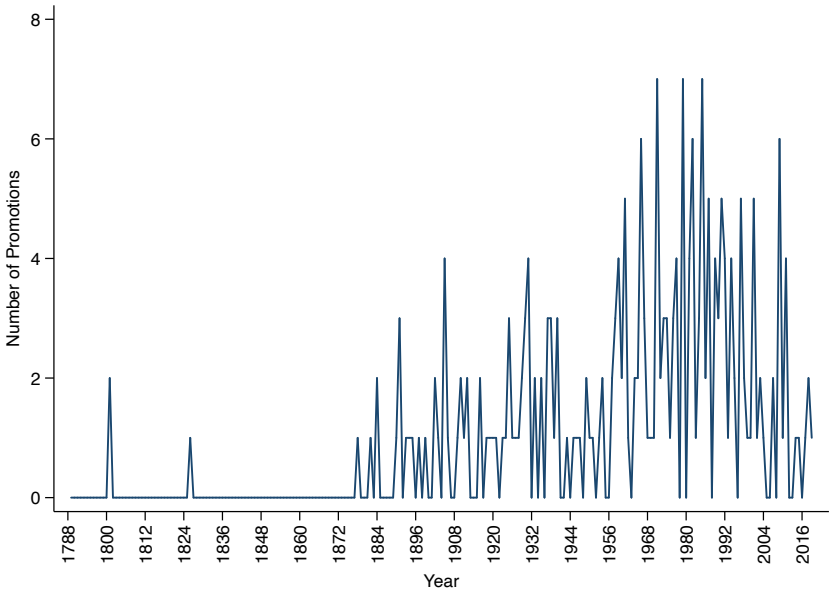
Notes: All coefficients are estimated using Poisson regressions. The unit of observation is judge × year × senator exit wave. The dependent variables in columns (2) to (4) are averaged over the opinions issued by judge *i* in a given year. Treated is a dummy that is 1 if the judge's recommender exits the Senate in the event wave, and 0 otherwise. Post is a dummy that is 1 if the year is after the exit year of interest. Standard errors are clustered at the judge level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.3: Robustness: SEs Clustered by Recommenders Pair

	Judicial Opinions				
	Total authored	Number of words	Citations received	Citations made	Civil cases pending
	(1)	(2)	(3)	(4)	(5)
Treated × Post	-0.21***	-0.16***	-0.07	-0.19***	1.07**
	(0.07)	(0.05)	(0.05)	(0.05)	(0.50)
Observations	33,338	33,338	31,961	33,021	9,171
Mean of dep. var., Treated = 1 & Post = 0	4.91	3431.44	4.85	11.94	5.55
Judge × Event FEs	Y	Y	Y	Y	Y
Year × Event FEs	Y	Y	Y	Y	Y

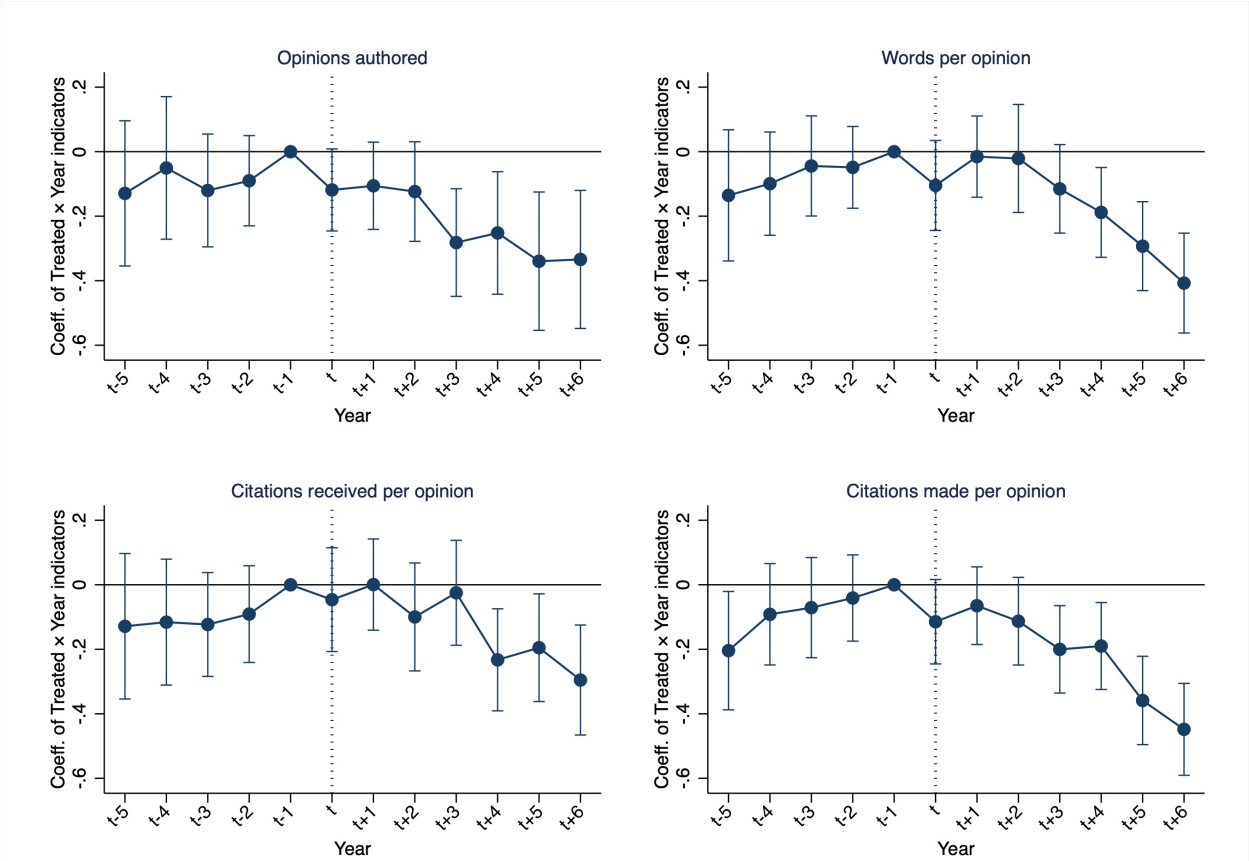
Notes: All coefficients are estimated using Poisson regressions. The unit of observation is judge × year × senator exit wave. The dependent variables in columns (2) to (4) are averaged over the opinions issued by judge *i* in a given year. Treated is a dummy that is 1 if the judge's recommender exits the Senate in the event wave, and 0 otherwise. Post is a dummy that is 1 if the year is after the exit year of interest. Standard errors are clustered at the recommending senators pair level. *** p<0.01, ** p<0.05, * p<0.1.

Figure A.1: Promotions of District Court Judges, 1789-2019



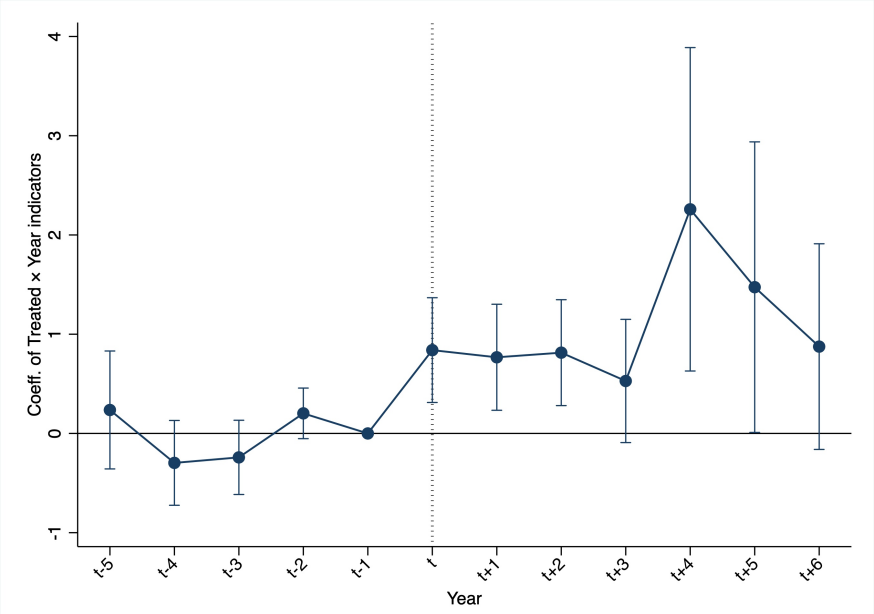
Notes: The figure reports the number of federal district court judges in the sample (as described in Section 3.3) who were promoted to an upper-level court between 1789 and 2019.

Figure A.2: Effect of Senator's Exit on Judicial Opinions
Unique Recommenders' Exits Only



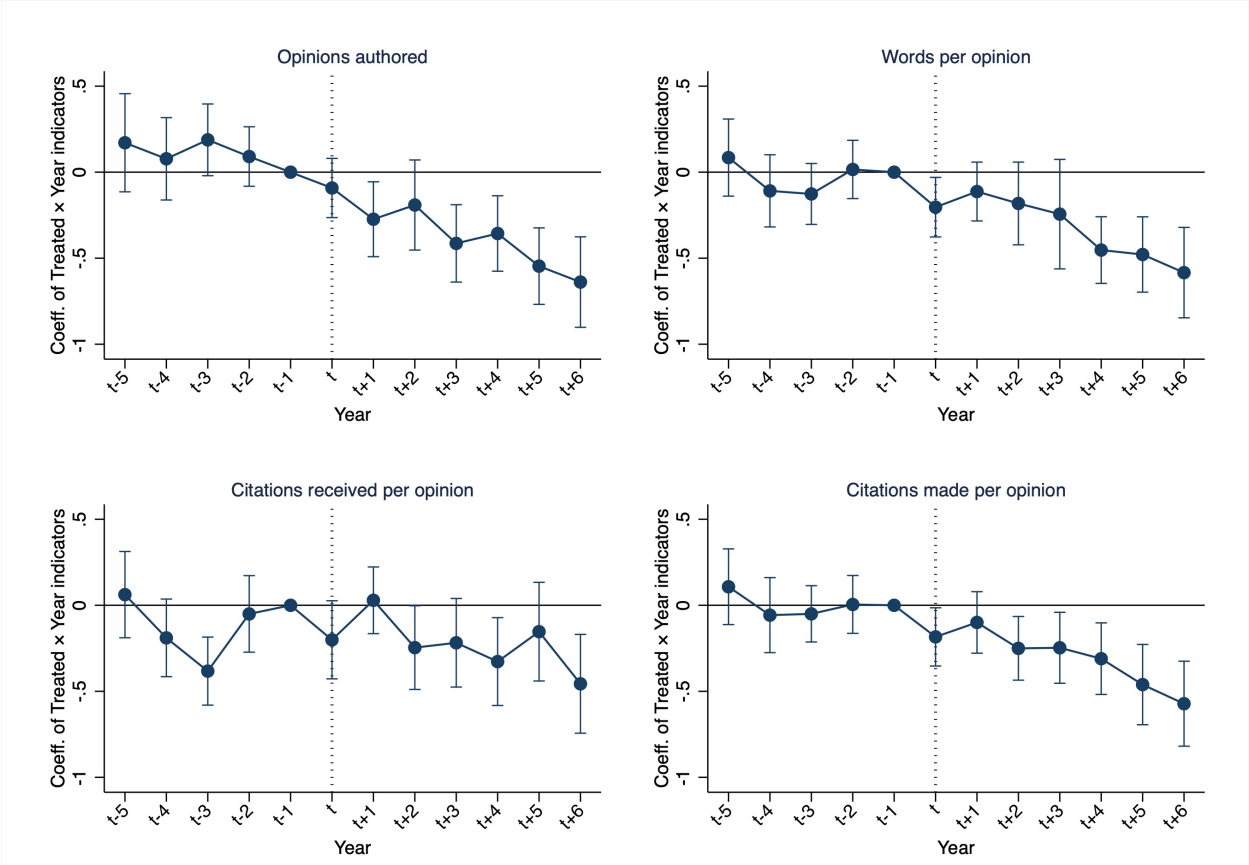
Notes: The figure reports the estimates from equation (2), which corresponds to an augmented version of equation (1), where the estimated difference between treated and control judges is allowed to vary for each year around the senator exit wave. The dependent variables are the number of opinions authored by judge i in each year (top left); the average number of words in the opinions authored by judge i in each year (top right); the average number of citations received by opinions authored by judge i in each year (bottom left); and the average number of citations included in the opinions authored by judge i in each year (bottom right). All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.3: Effect of Senator's Exit on Civil Cases Backlog
Unique Recommenders' Exits Only



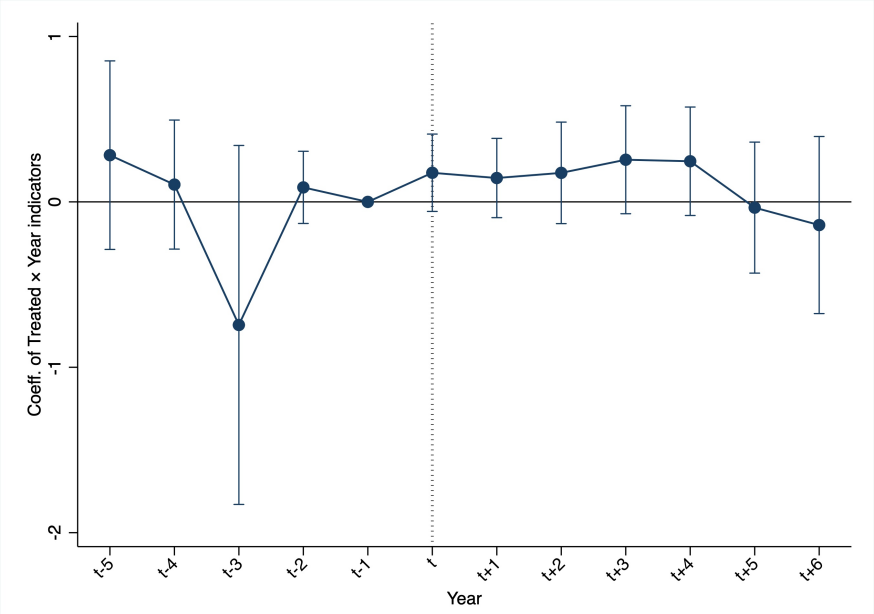
Notes: The figure reports the estimates from equation (2), which corresponds to an augmented version of equation (1), where the estimated difference between treated and control judges is allowed to vary for each year around the senator exit wave. The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.4: Effect of Senator's Exit on Judicial Opinions
Second Recommenders' Exits Only



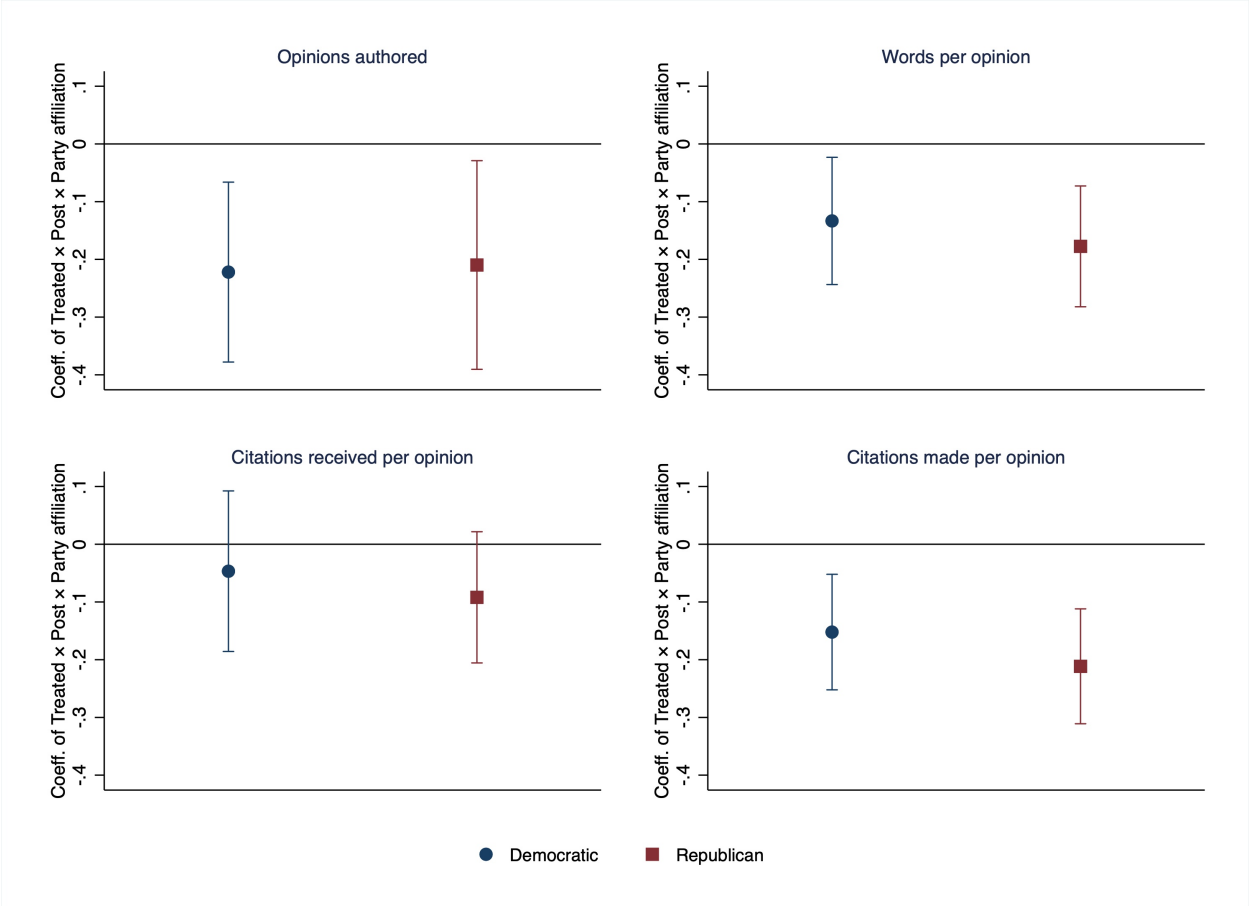
Notes: The figure reports the estimates from equation (2), which corresponds to an augmented version of equation (1), where the estimated difference between treated and control judges is allowed to vary for each year around the senator exit wave. The dependent variables are the number of opinions authored by judge i in a given year (top left); the average number of words in the opinions authored by judge i in a given year (top right); the average number of forward citations for the opinions authored by judge i in a given year (bottom left); and the average number of backward citations for the opinions authored by judge i in a given year (bottom right). All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.5: Effect of Senator's Exit on Civil Cases Backlog, Second Recommenders' Exits Only



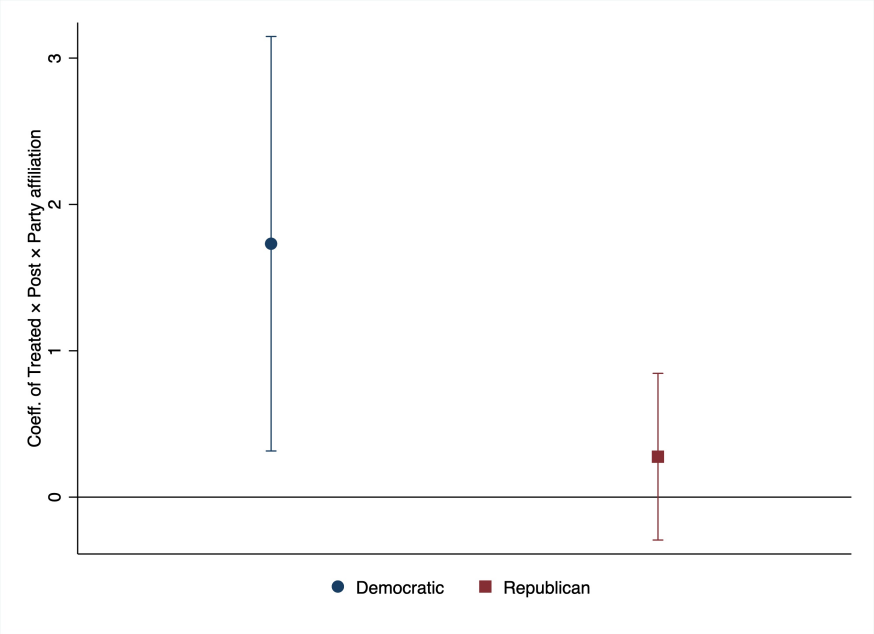
Notes: The figure reports the estimates from equation (2), which corresponds to an augmented version of equation (1), where the estimated difference between treated and control judges is allowed to vary for each year around the senator exit wave. The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge $\times$ event and year $\times$ event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.6: Effect of Senator's Exit on Judicial Opinions, Heterogeneity by Judge's Party



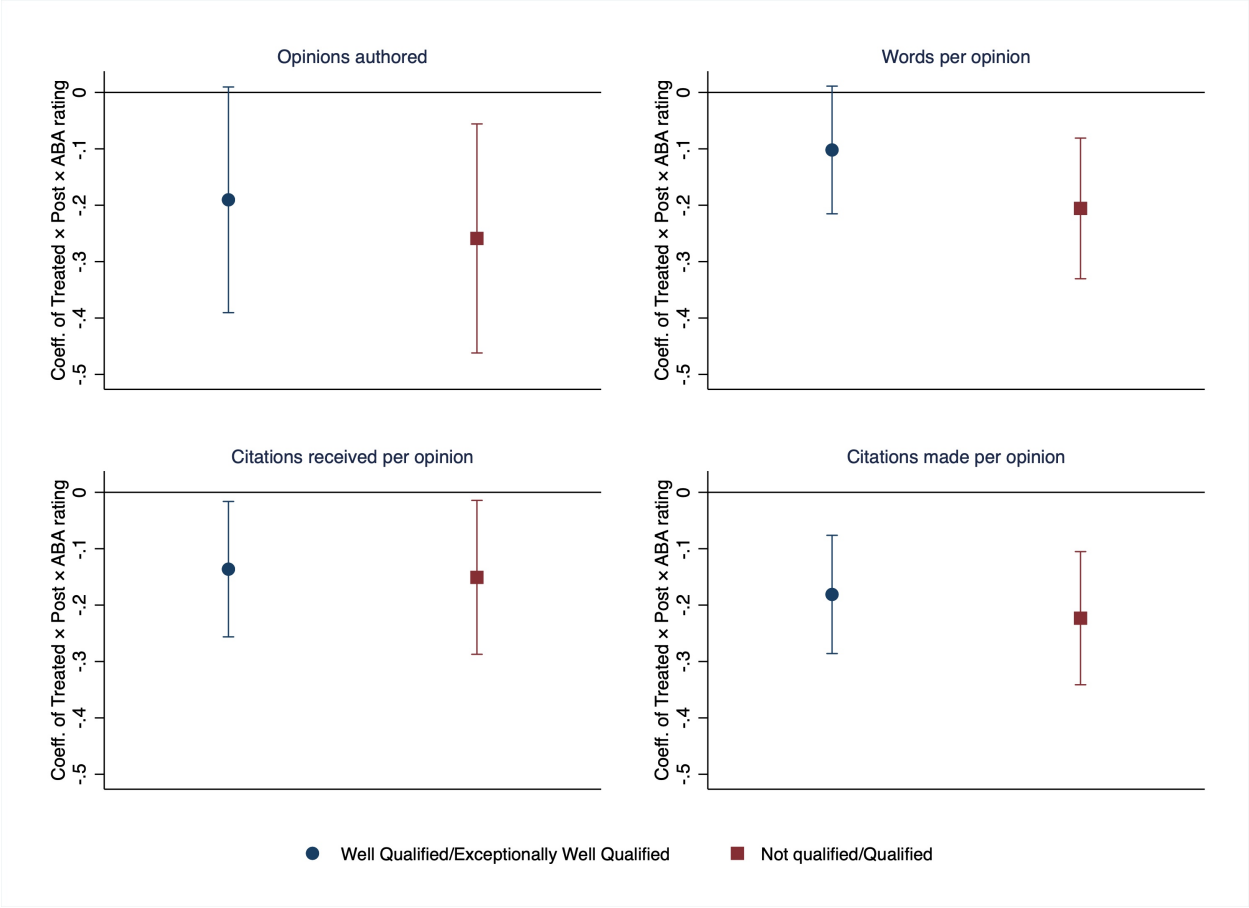
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge i is Democratic (blue dot) or Republican (red square). The dependent variables are the number of opinions authored by judge i in each year (top left); the average number of words in the opinions authored by judge i in each year (top right); the average number of citations received by the opinions authored by judge i in each year (bottom left); and the average number of citations made by the opinions authored by judge i in each year (bottom right). All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.7: Effect of Senator's Exit on Civil Cases Backlog, Heterogeneity by Judge's Party



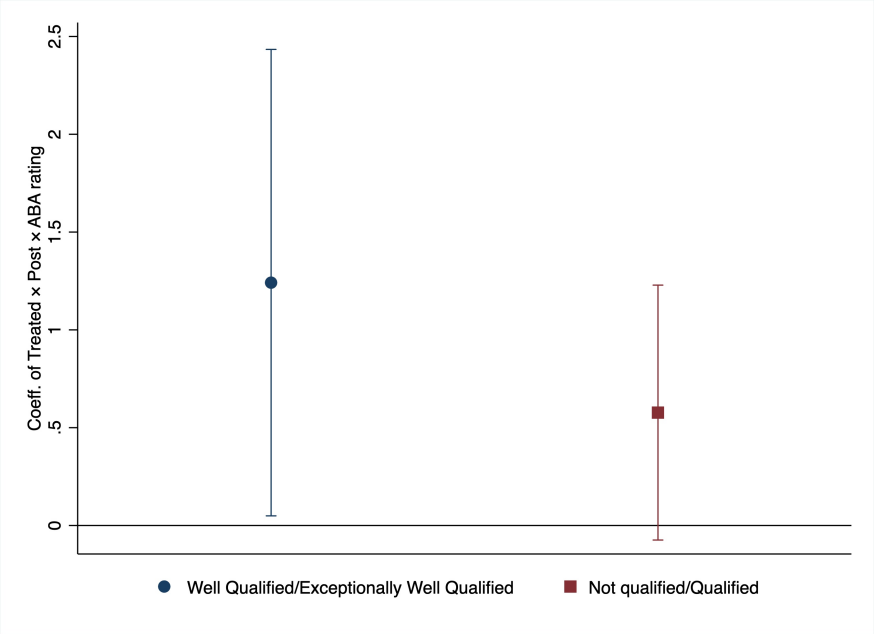
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge i is Democratic (blue dot) or Republican (red square). The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.8: Effect of Senator's Exit on Judicial Opinions,
Heterogeneity by Judge's Qualification



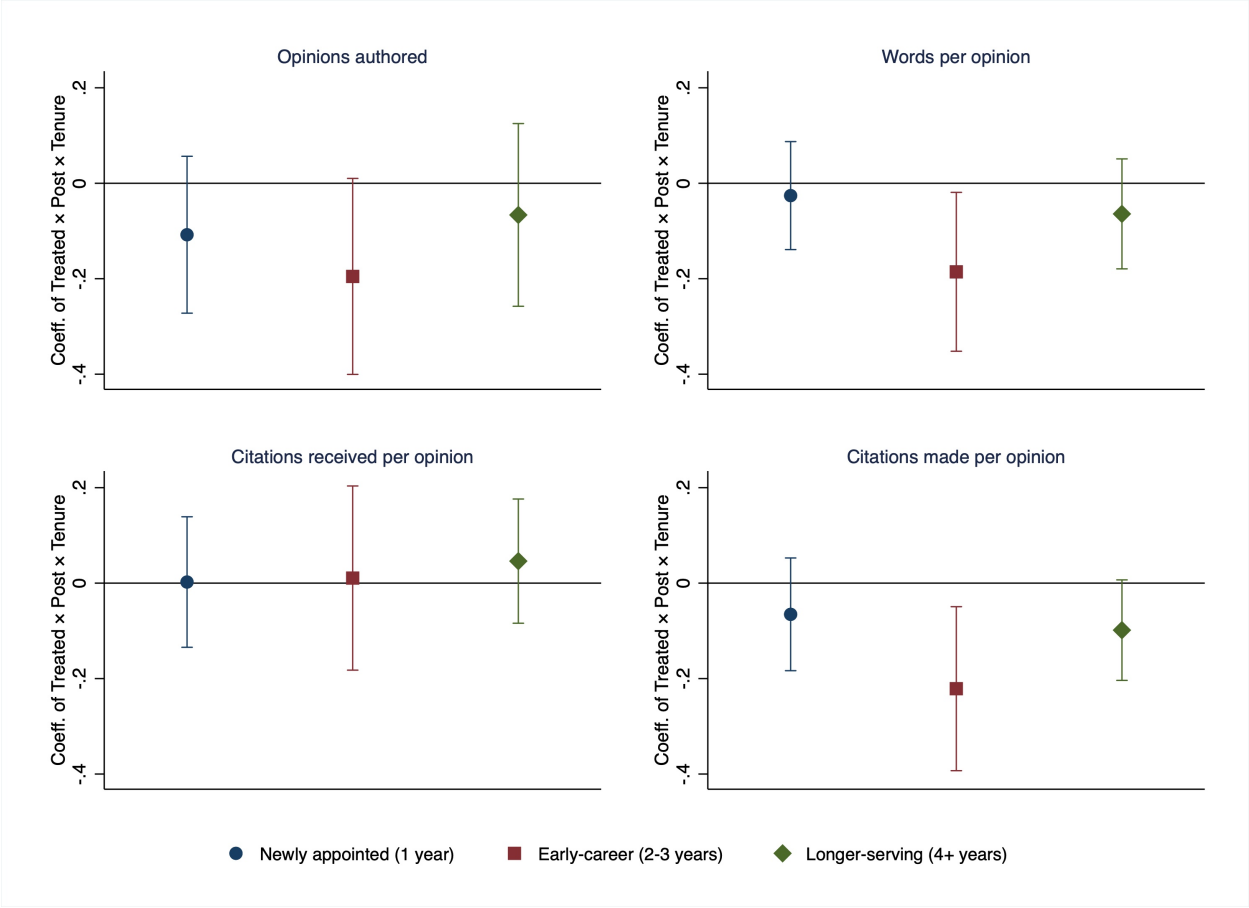
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge *i* received a rating of Well qualified or Exceptionally well qualified (blue dot) or Not qualified or qualified (red square) by the American Bar Association. The dependent variables are the number of opinions authored by judge *i* in each year (top left); the average number of words in the opinions authored by judge *i* in each year (top right); the average number of citations received by the opinions authored by judge *i* in a given year (bottom left); and the average number of citations made by the opinions authored by judge *i* in a given year (bottom right). All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.9: Effect of Senator's Exit on Civil Cases Backlog, Heterogeneity by Judge's Qualification



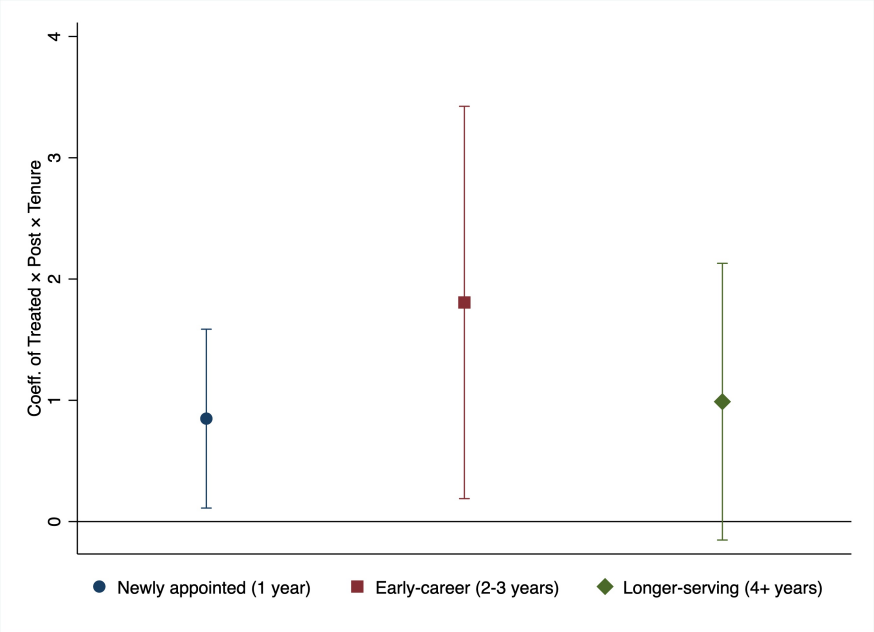
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge i received a rating of Well qualified or Exceptionally well qualified (blue dot) or Not qualified or qualified (red square) by the American Bar Association. The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.10: Effect of Senator's Exit on Judicial Opinions, Heterogeneity by Judge's Tenure



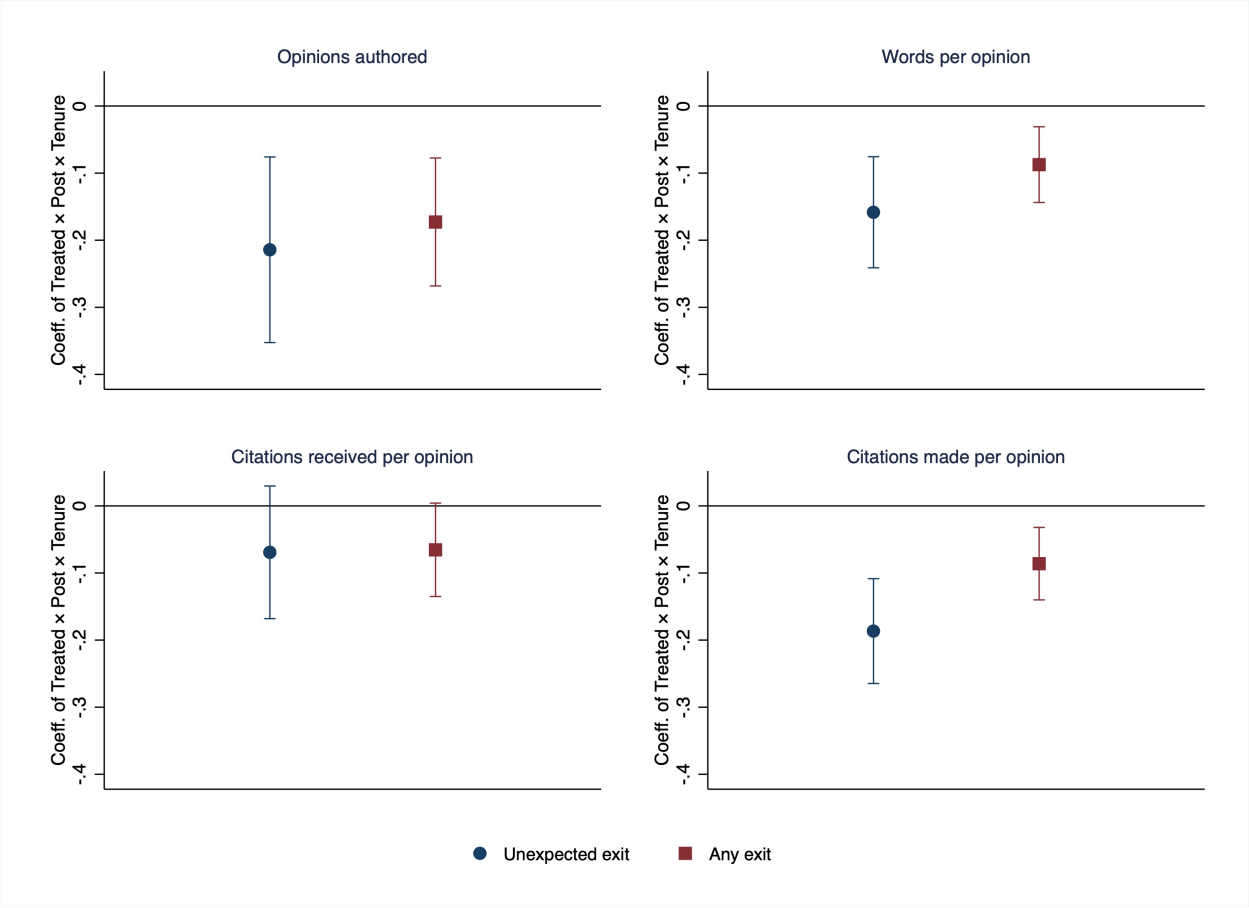
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge i, at the beginning of the event time window, had been in office for 1 year (blue dot), 2-3 years (red square), or at least 4 years (green diamond). The dependent variables are the number of opinions authored by judge i in a given year (top left); the average number of words in the opinions authored by judge i in a given year (top right); the average number of citations received by the opinions authored by judge i in a given year (bottom left); and the average number of citations made by the opinions authored by judge i in a given year (bottom right). All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.11: Effect of Senator's Exit on Civil Cases Backlog, Heterogeneity by Judge's Tenure



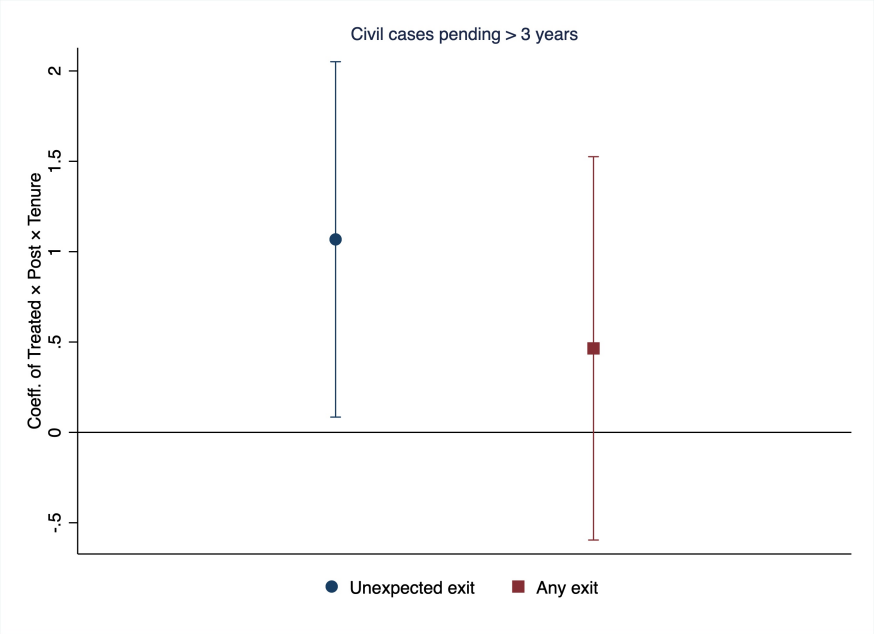
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether judge i, at the beginning of the event time window, had been in office for 1 year (blue dot), 2-3 years (red square), or at least 4 years (green diamond). The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.12: Effect of Senator's Exit on Judicial Opinions, Heterogeneity by Senator's Reason of Exit



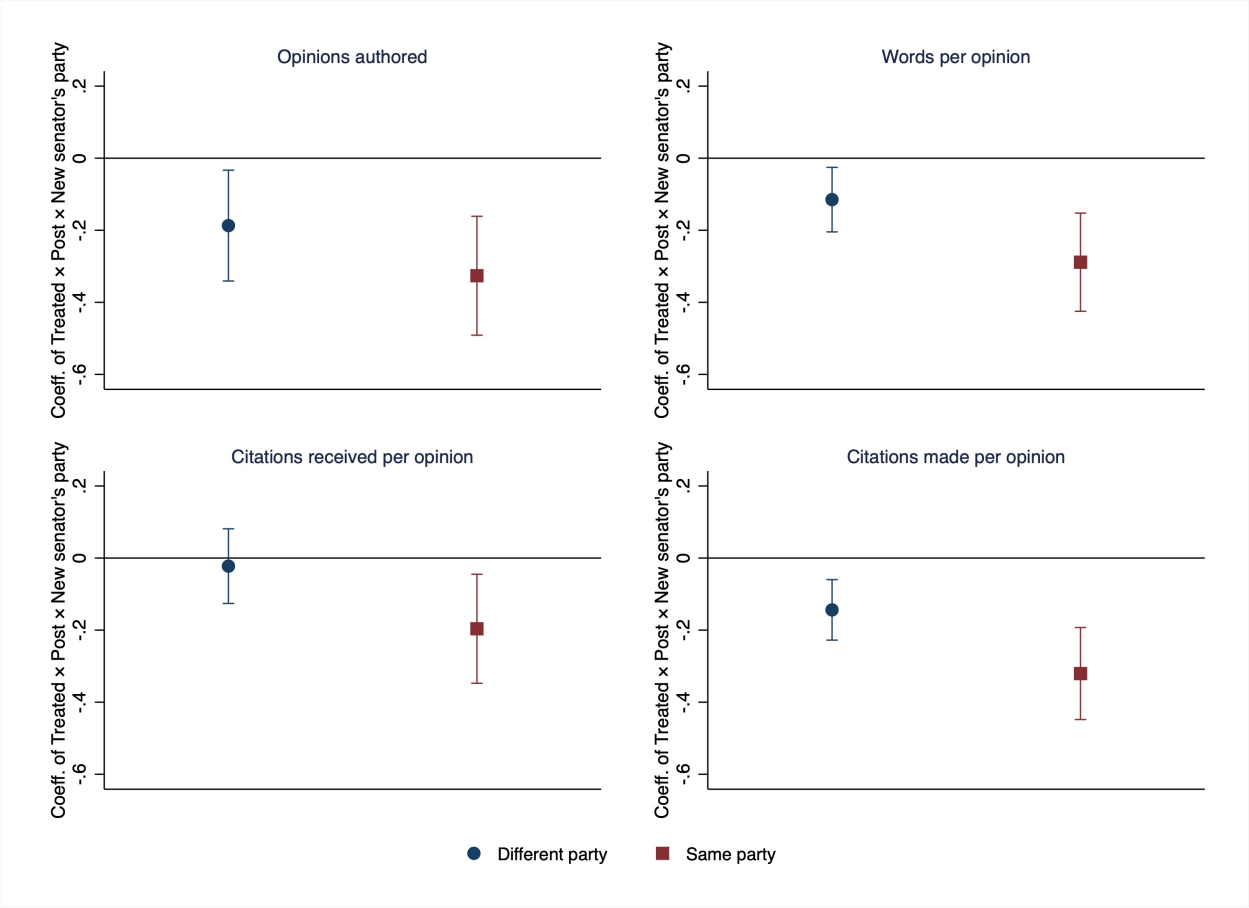
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* (1) considering only senators' exits that occurred for unexpected reasons (i.e., loss at primary or general election, or death in office) (blue dot) or considering all senators' exits (red square). The dependent variables are the number of opinions authored by judge i in a given year (top left); the average number of words in the opinions authored by judge i in a given year (top right); the average number of citations received by the opinions authored by judge i in a given year (bottom left); and the average number of citations made by the opinions authored by judge i in a given year (bottom right). All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.13: Effect of Senator's Exit on Civil Cases Backlog, Heterogeneity by Senator's Reason of Exit



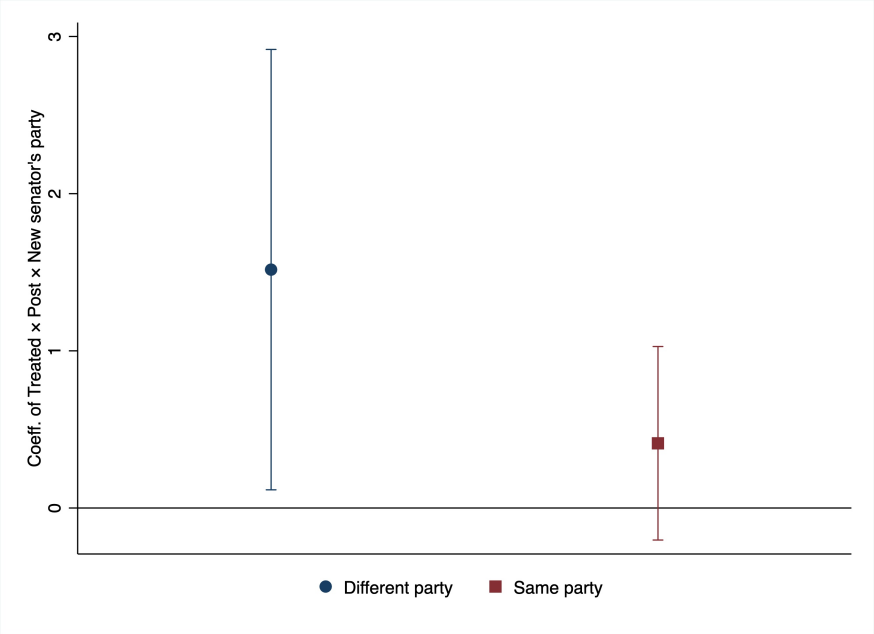
Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* (1) considering only senators' exits that occurred for unexpected reasons (i.e., loss at primary or general election, or death in office) (blue dot) or considering all senators' exits (red square). The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.14: Effect of Senator's Exit on Judicial Opinions, Heterogeneity by Party of Replacing Senator



Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether the senator replacing the one exiting at time t is of a different party (blue dot) or of the same party (red square) by the American Bar Association. The dependent variables are the number of opinions authored by judge i in a given year (top left); the average number of words in the opinions authored by judge i in a given year (top right); the average number of citations received by the opinions authored by judge i in a given year (bottom left); and the average number of citations made by the opinions authored by judge i in a given year (bottom right). All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.

Figure A.15: Effect of Senator's Exit on Civil Cases Backlog, Heterogeneity by Party of Replacing Senator



Notes: The figure reports the estimates of the interaction between the main coefficient *Treated* × *Post* of equation (1) and an indicator for whether the senator replacing the one exiting at time t is of a different party (blue dot) or of the same party (red square) by the American Bar Association. The dependent variable is the number of civil cases assigned to judge i which at time t have been pending for more than three years. All regressions include judge × event and year × event fixed effects and are estimated using Poisson regressions. Vertical lines are 95% confidence intervals based on robust standard errors clustered at the judge level.