JUDGES JUDGING JUDGES:
PARTISANSHIP AND POLITICS IN THE FEDERAL CIRCUIT COURTS OF APPEALS

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ABSTRACT

We examine how politicization and polarization influence judicial review within U.S. Federal appellate courts. Analyzing over 400,000 cases from 1985 to 2020, we find that judges' political alignment or misalignment with trial judges increasingly affect their decisions, particularly in the last two decades. This trend is significant in precedential cases: panels of Democratic judges are 6.9 percentage points more likely to reverse Republican trial judges compared to Democratic ones, whereas Republican panels are 3.6 percentage points less likely to reverse fellow Republican judges. This effect persists across ideological and non-ideological cases and even among judges appointed before 2000.

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I. Introduction

Politicization and polarization are increasingly prevalent across many domains of decision-making in the United States and globally (Kastellac 2011, Coffey and Joseph 2013, Epstein, Landes, and Posner 2013, Pew Research Center 2014, Gentzkow 2016, Allcott et al. 2020, Boxell, Gentzkow, and Shapiro 2021, Duchin et al. 2023, and Cohen 2024). We use the term politicization to refer to the impact of political affiliation on decisions, and polarization to refer to divergence of viewpoints and its impact on decisions. These phenomena are particularly evident in the judiciary, where ideological divides have seemingly intensified. The recent shift toward a conservative supermajority in the Supreme Court and a spate of contentious decisions – for example, on abortion, presidential immunity, and environmental law – has ignited a debate on this trend. However, these phenomena are not confined to the Supreme Court. The Federal Circuit Courts of Appeals also play a crucial role, often ruling on politically charged issues like limiting federal regulatory power or upholding restrictive voting laws.

In this paper, we focus on the Circuit Courts of Appeals, which given their significant impact on the judicial landscape warrant examination on their own. Unlike the Supreme Court, which selectively chooses 70 to 80 cases each year, the Circuit Courts have limited discretion and handle a broad spectrum of cases (tens of thousands annually).

Our contribution is twofold. First, we use a feature of the Federal court system that has not previously received attention, namely whether reversal decisions in the Federal Circuit Courts of Appeals are influenced by political differences among appellate panel judges and their political alignment (or misalignment) with the trial judge who originally decided the case. We find that Federal judges' decisions do, in fact, show evidence of polarization. While present throughout the period we study, it is stronger post-2000. Second, increased alignment between appellate and trial judges could be due to either ideology or politics. We distinguish between the two by examining ideological and non-ideological cases separately; presumably, if these phenomena are based on ideological motivations, we would see stronger effects in the former cases. We show that these phenomena are present in both types of cases, suggesting at least in part we are observing an increase in political polarization.

The U.S. federal court system is the fundamental pillar in the United States' system for enforcing and interpreting Federal laws. Federal courts address civil matters, such as breach of contract and discrimination; bankruptcy; federal crimes; international trade; and regulatory matters. Its decisions

shape the economic, regulatory, and social environment in the U.S. Examples of significant cases include antitrust cases such as *Microsoft* and *ATT* and Constitutional cases such as *Brown vs. Board of Education*. The Circuit Courts consider appeals from Federal trial courts and Federal agencies hence cases that are especially difficult or important. Thus, the politicization and polarization of the court system can impact its consistency, predictability, and effectiveness through, for instance, shifting regulatory interpretations and enforcement.

We draw upon the prior literature on the politicization of the judiciary in shaping our empirical strategy. The literature on the Circuit Courts has established that the political composition of judicial panels affects their reversal rates. Songer and Davis (1990), who focus on cases involving specific issues (labor relations, criminal appeals, First Amendment, and civil rights) and time periods, find significant differences in how judges vote based on their political affiliations. Epstein, Landes, and Posner (2013) also examine voting behavior of appellate panels and find evidence of significant differences in the reversal rates between panels with more Democratic judges and panels with more Republican judges. This finding is based on the dataset assembled by Sunstein et. al (2004, 2006), which encompasses a selection of published cases. Kastellec (2011) confirms significant variation in the political composition of panels over time, and also finds modest differences in voting behavior based on political composition. Notably, he finds these differences becoming more pronounced over time. Cohen (2024) shows that the associations identified in the literature between the political affiliations of Circuit Court judges and their decision making exists in a much wider variety of cases than was previously thought. Berdejo and Chen (2017) show the role of election cycles in decision-making.

A parallel literature has examined the role of gender in the Circuit Courts. Ash, Chen, and Ornaghi (2024) use text analysis to examine judges' gender slant and find that their measure predicts judges' likelihood of reversing decisions by female trial judges. Battaglini, Harris, and Patacchini (2022) find that judges exposed to more female colleagues are likely to hire more female law clerks.

Another significant strand of the literature has examined these factors in the Supreme Court. For example, this literature has found that Democratic and Republican justices have increasingly tended to concentrate on opposing sides of divided cases (Epstein et al. 2015, Devins and Baum 2016, Hasen 2019). While Supreme Court decisions tend to be very important decisions, the Supreme Court considers very few cases annually (approximately 70) and has only nine justices. Thus, we

focus instead on the Circuit Courts, where we are able to examine thousands of decisions made each year by hundreds of judges.

There is also a literature, which investigates the hierarchical relationship between appellate and trial courts in the Federal system (e.g., Boyd 2015). In general, the literature does not find a significant role for ideology but does find that strategic considerations with respect to the overall ideological composition of a Circuit (Kim 2009) and the makeup of individual panels (Revesz 1997), as well as collegiality (Kastellec 2011), can play a role in how judges render their decisions.

These findings underpin our approach and motivate our contribution. First, we look at the effect of both the political composition of the appellate panel (which we call politicization) and its interaction with the political affiliation of the trial court judge (which we call polarization). This allows us to focus on polarization in addition to politicization. To the best of our knowledge, this has not been examined in the literature. Second, focusing on Circuit Courts, we use an extended time period, spanning from 1985 to 2020, and, third, we examine the universe of both published and unpublished cases. In the context of Federal Circuit Courts, published cases refer to decisions that are officially documented because they have precedential value, meaning they can be cited to develop case law and legal doctrine, influencing how laws are interpreted and applied. Unpublished cases, on the other hand, are not officially documented and tend to be more routine. The extended sample allows us to follow the same judges, panels, and panel-trial-court-judge combinations over time. In addition to avoiding issues that come with a selected sample, we are able to include fine-grained controls and fixed effects for possible confounds. For example, Circuit-by-year fixed effects allow us to control for the overall political composition of each Circuit over time and focus only on variation in panel composition within a given year. This allows us to partial out factors such as the time-varying political composition of each Circuit, which, as noted in Boyd (2015), can play a role. As a robustness checks, we also include appellate panel fixed effects (i.e., fixed effects for each unique three-judge panel) and trial court judge fixed effects, which allow us to control for any non-time varying panel or trial-judge covariates such as gender, race, personality, or the interplay of these characteristics on the panel and to focus just on the relationship between the political affiliations of the panel and the trial court judge. Third, in addition to controlling for the roles of gender and race through fixed effects, we examine the interaction of these with political affiliation (although we do not find significant heterogeneity on this dimension).

We proxy for the political affiliation of appellate panels and trial judges using the political party of the president who nominated them. We capture the polarization effect by the extent to which Circuit Court judges' decisions align with District Court judges of the same political affiliation, i.e., if Republican (Democratic) judges are more (less) likely to repeal a prior court decision if that decision was reached by a Democrat (Republican) judge. Therefore, we are interested both in (1) whether members of the appellate panels have been pushed further apart based on political affiliation, and (2) whether politics *per se* affects judicial decisions. In keeping with the literature, we treat assignment of District Court cases to appellate panels as random, i.e., judges in the relevant circuit are randomly assigned to a given case.

The literature has documented an increasing role of politics in the judiciary over the last several decades with the early 2000s viewed as one turning point. For example Sunstein, Schkade, and Ellman (2004) and Bartels (2009) highlight the example of Bush v. Gore in 2000 in the Supreme Court (see also Bartels 2015, Hasen 2019, and Kritzer 2022 and Binder and Maltzman 2009 on the increased use of the filibuster). Accordingly, we split our results into the pre- and post-2000 periods. (The Appendix provides evidence that this is a reasonable year in which to split the sample; however, our results are robust to splitting in other years that have been identified as possible turning points, e.g., in the mid-1990s.) We also split our results into published and unpublished decisions. While only a quarter or so of cases have published opinions, these cases are more significant and establish legal precedent setting, so present a more visible arena for polarization.

We find that the political affiliations of appellate panels have a significant impact on reversal rates of district court decisions. This effect is observed in both published and unpublished cases (although stronger in the former), and pre- and post-2000 (although stronger in the latter period). In published cases, post-2000, panels with two Republican judges and one Democratic judge (*RRD*) are 2.5 percentage points more likely to reverse a prior ruling by a Republican trial judge (6.7 and 13.4 percentage points for *RDD* and *DDD* panels respectively) than panels with only Republican judges (*RRR*). (For comparison, the baseline reversal rate is 37 percent.) For the same set of cases, we find that panels with Democratic judges are comparatively less likely to reverse trial court decisions from Democratic justices, attenuating by more than half the differences in reversal rates cited above. We do not however observe this interaction effect in unpublished or pre-2000 cases.

To shed light on whether these results are driven by increasing polarization among judges or the appointment of increasingly polarized judges, we split our results and focus on post-2000 cases

decided by judges nominated prior to 2000. We continue to find the polarization effect in this subset of cases, suggesting that judges are increasingly polarized (although, of course, not precluding increasing polarization in judicial appointments). Our results, also, do not distinguish between polarization of judicial philosophy and increasing affinity along political lines. To investigate, we split out results between ideological and non-ideological cases. We would expect political affinity to operate in both sets of cases, and political philosophy to be more pronounced in the former. We continue to find similar results in both subsets of cases, suggesting that, in part, our results are driven by political affinity.

Our results contribute to three strands of the literature. First, we contribute to the literature that has examined politicization of the judiciary at various levels, by extending results that have largely focused on published cases and cases selected by ideological salience to both published and unpublished cases and ideological and non-ideological cases. Second, we contribute to the literature that has examined the interaction between different levels of the federal court system by showing that politics enters this relationship and that it has become more polarized. Third, we contribute to the literature that has documented the impact of polarization on many aspects of decision-making. We show that polarization is affecting both explicitly ideological issues (e.g., abortion or voting rights) and also non-ideological decisions which, for example, affect the economic and regulatory environment.

The balance of the paper is organized as follows. Section II provides institutional context for the Circuit Courts. Section III discusses the construction of the dataset and provides descriptive summary statistics. Section IV presents our main results. Section V concludes.

II. Institutional Background

The U.S. federal court system has three branches: the District Courts, which are the trial courts, the Circuit Courts, which are the intermediate appeal courts, and the Supreme Court, which is the final level of appeal.

All Federal judges are selected by the President and confirmed by the Senate. Federal judges are appointed for life and may resign or retire earlier, and in rare cases, they can also be removed by impeachment. There are two types of judges who hear cases: active and senior judges. Active judges are judges who are currently serving full-time. Senior Judges are judges who retire but chose to

remain authorized to hear and decide cases. Senior judges have the same responsibilities as active judges, but they have a reduced caseload and more flexibility in how they manage their workload.

A. The Federal District Courts

There are 94 District Courts, and as of 2020, there were 670 authorized District Court judges. Most of the cases brought in the District Courts are heard by a single judge. Each final ruling by a District Court can be appealed to the United States Courts of Appeals for the judicial circuit in which the District Court is located (with the exception of cases involving patents and certain other specialized matters where there is a specialized intermediate appellate court). In rare cases, an appeal can be brought directly to the United States Supreme Court.

B. The Federal Circuit Courts of Appeals

There are 13 Federal Circuit Courts of Appeals and as of 2020, there were 180 active circuit court judges. Most cases heard in the Courts of Appeals are decided by a panel of three judges. A small number of cases are heard "en banc," which means that the cases are reviewed by all active judges in the specific Circuit. The panels consist of active and senior judges, and in some cases the panels also include a visiting judge from another Circuit or another District Court who is assigned temporarily, for a specific case or for a specific period of time.

When judges hear a case, they review all the relevant evidence and arguments presented to them by both sides. The judges' decisions are expected to be based on their interpretation of the law and the facts of the cases. In some cases, the decision of the panel is unanimous, meaning that all judges on the panel agree on the outcome. In other cases, the decision is split. In such cases, the judge who disagrees with the majority's decision may write a "dissent" explaining their disagreement. Once a panel reaches a decision, it can choose whether to publish its opinion. Published opinions are typically issued in cases that involve novel or significant legal issues or when there is a split among the judges on the panel. Published opinions are binding precedent for future cases in that Circuit. Unpublished opinions are typically issued in cases that are routine, involve well-settled legal principles, or do not raise novel legal issues (see Brown, Ford, Kubie, Marquez, Ostdiek, and Gluck 2022 for further discussion, and Lu and Chen 2024 for an analysis of politically motivated reasoning in the text of published cases). Unpublished opinions may be cited as persuasive authority in future cases but are not binding in future cases. Over the years the use of unpublished opinions has increased dramatically.

C. Random Assignment of Circuit Court Judges to Panels

The premise of many empirical studies (e.g., Tiller and Cross 1999; Sunstein et al 2004, 2006; Abramowicz and Stearns 2005; Sunstein and Miles 2009; Epstein et al. 2011; Kastellec 2011; and Chen and Sethi 2018), including this paper, is that judges and cases are randomly assigned to circuit court panels. Some recent studies that examined this assumption (Chilton and Levy 2015, Levy and Chilton 2015, Levy 2017, Fischman 2011) concluded that the assignment of judges to panels, even if not purely random, deviates from perfect randomness for technical reasons that are generally independent of political polarization. In Figure 1, discussed below, we confirm that, for our data, there is minimal evidence of nonrandom assignment.[1] This allows us to sidestep issues of selection and non-random assignment of judges. Furthermore, with more than four hundred thousand cases in our data, we are able to control for Circuit x year fixed effects, thus controlling for time-varying unobservables at the Circuit level. In looking at polarization, we can also include panel-level fixed effects, focusing just on the effect of the political affiliation of the District Court judge for a given three-judge appellate panel.

III. Data

A. Construction of the Data

The paper uses data compiled from three data sources.[2] The first is the Administrative Office of the U.S. Courts (AOC) Database, which allows users to obtain case and docket information from U.S. Federal Court documents. This database provides comprehensive information on large a portion of all cases handled by the various U.S. federal courts. We use it to obtain rich information about Circuit Court cases, including the Circuit Court where the case was heard, docket number, the District Court whose case is reviewed, dates, panel decision, case type, whether there was an *en banc* decision, etc.

Complementing this data, we use LexisNexis for information on the identities of the three panel judges and the lower court judge under review. LexisNexis has the world's largest electronic

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[1] Of course, we are unable to test whether appeals themselves are non-random since our data set includes only cases that were appealed from the trial court. At the same time, it is worth noting that at the time appeal decisions are made, the composition of the appellate panel would be unknown, only the political composition of the circuit, for which we control with Circuit x year fixed effects.

[2] Cohen (2024) uses an overlapping data set, which does not however contain information on the trial judges.

database for legal and public-records-related information. We also use this source to flag whether cases are ideological or not.

The third data source is the Federal Judicial Center (FJC) Biographical Directory of Federal Judges, which offers biographical information on all current and former US federal court judges with life tenure. We use this directory to add information about the judges beyond their names, information such as gender, race, age, tenure, nominating president, and date of nomination, for both Circuit and District Courts.

The merge between AOC Integrated Database and LexisNexis had a match success rate of about 50%. The 50% of cases appearing in AOC but not in LexisNexis are mostly cases where the appeal was terminated on procedural grounds, such as late filing, and for which, in most cases information on the case decision is missing.

The final data does not include cases from the Twelfth Circuit (the Federal Circuit), which differs from the other Circuits in that it exercises subject-matter jurisdiction rather than geographic jurisdictions. It also does not include cases from the District of Columbia circuit because for most of the cases we could not identify the trial court judge. Altogether, the final data contain about 440,000 appeals for the period 1985 to 2020, for which we identify the three members of the panel and the trial court judge.[3] We then merge this data with the FJC Biographical Directory of Federal Judges data using the names of judges obtained from LexisNexis. We also exclude from our analysis cases for which we do not have information about the decision made by the panel and cases that have not been terminated on the merits.

The final data contain about 400,000 circuit court decisions for which we have information on each of the three judges on the panel, information on the trial court judge and the outcome of the case.

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[3] The merge yields about 900,000 cases. After excluding Federal Circuit Court and D.C. Circuit Court cases, and keeping only cases for which termination was on the merits, we are left with 750,000 cases for the period 1985 until 2020. For 86% of these cases we have information on the three-panel judges (for 11% of the cases, we were unable to identify the name of any judge, and for the remaining 3% of the cases, we were able to identify lower or higher, including en-banc cases. Out of the cases, for which we have information on the identity of the three-judge panel, for 62% we also have information on the identity of the trial court judge. For another 9% of the cases, the only information that appears in the xml about the judge in the trial court is the name of the special court (special court such as Board of Immigration Appeals or Tax Court) in which the case was heard before reaching the Court of Appeals.

B. Variables of Interest and Descriptive Statistics

We measure politicization through the political affiliation of the appellate panel judges and the trial judge, and these in turn we measure by the political affiliation of the president who nominated them. Hence, each three-judge panel ranges from uniformly nominated by Republican presidents (*RRR*) to uniformly nominated by Democratic presidents (*DDD*), with *RRD* and *RDD* as intermediate points, and each trial court judge is either Republican or Democratic. This approach has been widely used in the literature (Landes and Posner 2009; Segal and Spaeth 2002; Sunstein et al. 2006). We measure polarization by the extent to which Circuit Court judges' decisions defer to or align with District Court judges of the same political affiliation, i.e., the extent to which Republican (Democratic) judges are more (less) likely to repeal a prior court decision if that decision was reached by a Democrat.

In some of our results, we compare ideological cases and non-ideological cases. We define ideological cases using Cohen (2024)'s extension of the procedure proposed by Sunstein, Schkade, and Ellman (2004). Specifically, a case is identified as ideological if the opinion includes keywords or cites key Supreme Court opinions intersecting with fourteen issues identified as ideologically salient by Sunstein et. al (e.g., abortion, capital punishment)[4] and two additional issues added by Cohen (LGBTQ- and Second Amendment-related cases). See Cohen (2024) for additional details.

Table 1 presents summary statistics for our outcome of interest and case, panel, and trial judge characteristics, broken down by trial judge's political affiliation (59% Republicans, and 41% Democrats), whether the case was published or not (72% unpublished, and 28% published), and pre vs. post 2000 (44% before, and 56% after). Our outcome of interest is whether the appellate panel reverses the trial court ruling. We see that this happens 18 percent of the time. Notably, this percentage is much higher for published cases compared to unpublished cases (35-37 percent vs. 10-12 percent). Cases can be categorized by the type of issue they address: ideological, civil, criminal, or other. The fraction of ideological cases is one third overall, but constitutes half of published cases.

Focusing on the political composition of the appellate panel, one fifth are *DDD*, with 16 percent *RRR* and a similar frequency in mixed panels. These percentages vary somewhat when compared across cases with a Republican or Democratic trial court judge. However, the variation is relatively

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[4] The full list of key words includes: abortion, affirmative action, campaign finance, capital punishment, commercial speech, criminal procedure, establishment clause, federalism, free exercise clause, gender discrimination, race discrimination, second amendment (gun control), takings clause (property rights), and voting rights.

small, e.g., 18 percent for *RRR* when the trial court judge is Democratic versus 16 percent when Republican. Almost half of panels have at least one female judge, although this increases markedly after 2000, and 14 percent of panels have at least one minority judge, increasing somewhat in the post-2000 period.

Finally, Table 1 presents trial judge characteristics. We note that 17 and 14 percent of judges respectively are women and minorities, with both percentages increasing significantly post-2000. With lifelong tenure, it is not surprising that the average age of judges is more than 60, with an upward trend post-2000. Note that the fractions of women and minorities trial judges are higher among trial judges who were nominated by Democratic presidents. While only 11 and 9 percent of Republican trial judges are women and minorities, these percentages increase to 26 and 21 for Democratic trial judges.

Figure 1 provides a more comprehensive view of the balance of case attributes and the political composition of the appellate panels. Each subfigure presents the regression coefficients of *RRD*, *RDD*, and *DDD* (with *RRR* as the omitted category) in a specification that includes $Circuit\ Court \times Year$ and $District$ fixed effects (as per our main specification, discussed in detail below). We see that Democratic justices are more likely to reverse a prior court's decision, by a significant margin. Correlated with this, Democratic panels are also more likely to publish cases. Whether there is a dissent does not vary as much by panel composition. In the subsequent subfigures, we investigate the balance of case, prior case, and judge attributes across the composition of the panel. Overall, we note that almost all of the estimated effects are not statistically significantly different from zero at standard levels. This includes attributes of the case (such as civil or criminal), and attributes of the trial court judge (Democratic vs. Republican, female, seniority, age, and tenure). The one exception is a slight overrepresentation of *DDD* panels handling civil cases, although one significant coefficient among 33 is not more than would be expected by random chance.

Overall, Figure 1 corroborates the view that cases are randomly assigned to appellate panels. Thus, in our subsequent results, we will treat the estimates of panel composition and their interaction with trial court judge characteristics as plausibly causal.

IV. Results

A. Specification

In our main results, Table 2, we regress Circuit Court reversal of the trial court ruling on indicators for the political composition of the panel (with *RRR* as the omitted category) and its interaction with the political affiliation of the District Court judge:

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\begin{aligned}
Reversal_{ict} = \beta_0 &+ \beta_1 RRD_{ict} + \beta_2 RDD_{ict} + \beta_3 DDD_{ict} + \beta_4 RRD_{ict} \times Trial\ Judge\ Dem_{ict} \\
&+ \beta_5 RDD_{ict} \times Trial\ Judge\ Dem_{ict} + \beta_6 DDD_{ict} \times Trial\ Judge\ Dem_{ict} + \beta_7 Trial\ Judge\ Dem_{ict} \\
&+ h_{ct} + j_d + \delta_{at} + \gamma_{nos} + \theta_{ot} + \varepsilon_{ict}
\end{aligned}
$$

The unit of observation is case i, in circuit c, in year t. Since judges are essentially randomly assigned to panels and panels to cases, we can treat the estimates of the coefficients as causal. In addition to these, we include case-level controls such as the political affiliation of the trial court judge, whether they are female or minority, and their seniority status (chief justice, senior justice, tenure, tenure squared) and appellate panel controls for the proportion of women, proportion of minorities, and average tenure. We include fixed effects at the levels of $Circuit \times Year$, the $District$ court from where the trial case was appealed, appeal type, nature of the suit (for civil cases), and offense type (for criminal cases).[5]

While random assignment of panels and cases supports a causal interpretation of these coefficients, the inclusion of these fixed effects allows us to control for time-varying confounders within Circuit over time. For example, the literature has suggested that the political composition of the Circuit could induce strategic behavior in trial court judges. As a robustness check, we will also include fixed effects at the panel level, which then focuses attention just on within-panel interactions with trial judges.

B. Main Results

In column 1, we present results for the full sample, and in columns 2 to 5 for the combination of pre/post-2000 and published/unpublished.[6] Democrats are more likely to reverse the District Court rulings by Republicans than Republicans are, with a positive gradient from *RRD*, to *RDD*, to *DDD*.

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[5] For nature of the suit and offense type we use two-digit AOC codes.

[6] Splitting the sample by whether the case is published or not raises a potential concern that this decision could be endogenous to the political and partisan dynamics we investigate. To investigate this, we leverage the fact different kinds of cases (administrative, civil, bankruptcy, criminal) and Circuits have different rates of publication. We use Circuit x Case-Type Publication Rates to instrument for publication. Our results are qualitative similar.

The difference in outcome from adding a single Republican to Democratic majority panel (or likewise RRR vs RRD) is notable (see for example Revesz 1997). This effect is stronger in published cases (with the *RRD* effect becoming statistically significantly different from zero) and much larger in magnitude in post-2000, published cases, for which the *DDD* effect is 13.4 percentage points compared to 4.4 percentage points for unpublished cases pre-2000 (although relative to their means, the percent effects are similar).

This comport with the prior literature (e.g., Kastellac 2011 or Epstein, Landes, and Posner 2013), which finds a similar gradient in reversal rates. However, the prior results are based on smaller and selected samples, whereas we include the universe of cases. Additionally, our larger sample size allows for a more comprehensive set of controls and fixed effects for confounders ($Circuit \times Year$ or $Panel$ fixed effects compared to separate year and Circuit dummies).

Our main result of interest are $\beta_4 - \beta_6$, the coefficients on $RRD \times, RDD \times, and\ DDD \times$ $Trial\ Judge\ Democratic$, namely whether there is increased alignment between the political affiliation of Circuit Court panels and the political affiliation of trial court judges. This was investigated by Epstein, Landes, and Posner (2013), and they found that the political affiliation of the trial court judge does not matter. As they note, "That the ideological direction of the district court decision but not the ideological identity of the district judge influences the likelihood of a reversal makes sense." Given our extended, non-selected sample, and extended time window we revisit this question.

Specifically, we examine whether Democratic or Republican judges differ in their reversal of the trial court decision if the trial court judge was nominated by a president from their own party. While we neither find evidence of this pattern in published or unpublished cases prior to 2000, nor in unpublished cases post-2000, we observe such a pattern in published cases post-2000.[7] In column 5, we find fewer reversals when the Appellate Court panel aligns politically with the District Court judge and more when it does not. The coefficient on the indicator for a Democratic trial court judge (which corresponds to the effect of a Democratic trial court judge and an *RRR* appellate panel) is 0.036 (significant at the 5 percent level) indicating an approximately 10 percent higher reversal rate

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[7] While the sample size is too small to present estimates by year, in Figure A.2 we present the main coefficients of interest ($RRD \times, RDD \times, and\ DDD \times Trial\ Judge\ Democratic$) in a rolling five-year window from 1987 to 2018. For RRD, we find most of the significant effects are post-2000. For RDD, the first significant effect is in 1996 (hence the window spanning 1994-1998) and for DDD the first significant effect is 1998 (the 1996-2000 window). Overall, the effect is typically significant post-2000 for all three interactions.

than the baseline of approximately 0.37. In panels with one Democratic justice, the reversal is 0.031percentage points lower if the trial court judge was also Democratic, more than fully offsetting the higher reversal rate for Republican trial court judges of 2.5 percent. In panels with two Democratic justices, the 6.7 percentage point increase in reversal rates is halved if there is a Democratic trial judge, and in panels with three Democratic justices, the 13.7 percentage point increase in probability of reversal more than halves with a Democratic trial judge. All in all, this implies that when there is a Democratic trial judge, there is a swing in reversal rates from *RRR* to *DDD* panels of +3 to -7 percentage points.

Published cases have higher visibility and are more easily accessible to the public, legal professionals, media, and academia. This visibility means that decisions in these cases can have broader impact and receive more attention. The combination of visibility, the potential for setting precedent, and the impact on regulations and legal doctrines makes published cases more critical for judges who wish to assert their ideological views and influence the legal landscape, specifically in a period of growing polarization. This consideration can lead judges to more frequently side with trial judges from their own political party in published cases.

It is noteworthy that minority trial judges are more likely to face reversal, with the effect 0.031 in published cases post-2000, but also present prior to 2000 and in unpublished cases. In contrast, female trial court justices are less likely to face reversal, with an effect of approximately -1 percentage point.

In columns 6 and 7, we estimate more stringent specifications, including trial judge fixed effects in column 6 and panel fixed effects in column 7 (i.e., fixed effects for each unique three-judge panel). Column 6 examines how different panels decide cases presided over by a specific trial judge, while column 7 examines how a specific panel decides cases from various trial judges. In column 8, we estimate the main result by incorporating both trial judge and panel fixed effects. The key interaction effect estimates are essentially unchanged. Given the mean reversal rate of 37 percent, our results suggest meaningfully large shifts in the outcomes of appeals based on political alignment between the Circuit Court panel and the trial judge.

C. Robustness Checks and Interpretation

Table 3 presents a series of robustness checks and extensions for our main results (i.e., for published cases, post-2000). While our use of the term polarization is in keeping with the literature,

the phenomenon we observe is consistent both with polarization in the narrow sense of increasingly divergent viewpoints among judges and with partisanship in the sense of like sticking with like, based on politics. In order to investigate this, in columns 1 and 2, we split our results by ideological cases and non-ideological cases. For non-ideological cases, one would expect less divergence of judicial philosophy, in which case whatever effect we observe would be do due partisanship rather than polarization per se. One would expect differences in judicial philosophy to express themselves more strongly in ideological cases. We find that our results hold for both ideological and non-ideological cases, including notably the interaction effects. This suggests that both polarization and increased partisanship are at play, although it cannot be ruled out that justices have become truly polarized even on issues that are not explicitly ideological.

Since increased polarization is observed primarily post-2000, it raises the question of whether judges appointed prior to 2000 are increasingly partisan or whether newly appointed judges are more partisan. In column 3 we restrict the sample to judges who were nominated prior to 2000 and who remained active post-2000, hence excluding panels with judges who became inactive prior to 2000 or nominated post-2000.[8] We continue to find that *DDD* panels are more likely to reverse trial rulings by Republicans and that this effect is more than halved if the trial court judge was Democratic. Indeed, in this stringent specification, the partisan effect fully offsets the differential reversal rate of *DDD* panels. Hence, our results suggest that, at least in part, the same judges are becoming more partisan over time. This does not preclude that the justices appointed post-2000 are also more partisan. We continue to find a spread of approximately 8 percentage point in reversal rates between *RRR* and *DDD* panels when the trial judge is Democratic.

In Table 3, we no longer find a reduced reversal rate for female trial court judges, but continue to find an increased reversal rate for minority trial court judges. Finally, we investigate whether Circuit Court judges are also responding to the sex or minority status of the trial court judge. We find these interactions are not statistically significantly different from zero (columns 4 to 6). Since Democratic judges are more likely to be female and minority, it is inherently challenging to disentangle these two effects. In order to address this, in column 7, we keep only those panels with

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[8] While it would be interesting to splice this further and consider judges from more finely define cohorts, we do not have the sample size for such an exercise. With panel fixed effects, we need three judges nominated from a particular Circuit and cohort to remain active and appear frequently enough post-2000, which does not occur sufficiently frequently to estimate our effect of interest with reasonable precision.

male, non-minority judges. We find that both the politicization and partisan results are strongly pronounced.

V. Discussion and Conclusion

We have documented a significant increase in the politicization and polarization of decisions of U.S. Circuit Courts appellate panels.

Politicization and polarization are sometimes used in a normatively negative sense. This paper instead uses these terms in a descriptive sense. Differing political viewpoints imply different judicial philosophies, and there is no sense in which the different reversal rates reflect incorrect decisions. Similarly, the fact that appellate panels are more likely to side with trial judges of the same political affiliation could reflect increasing within-party alignment of increasingly divergent political and judicial philosophies across the two parties. It is also noteworthy that the alignment we observe is specifically political and not for example based on sex or minority status.

There are two mechanisms that could underlie our result: changes in behavior among trial judges and changes in behavior among Circuit Court judges. Increasingly polarized trial court judges could reach decisions more closely aligned with the Circuit Court, leading to lower reversal rates, or Circuit Court judges could exhibit greater affinity toward judges of their own political affiliation and become less likely to reverse their decisions. Since trial court judges are not certain whether their rulings will be appealed and subsequently published, we would expect to see the former effect, if it were present, in both published and unpublished cases. Since we are seeing the polarization effect only in published cases, it suggests that the latter mechanism is more pronounced.

Our results are significant for several reasons. First, they can imply increased uncertainty around court decision-making, with the outcomes of appeals hanging in the balance based on the coin toss of judicial assignment to panels. Second, they underline that political trends in judicial appointments have a significant impact on the behavior of courts. Third, they offer a unique window into the increased politicization and polarization of decision-making in a setting that has a broad and lasting impact.

In future work, we plan to investigate the interaction of judges in more detail, in particular to examine whether there is strategic behavior or history-dependent decision-making, and whether

other dimensions of affinity among justices (beyond politics, sex, and race, which we have explored in this paper) affect their voting.

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Appendix A: Testing for a Structural Break

In the results presented in the body of the paper, we split our results in the year 2000. This is based on the literature and context, namely the view that there was a significant shift in the contentious nature of politics beginning with the George W. Bush presidency.

To add a dimension of quantitative evidence to this, we turn to a Chow-style test for a structural break, successively splitting the sample at every year from 1995 to 2015, interacting the specification to allow that parameter to change before and after that year, and then performing an F-test on the joint significance of the structural break indicator and interactions. We perform this test separately for published and unpublished cases, with the expectation that the former results will show a more pronounced shift in the early 2000s. The results are presented in Figure A.1.

In Figure A.1 we see that the F-stat on the structural break peaks among published cases in 2000. For unpublished cases, the F-stats on a break are much lower, and do not show the same peak. For consistency of presentation, we will present results pre- and post-2000 for both published and unpublished cases.

In Figure A.2, we present estimates of one of our key coefficients of interest ($DDD \times Prior\ Judge = D$) in a rolling five-year window from 1987 to 2018. We find the first significant effect in 1998 (hence the window spanning 1996 to 2000), with effects systematically significant post-2000, again corroborating the pre- vs. post-200 split.

Table 1: Summary Statistics

Panel A: Case Characteristics

	All Cases (1)	Trial Judge Republican (2)	Trial Judge Democrat (3)	Unpublished Before (4)	Unpublished After (5)	Published Before (6)	Published After (7)
Reversal	0.18	0.17	0.19	0.1	0.12	0.35	0.37
	(0.38)	(0.38)	(0.39)	(0.3)	(0.32)	(0.48)	(0.48)
Published	0.28	0.27	0.29				
	(0.45)	(0.45)	(0.45)				
Dissent	0.03	0.03	0.03	0.01	0.01	0.08	0.09
	(0.17)	(0.17)	(0.18)	(0.1)	(0.11)	(0.27)	(0.28)
Ideology	0.37	0.38	0.36	0.39	0.28	0.51	0.48
	(0.48)	(0.48)	(0.48)	(0.49)	(0.45)	(0.5)	(0.5)
Civil	0.41	0.4	0.44	0.38	0.35	0.56	0.54
	(0.49)	(0.49)	(0.5)	(0.48)	(0.48)	(0.5)	(0.5)
Criminal	0.33	0.34	0.3	0.3	0.37	0.28	0.3
	(0.47)	(0.47)	(0.46)	(0.46)	(0.48)	(0.45)	(0.46)
Other	0.05	0.05	0.05	0.03	0.06	0.03	0.06
	(0.22)	(0.22)	(0.21)	(0.16)	(0.25)	(0.18)	(0.24)

Panel B: Panel Characteristics

	All Cases (1)	Trial Judge Republican (2)	Trial Judge Democrat (3)	Unpublished Before (4)	Unpublished After (5)	Published Before (6)	Published After (7)
RRR	0.18	0.18	0.17	0.23	0.11	0.25	0.18
	(0.38)	(0.39)	(0.37)	(0.42)	(0.32)	(0.43)	(0.39)
RRD	0.4	0.4	0.39	0.45	0.35	0.44	0.39
	(0.49)	(0.49)	(0.49)	(0.5)	(0.48)	(0.5)	(0.49)
RDD	0.33	0.32	0.33	0.26	0.39	0.26	0.32
	(0.47)	(0.47)	(0.47)	(0.44)	(0.49)	(0.44)	(0.47)
DDD	0.1	0.1	0.11	0.06	0.15	0.06	0.11
	(0.3)	(0.3)	(0.31)	(0.23)	(0.35)	(0.23)	(0.31)
Panel Female > 0	0.49	0.48	0.51	0.39	0.62	0.26	0.6
	(0.5)	(0.5)	(0.5)	(0.49)	(0.49)	(0.44)	(0.49)
Panel Minority> 0	0.34	0.33	0.35	0.22	0.44	0.22	0.37
	(0.47)	(0.47)	(0.48)	(0.41)	(0.5)	(0.41)	(0.48)
Panel Age	64.1	63.91	64.36	62.02	65.39	62.75	65.99
	(6.13)	(6.07)	(6.2)	(5.8)	(6.13)	(5.55)	(5.73)
Panel Tenure	16.3	16.07	16.64	14.21	17.56	14.62	18.77
	(6.04)	(5.88)	(6.25)	(4.75)	(6.41)	(4.89)	(6.51)

Panel C: Trial Judge Characteristics

	All Cases	Trial Judge Republican	Trial Judge Democrat	Unpublished Before	Unpublished After	Published Before	Published After
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trial Judge Democrat	0.41			0.35	0.44	0.38	0.48
	(0.49)			(0.48)	(0.5)	(0.48)	(0.5)
Trial Judge Female	0.17	0.11	0.26	0.11	0.22	0.11	0.22
	(0.37)	(0.31)	(0.44)	(0.32)	(0.41)	(0.31)	(0.41)
Trial Judge Minority	0.14	0.09	0.21	0.11	0.17	0.11	0.17
	(0.35)	(0.29)	(0.41)	(0.32)	(0.37)	(0.31)	(0.38)
Trial Judge Chief	0.15	0.16	0.14	0.17	0.14	0.18	0.14
	(0.36)	(0.37)	(0.34)	(0.37)	(0.35)	(0.38)	(0.35)
Trial Judge Senior	0.27	0.26	0.29	0.24	0.31	0.22	0.3
	(0.45)	(0.44)	(0.45)	(0.43)	(0.46)	(0.42)	(0.46)
Trial Judge Age	63.18	62.75	63.8	61.21	64.81	60.99	64.67
	(9.92)	(9.9)	(9.92)	(9.58)	(9.92)	(9.56)	(9.8)
Trial Judge Tenure	13.77	13.69	13.88	11.97	15.2	11.62	15.54
	(8.74)	(8.49)	(9.08)	(7.3)	(9.48)	(7.32)	(9.29)
N	400,554	236,553	164,001	113,684	175,339	62,203	49,308

The table provides summary statistics (mean and standard deviation) for the full sample and six subsets. There are no significant differences between columns (1) and (2).

Figure 1: Balanced Test Results
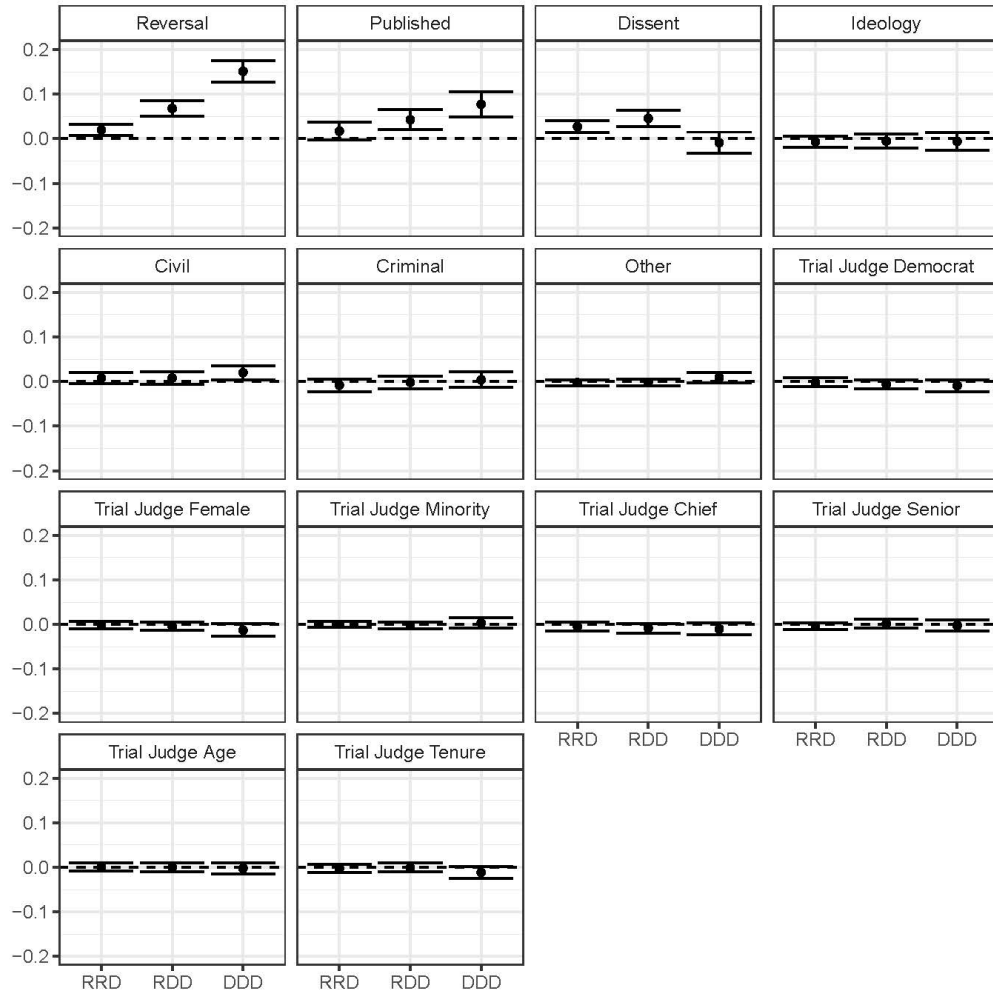
Notes: Each sub figure depicts the mean and 95% confidence interval bands of a different variable, broken down by the political composition of the appellate panel (RRD, RDD, DDD). The first row depicts three outcomes, where we note three Democratic judges are more likely to reverse a trial court decision. In subsequent rows we present graphical balance tests with respect to covariates of the trial case. No significant differences are observed.

Table 2: Main Regression Results

Dependent Variable: Reversal

	All cases (1)	Unpublished Before (2)	Unpublished After (3)	Published Before (4)	Published After (5)	Prior-Judge Fixed Effect (6)	Panel Fixed Effect (7)	Prior-Panel Fixed Effect (8)
RRD	0.010***	0.005	0.002	0.016**	0.025***	0.025***		
	(0.003)	(0.003)	(0.005)	(0.006)	(0.009)	(0.008)		
RDD	0.031***	0.014***	0.014***	0.040***	0.067***	0.065***		
	(0.004)	(0.005)	(0.005)	(0.008)	(0.010)	(0.010)		
DDD	0.063***	0.044***	0.035***	0.056***	0.134***	0.137***		
	(0.005)	(0.007)	(0.006)	(0.014)	(0.014)	(0.014)		
RRD×Dem	−0.005	−0.001	0.004	−0.006	−0.031**	−0.035***	−0.031**	−0.037***
	(0.004)	(0.004)	(0.005)	(0.009)	(0.012)	(0.012)	(0.013)	(0.012)
RDD×Dem	−0.005	0.006	0.002	−0.009	−0.046***	−0.048***	−0.043***	−0.047***
	(0.004)	(0.006)	(0.005)	(0.012)	(0.012)	(0.014)	(0.014)	(0.014)
DDD×Dem	−0.016***	0.001	−0.005	−0.023	−0.069***	−0.073***	−0.069***	−0.070***
	(0.006)	(0.010)	(0.008)	(0.018)	(0.018)	(0.019)	(0.020)	(0.020)
Trial Judge Dem	0.003	−0.005	−0.001	0.008	0.036***		0.036***	
	(0.003)	(0.004)	(0.005)	(0.008)	(0.010)		(0.011)	
Trial Judge Female	−0.007***	−0.005	−0.006***	−0.006	−0.009*		−0.010	
	(0.002)	(0.004)	(0.002)	(0.006)	(0.005)		(0.006)	
Trial Judge Minority	0.017***	0.014***	0.017***	0.022***	0.031***		0.038***	
	(0.002)	(0.003)	(0.002)	(0.007)	(0.006)		(0.008)	
Trial Judge Chief	−0.005**	−0.002	−0.003	−0.009	−0.011*	−0.006	−0.005	0.002
	(0.002)	(0.003)	(0.003)	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)
Trial Judge Senior	0.001	−0.005	0.003	0.005	−0.003	0.002	−0.004	0.006
	(0.002)	(0.004)	(0.003)	(0.007)	(0.007)	(0.010)	(0.008)	(0.010)
Trial Judge Tenure	0.001***	0.002***	−0.0004	0.001	0.0002	−0.014	−0.001	−0.030***
	(0.0003)	(0.0005)	(0.0004)	(0.001)	(0.001)	(0.008)	(0.001)	(0.011)
Trial Judge Tenure^2	0.00002**	−0.00002	0.00004***	0.00001	0.00004*	0.00004	0.0001***	0.0001*
	(0.00001)	(0.00002)	(0.00001)	(0.00002)	(0.00002)	(0.00004)	(0.00003)	(0.00004)
Women	−0.004**	−0.003	0.002	−0.005	−0.007	−0.006		
	(0.002)	(0.003)	(0.002)	(0.006)	(0.005)	(0.005)		(0.000)
Minority	−0.007***	−0.008***	−0.003	−0.017***	0.003	0.004		
	(0.002)	(0.003)	(0.002)	(0.006)	(0.005)	(0.005)		(0.000)
Avg Tenure	0.0004**	0.00001	−0.0004	0.001***	−0.0003	−0.0003		−0.163
	(0.0002)	(0.0003)	(0.0003)	(0.0005)	(0.0005)	(0.0004)		(0.219)
Prior Judge FE	No	No	No	No	No	Yes	No	Yes
Panel ID FE	No	No	No	No	No	No	Yes	Yes
Observations	400,554	113,684	175,359	62,203	49,308	49,308	49,308	49,308
Adjusted R^2	0.053	0.023	0.032	0.043	0.053	0.060	0.087	0.095

Notes: The table presents results from regressions with Reversal as the dependent variable, with specifications as specified in the column headers and notes. Standard errors are in parenthesis and are clustered by Circuit×Year. All regressions also include Circuit×Year, District, Appeal Type, Nature of the suit (for Civil cases), and Offense Type (for Criminal cases) fixed effects. Coefficient estimates and standard errors are list with starts depicting statistical significance (* p<0.1, ** p<0.05, *** p<0.01). The coefficients of chief interest are those on the political composition of the appellate panel (RDD, RRD, and DDD) and the interaction of these with the political affiliation of the trial court judge.

Table 3: Robustness

Dependent Variable: Reversal

	Ideological Cases	Non-Ideological Cases	Only Include Trail Judges Nominated Before 2000	Add Trial Judge Female Interactions	Add Trial Judge Minority Interactions	Add Trial Judge Female and Minority Interactions	Excluding Obs. where Trial Judges Female or Minority
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
RRD	0.027**	0.021*	-0.004	0.026***	0.025***	0.025***	0.024**
	(0.013)	(0.011)	(0.017)	(0.009)	(0.009)	(0.009)	(0.010)
RDD	0.081***	0.050***	0.025	0.069***	0.068***	0.070***	0.071***
	(0.015)	(0.012)	(0.020)	(0.010)	(0.010)	(0.010)	(0.011)
DDD	0.142***	0.123***	0.107***	0.135***	0.135***	0.136***	0.141***
	(0.020)	(0.018)	(0.026)	(0.014)	(0.015)	(0.014)	(0.014)
RRD× Dem	-0.028	-0.031*	-0.029	-0.030**	-0.031**	-0.030**	-0.025*
	(0.017)	(0.016)	(0.022)	(0.012)	(0.012)	(0.013)	(0.015)
RDD×Dem	-0.049***	-0.036**	-0.043*	-0.042***	-0.045***	-0.042***	-0.043***
	(0.018)	(0.016)	(0.024)	(0.012)	(0.012)	(0.012)	(0.015)
DDD×Dem	-0.052**	-0.081***	-0.106***	-0.069***	-0.069***	-0.069***	-0.078***
	(0.025)	(0.023)	(0.032)	(0.018)	(0.018)	(0.018)	(0.021)
RRD×Female				-0.007		-0.007	
				(0.014)		(0.014)	
RDD×Female				-0.017		-0.017	
				(0.014)		(0.014)	
DDD×Female				-0.003		-0.003	
				(0.020)		(0.020)	
RRD×Minority					0.004	0.004	
					(0.016)	(0.016)	
RDD×Minority					-0.008	-0.007	
					(0.017)	(0.017)	
DDD×Minority					-0.006	-0.006	
					(0.020)	(0.020)	
Prior Dem	0.029*	0.038***	0.033*	0.035***	0.036***	0.034***	0.030**
	(0.016)	(0.014)	(0.019)	(0.010)	(0.010)	(0.011)	(0.012)
Prior Female	-0.013	-0.006	-0.005	-0.001	-0.010*	-0.001	
	(0.008)	(0.007)	(0.010)	(0.012)	(0.005)	(0.012)	
Prior Minority	0.035***	0.029***	0.023**	0.031***	0.033**	0.033**	
	(0.009)	(0.009)	(0.010)	(0.006)	(0.013)	(0.013)	
Observations	23,870	25,438	17,480	49,308	49,308	49,308	32,704
Adjusted R²	0.059	0.049	0.048	0.053	0.053	0.053	0.053

Notes: The table presents robustness checks for our main specification, with results from regressions with reversal as the dependent variable, with specifications as specified in the column headers and notes. Standard errors are in parenthesis and are clustered by Circuit×Year. All regressions also include Circuit×Year, District, Appeal Type, Nature of the suit (for Civil cases), and Offense Type (for Criminal cases) fixed effects. Coefficient estimates and standard errors are list with starts depicting statistical significance (* $p<0.1$, ** $p<0.05$, *** $p<0.01$). Our main effects of interests are similar.

Figure 2: Chow-Test Results
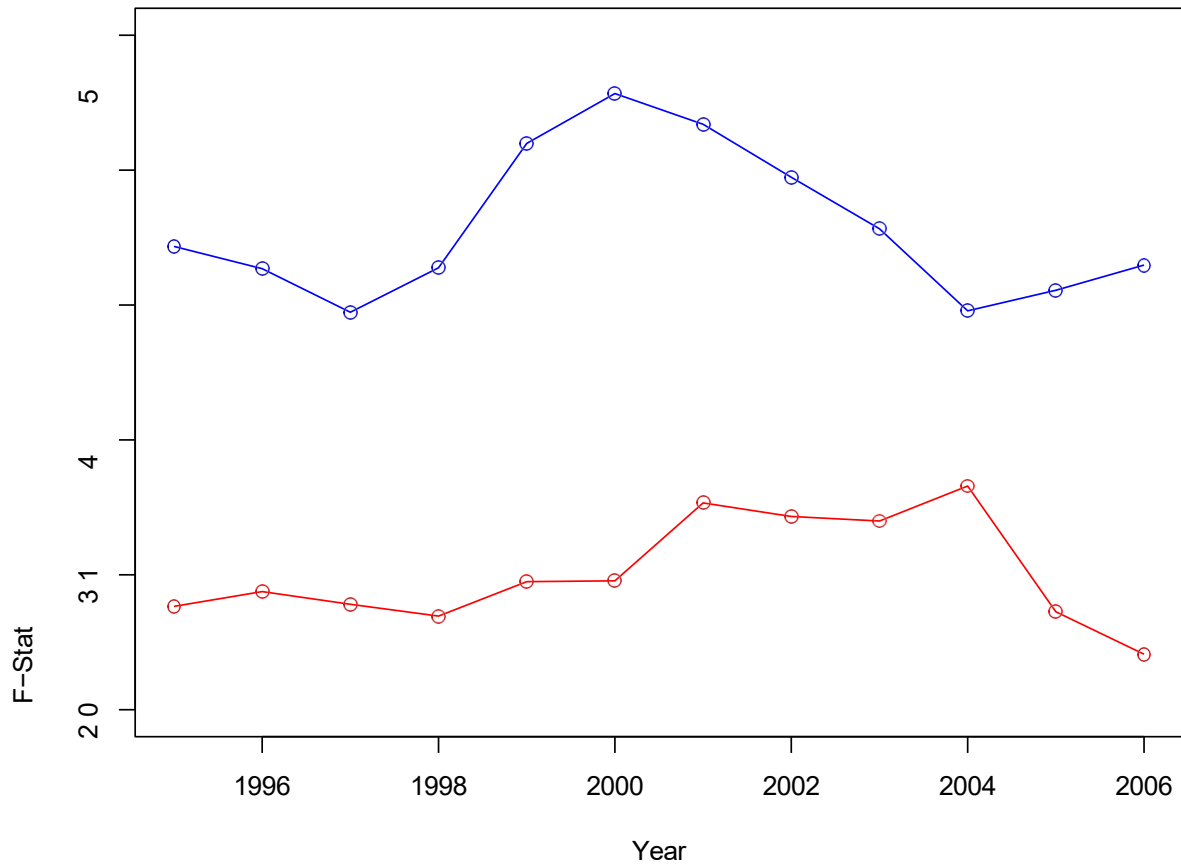
Notes: The figure presents the F-statistics of a Chow tests on a joint test of significant differences for our main coefficients of interests (RRD x After, RDD x after, DDD x after, After x D (Democratic Trial Judge), RRD x After x D, RDD x after x D, DDD x after x D) before after the date on the x-axis. The blue line depicts coefficients for published cases, and the red line for unpublished cases. The former reaches a maximum in the year 2000, while the former is relatively flat and smaller in magnitude.