Class Certification in the U.S. Courts of Appeals: A Longitudinal Study

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Think of the class action as a wounded beast – limited in its range of motion, yet dangerous to those within its reach. . . . Plaintiffs’ and defendants’ class action lawyers frequently debate the continued vitality of class action practice, the former decrying their setbacks, the latter reveling in their victories, and both sides determined to fight on. Academics sift through the rubble of class action jurisprudence attempting to discern patterns and to predict what lies ahead. Judges struggle to apply conflicting precedents and fill in gaps, at times reluctantly surrendering to rigid pronouncements from on high.¹

I

INTRODUCTION

We are honored to participate in this issue dedicated to the memory of Francis McGovern. One of us had the pleasure of knowing Francis for decades and of watching him in action in some of the many, quite different, roles in which he excelled. Indeed, Francis’s career in the theory and practice of alternative dispute resolution (ADR) is compelling evidence against the notions that the field is epistemically shallow and that it offers second-class justice. Both notions seemed plausible in 1984, when one of us, as Chair of the Association of American Law Schools (AALS) Section of Civil Procedure, solicited Owen Fiss to write the paper that became *Against Settlement*.² As others have observed, and as was evident to anyone who watched Francis in action, he was at the same time creative and committed to evidence-based solutions. Aspiring to live up to his example in those respects, we offer this Article, which is part of a larger body of


work that seeks to deploy the insights of multiple disciplines and a multi-method research strategy to cast light on, and dispel myths about, litigation procedure. Fittingly, our subject is class actions.

There is a vast literature on the modern class action, but little of it is informed by systematic empirical data. In the absence of such data, commentators seeking to characterize trends in class action activity or class action jurisprudence often rely on their sense of the lay of the land, citing decisions that support their view. These characterizations sometimes sweep broadly, ignoring possible differences among courts deciding class certification issues. Moreover, they are necessarily the children of the times when they were made. Thus, even if accurate for the period characterized, they may no longer be accurate. In this Article we present the first longitudinal picture of class certification on the U.S. Courts of Appeals.

In earlier empirical work we traced a legal movement among conservative activists, business groups, and the Republican party, from the first Reagan administration through 2014. That movement attempted to retrench both existing opportunities and incentives to enforce federal rights through private lawsuits. We found that, among federal lawmakers, the Supreme Court proved most effective in changing legal rules salient to private enforcement. We also found that in the mid- to late-1990s, in private enforcement cases in general and Federal Rules decisions in particular, the Court became increasingly likely to rule in an anti-plaintiff direction. In addition, the justices’ voting behavior became increasingly ideologically polarized.

When we examined the role of the Court in retrenchment of class actions in particular, the picture that emerged was at times consistent with the larger canvases we painted. Yet, although the Court was generally pro-private

3. See, e.g., Thomas E. Willging & Emery G. Lee III, Class Certification and Class Settlement: Findings from Federal Question Cases, 2003–2007, 80 U. CIN. L. REV. 315, 339 (2011) (“There have been very few empirical studies of class actions in general . . . .”); id. at 339; Jonah B. Gelbach & Deborah R. Hensler, What We Don’t Know About Class Actions But Hope to Know Soon, 87 FORDHAM L. REV. 65, 67 (2018) (“[It is remarkable how few basic facts about class actions we actually know.”); Deborah R. Hensler, Happy Fiftieth Anniversary, Rule 23! Shouldn’t We Know You Better After All This Time?, 165 U. PA. L. REV. 1599, 1615 (2017) (“[W]e face a virtual absence of even the most basic information on how class actions operate in federal and state courts.”).

4. But not always. For an illuminating qualitative empirical study of class actions, see DEBORAH R. HENSLE, NICHOLAS M. PACE, BONNIE DOMBEY-MOORE, ELIZABETH GIDDENS, JENNIFER GROSS, & ERIC MOLLER, CLASS ACTION DILEMMAS: PURSUING PUBLIC GOALS FOR PRIVATE GAIN (2000).

5. See STEPHEN B. BURBANK & SEAN FARHANG, RIGHTS AND RETRENCHMENT: THE COUNTERREVOLUTION AGAINST FEDERAL LITIGATION 130 (2017) (“When acting under Article III rather than as a delegated lawmaker under the Rules Enabling Act, the Court has been far more successful than either Congress or the rulemakers in changing the law that governs private enforcement.”).


7. Stephen B. Burbank & Sean Farhang, Class Actions and the Counterrevolution Against Federal Litigation, 165 U. PA. L. REV. 1495 (2017). Although our criteria in creating the Supreme Court data set specified that decisions in Federal Rules cases should turn on interpretation of a Federal Rule where the result would either widen or narrow opportunities or incentives for private enforcement, we also included cases that turned on an issue explicitly linked to the policies underpinning Rule 23. See id. at 1517.
enforcement (both in general and in all Federal Rules cases) in the 1960s and 1970s,\textsuperscript{8} that was not the tenor of its class action decisions during this time.\textsuperscript{9} In addition, although the Court’s class action jurisprudence seemed to align with the anti-plaintiff movement and growing polarization in its other private enforcement decisions starting around 1995, toward the end of the study period (2014) the Court issued a number of decisions rejecting positions advanced by advocates of retrenchment.\textsuperscript{10}

The growing polarization between conservative and liberal justices that we found in our retrenchment studies, which was greatest in Federal Rules cases,\textsuperscript{11} is akin to that which other scholars have found in studying the Court’s business decisions.\textsuperscript{12} This is not surprising given that in recent decades disputes involving business have dominated its Federal Rules private enforcement cases.\textsuperscript{13} In our prior work, we suggested that the speculative explanation offered by other scholars for the phenomenon in business cases may also apply in Federal Rules cases.\textsuperscript{14} That is: liberal justices in the minority reacted to their conservative colleagues in the majority pushing the envelope in the pro-business/anti-private enforcement direction in cases where the arguments for doing so were ever more contestable.

From this perspective, it would not be surprising if interest groups and defendants seeking retrenchment in Federal Rules cases, which have become much more active in filing amicus briefs in recent decades,\textsuperscript{15} having enjoyed success before, continued to push the envelope. Nor would it be surprising if such efforts occasionally caused conservative judges and justices to refuse to go further. A leading scholar of class actions has suggested that some of the Supreme Court’s and circuit courts’ recent pro-class action decisions (and denials of certiorari) can be regarded as backlash against “overly aggressive advocacy by defendants.”\textsuperscript{16} Perhaps so, although they may simply serve as another reminder

\textsuperscript{8} See Burbank & Farhang, supra note 5, at 152–55 (all private enforcement cases); id. at 173–75 (Federal Rules cases).

\textsuperscript{9} See Burbank & Farhang, supra note 7, at 1520 (“From 1969 . . . through the end of the 1970s, the clear preponderance of outcomes was anti-class action . . . .”).

\textsuperscript{10} See id. at 1523.

\textsuperscript{11} See Burbank & Farhang, supra note 5, at 175.

\textsuperscript{12} See Lee Epstein, William M. Landes & Richard A. Posner, How Business Fares in the Supreme Court, 97 MINN. L. REV. 1431, 1469 (2013) (“[T]he increasing conservatism of the Court resulted in the Court’s taking cases in which the conservative position was weaker than previously, leading to more opposition by liberal Justices and hence to a higher percentage of liberal votes by those Justices in business cases.”).

\textsuperscript{13} See Burbank & Farhang, supra note 5, at 176.

\textsuperscript{14} See Burbank & Farhang, supra note 7, at 1521–22.

\textsuperscript{15} See id. at 1524–26.

\textsuperscript{16} Robert H. Klonoff, Class Actions Part II: A Respite from the Decline, 92 N.Y.U. L. REV. 971, 974 (2017); see id. at 981 (suggesting that the Court has “become numb” to the “blackmail pressure to settle” argument and that “the business community has suffered a lack of credibility in its amicus strategy”); id. at 991 (noting that “defendants had virtually no success in selling their interpretation of Comcast to the circuits”); id. at 992 (observing that “the impact of [Wal-Mart] has been less profound than one might have predicted when it was decided in 2011”). Professor Klonoff described these
that ideology alone cannot explain judicial decisions: the law itself, as courts understand it, constrains judicial independence.

Our prior work thus sought to fill only a small part of the empirical vacuum about class actions in the federal courts by gathering and analyzing data on the Supreme Court’s class action decisions that are salient to private enforcement of federal law. But the Court decides few such cases, and there have been long periods when the lower federal courts were left to fend for themselves. Moreover, until recently, very few of the Court’s class action decisions concerned the standards for class certification. The centrality to private enforcement of the legal question whether class certification is appropriate under Federal Rule of Civil Procedure 23 has long been obvious. The paucity of decisions on certification should caution against the tendency, common among academics, to attribute legal change to the Court. Empirical research has revealed that the lower courts may not wait for the Supreme Court to do what they think needs to be done. That was true, for example, with summary judgment.

Sometimes, but only sometimes, the Court leads. Sometimes it follows. The press of other business for the limited spaces on a small docket not only means that there may be long intervals between the Court’s decisions in a discrete area. It also means that the Court lacks the resources regularly to police compliance with those decisions it does make. Differences in the forces that shape case selection by the Supreme Court and the docket of the courts of appeals can explain why there may be little discernible relationship between empirical trends at different levels of the federal judicial hierarchy. Other possible reasons include institutional differences that constrain or enhance the ability of judges to wield influence, and the fact that both panels and circuits may have policy preferences and institutional concerns that are not aligned with the Supreme Court.

Mindful that there were few Supreme Court class certification decisions in our earlier studies, and that they may not provide an accurate picture of class action jurisprudence (let alone class action activity) over time, we launched a project to fill a larger part of the empirical vacuum. To that end, we created a developments as “a welcome change from years of court decisions curtailing class actions.” Id. at 975. Cf. Andrew J. Trask, Reactions to Wal-Mart v. Dukes: Litigation Strategy and Legal Change, 62 DEPAUL L. REV. 791, 816 (2013) (“[T]he [Wal-Mart] opinion is not so much a rollback as a correction in a constantly shifting game, in which both plaintiff and defense lawyers are arguing for new applications of class action rules.”).

17. Between 1969 and 1982, the Court decided seventeen cases involving either an interpretation of Rule 23 or consideration of the policies underlying Rule 23, not one of which required decision of a certification issue. It decided the first such case in 1982 (Gen. Tel. Co. v. Falcon, 457 U.S. 147 (1982)), the second in 1997 (Amchem Prods., Inc. v. Windsor, 521 U.S. 591 (1997)), and the third in 1999 (Ortiz v. Fibreboard Corp., 527 U.S. 815 (1999)). There followed another long interval before the Court finally paid sustained attention to certification issues, commencing in 2010 (Shady Grove Orthopedic Assocs. v. Allstate Ins. Co., 559 U.S. 393 (2010)).

comprehensive data set of class certification decisions in the U.S. Courts of Appeals.

The first article to emerge from this project explored the association between the party of appointing president, gender and race of court of appeals judges, and votes and outcomes on class certification issues. We found that the ideological composition of the panel (proxied by the party of the appointing president) has a very strong association with certification outcomes. All-Democratic panels have dramatically higher rates of certification than all-Republican panels—nearly triple in about the past twenty years. We also found that the presence of one African American on a panel, and the presence of two females (but not one), is associated with pro-certification outcomes. Except for splitting the data into two roughly equivalent time periods in some of our models, that article did not seek to identify trends in appellate class certification activity or law over time.

We now turn to that endeavor. In Part II, through a literature review, we identify both prior empirical scholarship and commonly asserted claims concerning federal class action activity and jurisprudence over time. These ground some of the propositions that we test with our data. Descriptive presentations of those data suggested additional propositions that might usefully be tested.

In Part III we present our data and explore the light they shed on class action certification decisions in the U.S. Courts of Appeals. Our findings suggest that final-judgment appeals, at least in precedential decisions, played a larger role in this landscape prior to Rule 23(f) than has often been asserted or assumed, and that in all decisions since 2002 they continue to play a major role. We also find that final-judgment appeals involving Rule 23(b)(3) issues are common, which casts doubt on the conventional wisdom concerning the class certification decision as the death knell for plaintiffs or defendants.

Our findings of significant variation over time in appeal outcomes post-Rule 23(f) suggest the hazards of generalizing experience under that Rule in any particular period. They demonstrate that, for reasons about which we can only speculate, interlocutory appeals since 2000 have elicited more ideological behavior, leading to greater polarization. Finally, our findings show that, contrary to conventional expectations, in the period since Wal-Mart and Comcast, plaintiffs have been winning certification appeals more frequently than they were formerly, and Rule 23(f) contributed to this recent success.

II
THE EXISTING LITERATURE: DATA AND CLAIMS

A. Rule 23(f)

Studies of the class action decisions of the courts of appeals that are based on systematically collected data have focused on Rule 23(f). This provision authorizes a party who has suffered an adverse decision on a motion for class certification to petition for interlocutory review of that decision. It also authorizes the courts of appeals to grant or deny permission to appeal in their sole discretion. Securing appellate review of adverse class certification decisions was said to be difficult before its promulgation, and it was asserted that few litigants had the means (in the case of plaintiffs) or the appetite for risk (in the case of both plaintiffs and defendants) to persevere to a final judgment. Statutory authority for interlocutory appeals is limited. The main hope for such review of class certification decisions requires the approval of both the district court and the court of appeals.

In the 1970s a number of the U.S. Courts of Appeals, led by the Second Circuit, adopted the so-called death knell doctrine in order to permit interlocutory review of some decisions denying class certification, at the behest of plaintiffs who could not continue to litigate in the absence of a certified class.


23. “A court of appeals may permit an appeal from an order granting or denying class-action certification under this rule...” FED. R. CIV. P. 23(f). This provision represented the only Rule 23 amendment to emerge from a decade of work by the Advisory Committee in the 1990s. See Burbank & Farhang, supra note 7, at 1514–15.


25. See, e.g., Willging & Lee, supra note 3, at 324 (noting “the conventional wisdom that the denial of a motion to certify signals the death knell for a proposed plaintiff class and the grant of a motion to certify a litigation class forces the defendant to settle”).


27. See Eisen v. Carlisle & Jacquelin, 370 F.2d 119 (2d Cir. 1966). The Second Circuit, apparently alone, also permitted interlocutory review of certain adverse class certification decisions by defendants under the so-called reverse death knell doctrine, but it “established several conditions severely limiting its use” before the Supreme Court put an end to the entire enterprise. Kenneth A. Cohen, “Not Dead
The Supreme Court put an end to that practice in 1978, as it did to entertaining interlocutory appeals under Section 1292(a) in putative class actions seeking injunctive relief.

Thereafter, in the absence of a final judgment, if review could not be obtained under Section 1292(b), the only available avenue was a writ of mandamus. The perception in the 1990s that some courts of appeals were using this extraordinary writ for purposes beyond its limited remit was one of the cited reasons for proposing Rule 23(f). The perceived inability of the courts of appeals to superintend class action doctrine was another.

Rule 23(f) is facially neutral. Many predicted at the time it was being debated, and asserted after it was promulgated, however, that it would (or did) disproportionately benefit defendants. Although the published studies of experience under Rule 23(f) vary in many respects, until recently they appeared largely to confirm such predictions and assertions. In the years studied, when the courts of appeals granted review under Rule 23(f), they were more likely to reverse a grant of certification and more likely to affirm a denial of certification.

Until recently, none of the published Rule 23(f) studies extended beyond 2012. Only one of them, ending in 2006, presented data on petitions for review as well as on decisions in cases in which review was granted. Decisions on petitions for review are usually not memorialized in opinions of any description. An unpublished study by a law firm working for the Chamber of Commerce’s Institute for Legal Reform sought to supplement the earlier study by compiling data on petitions for review and dispositions of cases granted review from October 1, 2006 through 2013. It concluded that courts of appeals granted petitions for review far less frequently in the later period (2006–2013) than in the earlier one (1998–2006), with the rate of granted petitions falling from 36% to 22.9%. Additionally, most of that decline was attributable to petitions filed by

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31. See, e.g., Charles Silver, “We’re Scared to Death”: Class Certification and Blackmail, 78 N.Y.U. L. REV. 1357, 1358 (2003) (“Circuit courts began protecting defendants as soon as the amendment took effect. A plaintiff who prevails on a certification motion in a trial court must expect to lose on appeal.”).
Professor Silver noted that he “argued against the interlocutory appeal amendment when the Rules Committee met in Dallas, Texas in 1996.” Id. at 1358 n.6. His assertion about what plaintiffs must expect on appeal relied on a 2003 assessment of decided cases finding “that no federal circuit has used 23(f) appeal to reverse denial of class certification.” Id. at 1358 n.8.
32. See, e.g., Sullivan & Trueblood, supra note 22, at 286 n.43; Beisner et al., supra note 22.
33. See Sullivan & Trueblood, supra note 22.
34. See id. at 277 (quoting Judge Diane Wood, who observed that “[t]he vast majority of our rulings on 23(f) motions are not published”); id. at 284 (noting “only 10% of the ‘decisions’ accepting or rejecting a Rule 23(f) petition are available by searching published or electronically available opinions” and “the rest—90%—are reflected only in docket entries . . . [where] the court’s reasoning may not be provided”).
defendants, for which the grant rate across all circuits declined from 45% to 24.8% (compared to a decline from 22% to 21% for plaintiffs).\textsuperscript{35} In an April 2014 memorandum describing the study, lawyers at Skadden observed that, although “it remains more likely for grants of class certification to be reversed on appeal than to be affirmed; and more likely for denials of class certification to be affirmed rather than reversed,” plaintiffs “have seen greater success with Rule 23(f) appeals than in previous years.” Thus, although the affirmance rate for grants of class certification remained essentially stable (increasing from 29% to 30%), the reversal rate for denials increased from 29% to 40%.\textsuperscript{36}

The authors of the 2014 memorandum reasoned that their findings “are concerning for defendants because low [petition] grant rates in certain circuits may signal to district courts that they are unlikely to be reversed . . . which could lead some of these courts to push the boundaries of their discretion in ruling on class certification.” They expressed particular concern about the Ninth Circuit, “where defendants filed 157 Rule 23(f) petitions and only 23 were granted.” Warning that “particular attention must be paid to meritless class actions” in such circuits, the lawyers suggested as “[o]ne potential strategy for class action defendants . . . to focus appellate courts on the need to interpret recent U.S. Supreme Court class action jurisprudence.” They continued:

In contrast to the U.S. Courts of Appeal, the Supreme Court has expressed a greater willingness to hear class certification cases in recent years. The last few years have produced a host of Supreme Court rulings on class action issues, including \textit{Wal-Mart Stores v. Dukes}, \textit{Amgen v. Conn. Ret. Plans & Trust Funds}, and \textit{Comcast v. Behrend}. The recent Supreme Court decisions may provide an opportunity for class action litigants seeking appellate review to argue that further appellate interpretation is needed, particularly where a trial court relies on pre-[\textit{Wal-Mart}] and pre-\textit{Comcast} appellate precedents in granting class certification.\textsuperscript{37}

Finally, in connection with Rule 23(f), Professor Bryan Lammon recently completed a study of petitions for review and merits decisions for the period of 2013–2017.\textsuperscript{38} Observing that decisions on granted Rule 23(f) petitions alone do not give an accurate picture of how plaintiffs and defendants fare under Rule 23(f), Lammon concludes that, for the period studied, the difference in grant rate

\textsuperscript{35} Beisner et al., \textit{supra} note 22. A commentator synthesizing the two studies observed: “[From 1998 to 2006], 75 percent of the 23(f) petitions decided were from grants of certification and 25 percent from denials. [From 2006 to 2013], however, 61 percent of the 23(f) petitions decided were from grants of certification and 39 percent from denials.” Daniel B. Rogers, \textit{Rule 23(f) After 16 Years}, 34 APP. PRAC. 12, 17 (2014).

\textsuperscript{36} Beisner et al., \textit{supra} note 22.

\textsuperscript{37} \textit{Id.} For an assertion suggesting that litigants agreed that “further appellate interpretation [wa]s needed,” see Frank Burt & Michael Kentoff, \textit{Class Action Developments After \textit{Wal-Mart Stores v. Dukes}} (Jul. 2012) (unpublished manuscript), Lexis SU004 ALI-ABA 1049 (claiming that interlocutory review of commonality issues increased after the Supreme Court’s \textit{Wal-Mart} decision). They may not, however, have been defendants. \textit{See infra} note 91 and accompanying text.

as between plaintiffs (21%) and defendants (27%) is “only weak evidence that it’s the petitioning party that is driving the decision to grant a Rule 23(f) petition.”39 Moreover, his data reveal that the courts of appeals reversed both grants and denials of class certification about 54% of the time, with statistical analysis yielding the conclusion that the “numbers thus provide essentially no evidence that courts favor defendants over plaintiffs in the Rule 23(f) context . . . .”40 When the outcomes of both petitions and certification merits decisions are considered, and “[g]iven that defendants file about 50% more petitions than plaintiffs do[,] . . . plaintiffs have more total victories in the Rule 23(f) context [57%] than defendants do [43%].”41

Professor Lammon’s study is important. His data do not, however, enable him to completely fulfill the goal of “assess[ing] the rule’s criticisms.”42 In summarizing assessments of Rule 23(f) by supporters and critics since it became effective, he cites articles published in 2001, 2002, 2010, 2013, 2014, 2015, and 2017, among others.43 Many of the assessments in question predated the activity reflected in the data on which his study relies (let alone their availability). Had those assessments been based on contemporaneous data, they might have been accurate. It would require a longitudinal study of both petitions and merits decisions to reach a conclusion on that question.

Whatever its significance “in the Rule 23(f) context,” denial of a petition for review does not necessarily represent “total victory” on the issue of class certification.44 An appeal from such a decision may be available after a final judgment, or in the case as a whole. As previously observed, the conventional wisdom has been that few litigants have the resources or the appetite for risk to proceed to a final judgment after an adverse class certification decision in the district court.45 Yet, not all class actions seek damages and certification under Rule 23(b)(3), and class action lawyers need not always rely on the prospect of a common fund to finance the litigation. Even after class certification in damages class actions, there may be alternatives to settlement or trial, including a motion to dismiss under Rule 12(b)(6) or a motion for summary judgment.46 Finally, as

39. Id. at 5.
40. Id. at 5.
41. Id. at 45–46.
42. Id. at 5. See id. at 45 (arguing that data provide “little or no support for the popular criticisms of Rule 23(f)—that it favors defendants”).
43. See id. at 3 nn.5–7, 17 n.66, 18 nn.67–70, 19 n.71 and accompanying text.
44. Id. at 45.
45. In 2017, the Supreme Court eliminated one technique—voluntary dismissal with prejudice—that some plaintiffs’ class action lawyers used in order to secure an immediate appeal while (hopefully) preserving class claims if the certification decision were reversed. See Microsoft Corp. v. Baker, 137 S. Ct. 1702 (2017).
46. See Willging & Lee, supra note 3, at 324 (“Given the conventional wisdom . . . we expected this figure [(57.6% of cases with class certified settled)] to be much higher . . . . The defendants may prevail, for example, at summary judgment or at trial [or prevail on a Rule 23(f) appeal].”; id. at 326 (discussing a case in which, following certification, the district court granted summary judgment for the defendant, leading to an appeal by the plaintiff); Hensler, supra note 3, at 1604 (“[M]any charges about the negative
Professor Klonoff observed in 2016, “the scope and sheer number of recent class action trials constitutes an important new trend.”

Considering the volume of class certification decisions, the literature contains many claims that the courts of appeals decided more class certification issues following the promulgation of Rule 23(f) in 1998. Yet, the picture of appellate review prior to 1998 that emerges from the literature is far from clear, with commentators differing on such questions as: the incidence of review under the death knell doctrine by courts that permitted it prior to 1978, the utility of 28 U.S.C. §1292(b) to secure interlocutory review, and the role of mandamus. Some of the inconsistencies are likely due to changes in the mechanisms available to secure interlocutory review over time, including both the addition or subtraction of a particular mechanism (for example, the death knell doctrine) and the impact such changes had on attitudes towards other mechanisms (for example, mandamus).

B. The Class Action Fairness Act of 2005

The Class Action Fairness Act of 2005 (CAFA) is primarily a jurisdictional statute. Some of its supporters, whose real agenda was retrenchment (rather than, as claimed, protecting state lawmaking prerogatives), hoped that channeling state-law class actions into federal court would materially reduce the probability of certification, if not through denial of certification by district courts, then on appellate review (as putatively augmented by Rule 23(f)).

consequences of class actions, such as the assertion that the risks of class actions are so great that they force defendants to settle non-meritorious claims—so called ‘blackmail settlements’—rest on empirical assumptions about the pattern of disposition of class complaints, which have gone largely untested.”


50. See Federal Civil Appellate Jurisdiction: An Interlocutory Restatement, 47 LAW & CONTEMP. PROBS., Spring 1984, at 13, 202 (finding that, after Livesay, more appellate courts began to accept review of certification decisions via writs of mandamus). Compare Bernstein & Berger, supra note 49, at 852 (“Mandamus has been a universally unsuccessful mode of seeking review of class certification decisions.”), and McDonald & Ostrager, supra note 49, at 567 (finding that writs of mandamus were consistently denied because they are limited to cases when district court judges clearly abuse their discretionary power), with Linda S. Mullenix, Some Joy in Whoville: Rule 23(f), A Good Rulemaking, 69 TENN. L. REV. 97, 101 (2001) (arguing that appellate review of class certification via writs of mandamus became increasingly popular in the 1990s).

51. 28 U.S.C. §§ 1332(d), 1453, 1711–1715.

In a study undertaken shortly after CAFA was enacted, researchers at the Federal Judicial Center (FJC) found “a dramatic increase in the number of diversity class actions filed as original proceedings in the federal courts in the post-CAFA period.” Perhaps assuming that this documented increase would translate into a similar increase in the courts of appeals, a number of scholars have claimed that the volume of class certification appeals increased after CAFA. We are aware of no empirical studies that support such claims. Having completed Phase I and started Phase II of the contemplated study, the FJC researchers apparently turned to other projects. As a result they did not, in the end, “analyze the litigation activity in the sampled cases in the courts of appeals.”

C. The Class Action Jurisprudence of the Courts of Appeals

As is evident from our discussion of Rule 23(f) empirical studies, claims about that Rule include both its effect on the volume of class certification appeals, and how plaintiffs and defendants have fared when it was invoked. These studies ignore final-judgment appeals, perhaps regarding them as trivial in number. None of the studies purports to characterize the impact of the courts of appeals’ class action jurisprudence as a whole on plaintiffs and defendants. Yet, as we show below, final-judgment appeals comprise about half of all appeals between 2002 and 2017. Thus, their absence from existing studies significantly limits the inferences that can be drawn from them. In the absence of reliable empirical data, commentators have been left to their own devices in making claims about the tenor of that jurisprudence.

In a famous article surveying the early history of amended Rule 23, Professor Miller claimed that, following an initial period of optimism about the effects of the rule on the quest for justice, the courts of appeals were more skeptical of class

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54. Emery G. Lee III & Thomas E. Willging, The Impact of the Class Action Fairness Act of 2005 on the Federal Courts: Fourth Interim Report to the Judicial Conference Advisory Committee on Civil Rules, FED. JUD. CTR. 1 (Apr. 2008), https://www.fjc.gov/content/impact-class-action-fairness-act-2005-federal-courts-fourth-interim-report-judicial-0 [https://perma.cc/7GDD-3ABC]. The results for diversity class actions removed to federal court were different, with an increase in the immediate post-CAFA period followed by a return to “levels similar to those in the pre-CAFA period.” Id. at 2.

55. See Klonoff, supra note 47, at 733 (claiming that appellate review increased after CAFA).

actions. This period lasted from 1969 to 1973 or 1974, during which there were many interlocutory appeals that stabilized “various aspects of rule 23 practice.”

Others writing about the first few decades of experience under Rule 23 remarked on the difficulty of identifying clear trends, arguing that circuits varied in their receptivity to class actions.

Scholars seem to have reached consensus, however, that in the decade preceding the promulgation of Rule 23(f), the courts of appeals were more likely to reverse than to affirm class certification orders. They differed, however, on the significance of the phenomenon they posited. Some suggested that the appellate courts were merely insisting on the rigor that the Supreme Court had called for in 1982, and “rein[ing] in overzealous grants” of certification. One scholar posited an “antiplaintiff bias among federal appeals judges,” a majority of whom had been nominated by Republican presidents.

Writing in 2016, Professor Klonoff asserted that the courts of appeals used their increased opportunities under Rule 23(f) to erect “significant roadblocks to class certification.” In the same article, however, he noted that some courts of appeals had resisted broad interpretations of the Supreme Court’s decisions in Wal-Mart and Comcast. Even more recently, he suggested that such decisions may reflect a backlash against overreaching by defendants or interest groups seeking further retrenchment of class actions.

Finally, Professor David Marcus reported the results of his analysis of every reported class certification decision in a federal public interest case between June 1969 and 1974. He found that, in the decade preceding the promulgation of Rule 23(f), the courts of appeals were more likely to reverse than to affirm class certification orders. They differed, however, on the significance of the phenomenon they posited. Some suggested that the appellate courts were merely insisting on the rigor that the Supreme Court had called for in 1982, and “rein[ing] in overzealous grants” of certification. One scholar posited an “antiplaintiff bias among federal appeals judges,” a majority of whom had been nominated by Republican presidents.

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Finally, Professor David Marcus reported the results of his analysis of every reported class certification decision in a federal public interest case between June

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58. See Bernstein & Berger, supra note 49, at 852–53 (attempting to identify a trend based on the “emerging state of the law on interlocutory appeals”); David Marcus, Erie, The Class Action Fairness Act, and Some Federalism Implications of Diversity Jurisdiction, 48 WM. & MARY L. REV. 1247, 1284, 1305 (2007) (reporting conflicting views among lawyers as to whether federal judges or state judges are more likely to grant certification); Andrew A. Wittenstein, Recent Development: The Rebuttable Presumption That Sherman Act Plaintiffs Are Entitled to Class Certification Under Rule 23, 62 CORNELL L. REV. 177, 187 (1976) (arguing that “it is difficult to note any clear trends” in receptivity to class actions).

59. See Mark S. Adams, Developing Class Action Strategies Based on Recent Key Decisions, in LITIGATING PRODUCTS LIABILITY CLASS ACTIONS: LEADING LAWYERS ON INTERPRETING RECENT DECISIONS, ASSESSING A CASE’S VALIDITY, AND PREPARING FOR TRIAL *12 (Aspatore Books 2011), Westlaw 5617993 (claiming that, as part of a steady trend that began with the Supreme Court’s decision in General Telephone Co. v. Falcon, 457 U.S. 147 (1982), federal appellate courts are “increasingly probing plaintiff’s [sic] claims and defendant’s [sic] defenses to determine whether a class should be certified”).

60. See Freer, supra note 22, at 14 (citing one appellate court case in support); see also Erhard, supra note 22, at 155 (noting that mandamus review was rare and usually used to decertify classes and citing four cases in support of this proposition).

61. Marcus, supra note 58, at 1304.


63. See id. at 1613, 1618. We follow Professor Klonoff in focusing on Wal-Mart’s holding concerning commonality under Rule 23(a)(2), recognizing, of course, that the Court in that case also rendered an important holding concerning the proper interpretation of Rule 23(b)(2).

64. See supra text accompanying note 16.
21, 2011 and March 31, 2020. Having noted his pessimism after the first three post-Wal-Mart appeals resulted in decertification orders,65 he continued:

But a hard pro-defendant turn in the doctrinal regulation of the public interest class action has not materialized. Since the last of the three initial cases, the federal circuits have decided 22 additional appeals involving the propriety of class certification. Plaintiffs have won 17 of these cases. . . . 66

Rejecting the notion that such success reflects “‘narrowing from below’—of lower federal courts fashioning a less intrusive interpretation of Wal-Mart to blunt its impact,” he argued that “Wal-Mart’s demand for ‘rigorous analysis’ has forced lawyers and judges to articulate with more precision the contours of the substantive rights that [certain types of] plaintiffs vindicate.”67

Klonoff and Marcus have in common a recognition that changes in appellate panels’ certification behavior over time may be a function of changes in the quality of cases they are deciding. This in turn may be a function of parties changing behavior in response to changes in the law, such as the Supreme Court’s decisions in Wal-Mart and Comcast.68 It is also likely that appellate panels are responding to changes in law in ways that lead them to decide comparable cases differently after a change in law than they did before. For example, they may be seeking to faithfully implement Supreme Court decisions, or to counteract Supreme Court decisions with which they disagree. We will not be able to untangle the multiple causal forces that may be at play. In light of all this complexity, our ambition is to offer a descriptive account of certification over time, not a causal one.

III
LONGITUDINAL PATTERNS IN CERTIFICATION DECISIONS

In our study, we examine both published and unpublished decisions. With respect to published (precedential) decisions, we endeavored to build a comprehensive dataset of U.S. Court of Appeals panel decisions addressing whether a class should be certified from 1966 (when the modern Rule 23 became effective) through 2017.69 With respect to unpublished (nonprecedential)


66. David Marcus, The Persistence and Uncertain Future of the Public Interest Class Action, 24 LEWIS & CLARK L. REV. 395, 409 (2020). See also Klonoff, supra note 47, at 1591 (“Overall, despite some setbacks, the cases give reason for some optimism. [Wal-Mart], no doubt, will pose obstacles in some cases, but the fact that important cases seeking structural relief continue to be certified is encouraging.”).

67. Marcus, supra note 66, at 417.

68. Even before those Supreme Court’s decisions, a number of Courts of Appeals had substantially enhanced the evidentiary requirements for class certification. See, e.g., In re Hydrogen Peroxide Antitrust Litigation, 552 F.3d 305 (3d Cir. 2008); In re IPO Securities Litigation, 471 F.3d 24 (2d Cir. 2006).

69 See Burbank & Farhang, supra note 19, at Appendix, Part I.A, for further details on data collection. As discussed in the Appendix to this Article, our data include certification decisions with respect to settlement classes. Our data do not, however, include en banc decisions, of which there were only sixteen during the study period.
decisions, we collected the same data from 2002 through 2017.\(^{70}\) In total, we identified 1,344 certification decisions.

Of course, published court of appeals decisions differ from unpublished decisions in important respects, and published decisions are not representative of all litigated cases.\(^{71}\) We can learn from both types of decisions. We are interested, in part, in the creation and development of law. Published court of appeals opinions are the vehicle through which circuits create and develop law that is binding on all subsequent panels and on all district courts in the circuit, while unpublished decisions have no precedential weight. In one set of models we will examine only published opinions.

We are also interested in the full universe of decided certification appeals. In addition to the possible unrepresentativeness of published decisions with respect to judicial behavior, there may be other selection processes at play when analyzing only published opinions. The same judges that render decisions in published opinions also decide whether the decisions will be published. This threatens to confound inferences about the relationship between explanatory variables and case outcomes when one studies only published decisions. Thus, we

\(^{70}\) The E-Government Act of 2002 required that federal circuits make opinions publicly available, allowing them to be included in commercial databases. According to Professor Andrew T. Solomon, the Fifth and Eleventh Circuits’ unpublished decisions were not consistently made publicly available until 2003 and 2005, respectively. See Andrew T. Solomon, Making Unpublished Opinions Precedential: A Recipe for Ethical Problems & Legal Malpractice?, 26 Miss. C. L. Rev. 185, 205–06 (2007) (“By 2005, every federal circuit released the full-text of its unpublished opinions.”). Our models that include unpublished opinions account for this. Burbank & Farhang, supra note 19, at Appendix, Part I.A.

While this article was in production, we became aware of forthcoming work that found fewer of certain types of appeals on commercial databases than the number reported by the Administrative Office of the U.S. Courts, casting doubt on the U.S. Courts of Appeals’ compliance with the E-Government Act of 2002. See Merritt E. McAllister, Missing Decisions, 169 U. Pa. L. Rev. (forthcoming 2021). Although Professor McAllister’s valuable study raises the specter of “serious sampling bias risks for empirical work at the circuit-level using commercial databases,” id. (manuscript at 56), it is not evident how his findings relate to our data. She studies only “terminations,” which would appear to exclude many, if not most, certification decisions. Id. (manuscript at 2 n.9). Further, McAllister examined the nature of missing cases only in the First Circuit, where 67% were criminal, and 49% were pro se. Id. (manuscript at 54). Although she does not report the percentage of missing cases with counseled civil plaintiffs, the foregoing percentages are consistent with the number being zero or miniscule. Consistent with this possibility, McAllister also found, again in the First Circuit, that “only a handful (if any) of these missing decisions involve the kinds of complex civil disputes that others have frequently observed receive the most attention from the federal appellate courts.” Id. (manuscript at 54); see id. (“none appeared to involve cases that had proceeded to oral argument”). Although class actions (always civil, infrequently pro se, and often complex) would appear not to be the type of case for which McAllister finds evidence of noncompliance with the E-Government Act of 2002, such noncompliance cannot be foreclosed without more evidence. Future empirical investigation will be necessary to reach confident conclusions. Finally, we note that this issue is not pertinent to what we report on published cases.

also examine models of published and unpublished decisions restricted to the circuit years for which we have complete data on both. In those models, unpublished decisions comprise about one-third of the cases. For the most part, but not always, the results look very similar to what we observe when analyzing only published decisions.

Our dependent variable is whether a decision is pro- or anti-certification. In order to code it, the certification analysis in each decision was read in full. We code a decision as pro-certification (=1) if the court of appeals affirms the trial court’s certification, reverses the trial court’s decision not to certify and directs it to certify, or reverses the trial court’s decision not to certify and remands for further proceedings on certification. We code a decision as anti-certification (=0) if the court of appeals affirms the trial court’s decision not to certify, reverses the trial court’s decision to certify and directs that a class not be certified, or reverses the trial court’s decision to certify and remands for further proceedings on certification.

A. Certification Over Time

1. The Volume of Final-Judgment and Interlocutory Appeals.

Figure 1 displays regression estimates of counts of all decisions and separately shows final-judgment appeals versus interlocutory appeals. The number of total published decisions grew steeply beginning in 1967, peaked in the late 1970s, and declined over the course of the 1980s and 1990s until the turn upward that followed the addition of Rule 23(f). Because the regression curve smooths over year-to-year fluctuations, it does not reveal sharp breaks in the data, and thus the raw underlying data are instructive. Inspecting the raw counts indicates that the post-Rule 23(f) counts began to grow in 2000. In the 1990s there were an average of twelve published decisions a year addressing certification; the number grew to twenty-two in 2000–2009 and to thirty-two in 2010–2017. By 2017, the estimated number of published decisions matched its peak in the late 1970s.

Interlocutory appeals comprised 14% of published decisions prior to 2000 and 57% of them from 2000–2017. In the domain of precedential decisions, final-judgment appeals dominated interlocutory appeals, comprising 86% of published decisions prior to 2000. Although this is consistent with conventional wisdom that securing interlocutory review was difficult during this period, we lack data on unpublished decisions prior to the addition of Rule 23(f), and thus we do not know the fraction of total appeals that were interlocutory during that period. We also lack data on the frequency with which interlocutory review was sought, which would be important to assessing the difficulty of securing it.

72. In published cases prior to 1998 (when Rule 23(f) came into effect), 86% of the appeals were final-judgment, 8% were interlocutory under Section 1292, 2% were interlocutory under a writ of mandamus, and an additional 3% were interlocutory but without the court identifying the jurisdictional basis.
We can say with confidence that interlocutory appeals were responsible for the lion’s share of the growth in published certification decisions following Rule 23(f). The trajectory of growth is also evident when unpublished decisions are added to the analysis from 2002–2017, during which time they constitute about one-third of the total in our data. During this period the decisions were fairly evenly balanced between interlocutory and final-judgment appeals.73


Figure 2 displays estimated counts of decisions separated by whether certification was sought as to a class asserting only a federal claim, only a state claim, or both federal and state claims. Because courts often fail to state the basis of jurisdiction, we found that claims in federal court under CAFA could not be reliably coded. However, such claims would be encompassed within cases seeking certification of state claims only. A substantial majority of published decisions on certification prior to 2005 were in cases seeking certification of federal claims only. After 2005, the number of decisions in cases seeking certification of state claims only grew threefold. In published and unpublished decisions in 2002–2017, certification decisions on state law-only classes grew more strongly, increasing

73. In published and unpublished decisions from 2002–2017, 49% were final-judgment appeals. Approximately 50% were interlocutory and cited Rule 23(f) as the jurisdictional basis or (in a small fraction of cases) cited no jurisdictional basis, which we assume arose under Rule 23(f). In only 2% did the court cite only §1292 as the jurisdictional basis for an interlocutory appeal, and none cited mandamus. Some of this 2% may have actually arisen under Rule 23(f). The Supreme Court promulgated Rule 23(f) pursuant to §1292(e), which provides that “The Supreme Court may prescribe rules . . . to provide for an appeal of an interlocutory decision to the courts of appeals that is not otherwise provided for under subsection (a), (b), (c), or (d).” Thus, at least some courts regard Rule 23(f) appeals as arising under §1292, e.g., Wachtel ex rel. Jesse v. Guardian Life Ins. Co. of Am., 453 F.3d 179, 184 (3d Cir. 2006), and it is possible that some courts cite only §1292 in a 23(f) appeal. It is clear that in the 2002–2017 period the vast majority of interlocutory appeals were under Rule 23(f).
fivefold and becoming as frequent as certification decisions on classes asserting only federal claims.

**Figure 2. Number of Decisions: Federal Law Only, State Law Only, and Federal and State Claims**

![Graph showing number of decisions for federal law only, state law only, and federal and state claims from 1967-2017.]

3. **Interlocutory Appeals and Rule 23(b)(3) Versus (b)(2) Classes**

We also examined whether the growth in availability of interlocutory review had a disproportionate impact on the proportion of appeals addressing (b)(2) versus (b)(3) classes. The notion that prior to Rule 23(f) parties would settle rather than litigate after a district court certification decision was particularly focused on damages classes under (b)(3). If this dynamic were at play, we would expect to see that (b)(3) classes are more likely to appear in appeals under interlocutory versus final-judgment review.

We found that opinions do not reliably identify the type of class for which certification is sought under Rule 23(b). This is especially true when the issues on appeal concern application of Rule 23(a). However, we can gain some insight from issues that appeared in the certification analysis. Coders identified whether opinions addressed the (b)(3) requirements of predominance and superiority, and whether they addressed (b)(2) requirements for an injunctive class. The percentage of such decisions that appeared in final-judgment and interlocutory appeals in published and unpublished opinions from 2002–2017 is displayed in Table 1, as is the information broken down by appeals by defendants only and appeals by plaintiffs only.
Table 1. Percentage of Final-Judgment versus Interlocutory Appeals in (b)(3) and (b)(2) Classes

<table>
<thead>
<tr>
<th>Type of Appeal</th>
<th>All Cases</th>
<th>Defendant Appeals</th>
<th>Plaintiff Appeals</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)(3) Final-Judgment</td>
<td>33%</td>
<td>40%</td>
<td>35%</td>
</tr>
<tr>
<td>(b)(3) Interlocutory</td>
<td>57%</td>
<td>58%</td>
<td>53%</td>
</tr>
<tr>
<td>(b)(2) Final-Judgment</td>
<td>10%</td>
<td>15%</td>
<td>7%</td>
</tr>
<tr>
<td>(b)(2) Interlocutory</td>
<td>14%</td>
<td>15%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Final-judgment appeals of certification decisions with respect to (b)(3) classes are far from aberrant. They occurred in 33% of the decisions—40% of those appealed only by defendants. This casts doubt on the notion that parties are rarely willing to litigate through to final judgment once a district court has certified or declined to certify a class. It is true, however, that (b)(3) issues are materially more likely to appear in interlocutory than final-judgment appeals. They were addressed in more than half of the interlocutory appeals in our data. We acknowledge, of course, that without knowing the size of the population of district court decisions on (b)(3) issues, we cannot know the rate of either type of appeal from the universe of potentially appealable decisions.\(^4\)

Appeals of decisions on whether to certify an injunctive class are much less frequent events. The difference in their frequency in final-judgment versus interlocutory appeals is small in absolute terms. They occurred in 10% of final-judgment appeals and 13% of interlocutory appeals. There was no difference in the frequency with which they appeared across the two types of appeals when only the defendant appealed. When only the plaintiff appealed the percentage grew from 7 to 12—significant in relative terms (a 71% increase) but small in absolute terms (a 5-percentage point increase).

4. Probability of Reversal in Interlocutory Versus Final-Judgment Appeals

Much of the empirical literature on Rule 23(f) has focused on comparing rates of reversal by courts of appeals in cases in which the district court certified as compared to when it denied certification. These studies treated the data cross-sectionally within blocks of time. Figure 3 shows rates of reversal of district court grants and denials of certification for published and unpublished opinions from 2002–2017. We focus only on this period because we want to compare reversals of grants versus denials of certification in all (not just published) interlocutory appeals, and to compare the results to those in final-judgment appeals.

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\(^4\) We considered the possibility that the percentage of (b)(3) final-judgment appeals may be materially affected by plaintiff-objector challenges to (b)(3) settlements, since approval of a settlement is a final judgment and plaintiff-objectors may challenge certification after that order is entered. This is not the case. The percentage of cases presenting each type of appeal is the same or nearly so when settlement classes are excluded: 33% are (b)(3) final-judgment, 57% are (b)(3) interlocutory, 9% are (b)(2) final-judgment, and 14% are (b)(2) interlocutory. Again, these numbers are based on cases in which the court actually reached a (b)(2) or (b)(3) issue.
In interlocutory appeals, the estimated probability of reversal of a district court grant of certification had been climbing steeply in the years before *Wal-Mart*, from 52% in 2002 to 71% in 2010. At the time *Wal-Mart* was decided, defendants had a very high rate of success in using interlocutory review to reverse grants of certification. After *Wal-Mart* the trend reversed. The probability declined precipitously by 39 percentage points to 32% in 2017. The pattern for reversals of denials of certification is less clear. It vacillated before *Wal-Mart* and showed no clear trend after it.

The figure makes clear that, prior to *Wal-Mart*, interlocutory appeals were far more frequently used to reverse grants of certification than to reverse denials. If (as some have suggested) this was the intended result of some advocates of Rule 23(f), the evidence is consistent with their hopes for about a decade after Rule 23(f) appeals began to grow in 2000. From 2002 to 2010, the average annual probability of reversing a grant was 64%, and the probability of reversing a denial was 35%. However, by the end of the series it had become slightly more likely that a denial of certification would be reversed as compared to a grant.

In final-judgment appeals, we observe a similar pattern of growth in the estimated probability of reversing a grant of certification at the beginning of the series, followed by a long decline. However, the decline begins earlier (in 2008), although it appears to have steepened after *Wal-Mart*. The size of the decline from the peak to the end of the series is 20 percentage points (about half the size of the 39-percentage point decline observed in interlocutory appeals). The probability of reversal of district court denials of certification was very low and fairly stable before *Wal-Mart*, averaging 14% from 2002–2010. It then turned up and rose to 27% by 2017, about doubling.

The figure makes clear that prior to *Wal-Mart*, as with interlocutory appeals, final-judgment appeals were far more frequently successful in reversing grants of certification than denials. From 2002 to 2010, the average annual probability of...
reversing a grant was 40%, as compared to the 14% probability of reversing a
denial. As with interlocutory appeals, by the end of the series it had become
slightly more likely that a denial of certification would be reversed as compared
to a grant.

5. Probability of Pro-Certification Outcomes by Partisan Majority

Figure 4 displays the probability of a pro-certification outcome in all cases,
and in cases with Democratic- versus Republican-majority panels. We limit the
data in published decisions to 1970–2017 because in the first several years of our
data, there are too few cases to provide meaningful estimates of outcomes. In
published decisions, there was a long-run, gradual decline in the estimated
probability of a pro-certification outcome. The probability declined from 46% in
1975 to 39% in the mid-1980s, where it remained relatively flat for two decades
before turning upward around 2007. It grew 21 percentage points by 2017, ending
the series with a 58% probability of certification—the highest in the forty-eight
year series.

Although Democratic- and Republican-majority panels started the 1970s
with a clear gap between them, the gap narrowed, and Democratic- and
Republican-majority panels were relatively close from the mid-1970s to the late-
1990s. The gap widened significantly at the end of the 1990s, at the same time
that Rule 23(f) came into effect. The widening gap between Democratic- and
Republican-majority panels also corresponds temporally to findings in our prior
work: that in about the mid- to late-1990s (1) there was a growing focus in the
Republican Party on restricting opportunities and incentives for private civil
actions in general, and class actions in particular, (2) Congressional Republicans
introduced a growing number of anti-class action bills, (3) important advocacy
groups associated with the Republican Party, specifically including business
groups and conservative law reform organizations, elevated their focus on
curtailing class actions, and (4) Supreme Court justices became more polarized
along ideological lines in their voting on Rule 23 issues.75

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75. See Burbank & Farhang, supra note 7, at 1524–28 (arguing that civil litigation retrenchment
generally and class action retrenchment in particular “became a more salient issue in the Republican
Party, and the locus of more partisan conflict,” beginning in the 1990s).
Surprisingly (to us), the distance between Democratic- and Republican-majority panels stabilized after around 2010, when the probability of a pro-certification outcome on Republican-majority panels began to grow steeply alongside that of Democratic-majority panels. The gap between them was an average of 23 percentage points from 2011 to 2017. At the end of the series, when in the posture of making law, both Democratic- and Republican-majority panels were at their highest probability of pro-certification outcomes in the forty-eight years covered by the data.

When unpublished decisions are added for the period of 2002–2017, the pattern is similar. Democratic- and Republican-majority panels are close together at the start, but the gap is already growing, with Republican-majority panels moving in an anti-certification direction. After about 2010 the probability turns upward for Republican-majority panels, and both types of panels grow increasingly likely to render pro-certification outcomes through the end of the series. They remain separated by an average of 23 percentage points from 2011 to 2017.

6. Probability of Pro-Certification Outcomes by Certification Issue

It is natural to wonder whether outcome patterns vary depending on the specific class action issues addressed by the court. Comcast is typically seen as taking a restrictive approach to predominance, and Wal-Mart is widely regarded as making commonality more difficult to satisfy. Figure 5 displays the probability of a pro-certification outcome separately for decisions in which (1) the court addressed an issue of commonality, (2) the court addressed an issue of predominance, and (3) the court evaluated certification but addressed neither issues of commonality nor predominance. The third category is limited to cases

76. See, e.g., id. at 1522-23.
that had no logical connection to the features of the Supreme Court’s reasoning in *Wal-Mart* and *Comcast* that divided the Court and elicited controversy.

**Figure 5. Outcomes by Certification Issues Addressed**

Viewing published decisions from 1970 to 2017, the presence of a commonality issue was associated with growing rates of pro-certification outcomes over the course of the three decades prior to the 2011 *Wal-Mart* decision. Rather than declining after *Wal-Mart*, the rate of pro-certification outcomes escalated more rapidly through the end of the series. In 2017, there was a 71% probability of a pro-certification outcome—a high point in the forty-seven-year series. The presence of a predominance issue was associated with declining rates of pro-certification outcomes from 1970 to 2000. Outcome rates were stable through 2005, and then escalated sharply by 21 percentage points to 54% in 2016 (before declining slightly in the last year). The probability of a pro-certification outcome in 2017 was equivalent to the probability in 1970.

In certification decisions that did not address either commonality or predominance issues, the probability of a pro-certification outcome declined from the mid-1970s to the mid-1980s, was stable until 2000, and increased by 18 percentage points through the end of the series. In 2017, there was a 52% probability of a pro-certification outcome, a high point in the series. In all three sets of cases the probability was rising prior to the *Wal-Mart* and *Comcast* decisions and continued rising to new heights after them.

When unpublished decisions are added to the analysis for 2002–2017, we observe some noteworthy differences at the end of the series. The upward trajectory in pro-certification outcomes in decisions with commonality issues continued growing through *Wal-Mart* in 2011. It peaked (at 60%) in 2015, but then declined to 50% in 2017. The previously growing rate of pro-certification outcomes in decisions addressing predominance issues plateaued at 46% for the three years following *Comcast*, and then declined by 5 percentage points in 2017. Viewing the two panels of the figure together, the plateau and/or decline in pro-certification outcomes for decisions presenting commonality and predominance
issues during the post-Wal-Mart and Comcast period is not present in decisions through which circuits are electing to make law. It appears to be driven by declining probability of pro-certification outcomes in unpublished decisions.

Thus, when all appeals are pooled in 2002–2017, the bivariate story is one of growing probability of pro-certification outcomes in cases presenting commonality or predominance issues prior to the Wal-Mart and Comcast decisions, and an arrest or reversal of that growth following the decisions. However, the passage of four years between Wal-Mart and the decline in probability of a pro-certification outcome in cases presenting a commonality issue certainly gives one pause in attributing the decline to Wal-Mart. With respect to Comcast, the arrest in the growth pattern is more proximate in time to the decision. In contrast, in cases presenting neither commonality nor predominance issues, the probability of a pro-certification outcome was stable at about 25% for the five years leading up to Wal-Mart in 2011, and then it more than doubled to reach 55% by 2017 with no plateau or decline.

B. Empirical Models

We use statistical models to further examine the relationship between outcomes in certification decisions, partisan majorities, interlocutory appeals, and post-Comcast certification outcomes. The models allow us to test the statistical significance, conditional on important control variables, of certain patterns that we observe in the bivariate figures. A key focus in the models is temporal change. We include an indicator variable measuring pre- and post-Comcast decisions. We are interested in the general question of whether plaintiffs seeking certification fared worse on appeal after Wal-Mart and Comcast, and the period after Comcast is the period during which both decisions were in effect. 77 We also include a linear time trend variable.

In the model of published decisions from 1967 to 2017, we include an indicator variable distinguishing the 1967–1994 period from the 1995–2017 period. As documented in our prior work, noted above, the mid-to-late 1990s saw increasing hostility towards and polarization surrounding class actions and Rule 23 issues from congressional Republicans, business groups, conservative law reform organizations, and some Supreme Court justices.

In addition to these temporal variables, we include variables indicating whether an appeal was interlocutory and whether the panel was majority-Democrat or majority-Republican. In one set of models, we include interactions between the partisan majority variable, the variables measuring whether the appeal was interlocutory, and whether it was post-Comcast. These interactions allow us to evaluate whether the effect of ideology on the probability of a pro-

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77. When one includes both post-Wal-Mart and post-Comcast indicator variables in the same model, the post-Comcast variable is consistently significant, and the post-Wal-Mart variable is consistently insignificant. Thus, the statistical models indicate that the March 2013 breakpoint, when Comcast was decided, better explains the growth in pro-certification outcomes than June 2011, when Wal-Mart was decided.
certification outcome was different in interlocutory appeals or after Comcast. Finally, the models also include a battery of control variables that is detailed in the Appendix, including circuit fixed effects, policy area, direction of the district court decision, numerous case characteristics, and the racial and gender composition of the panel.

1. Interlocutory and Post-Comcast Appeals

We initially examine models with the main effects of the variables described above, without the partisan majority interactions. In our model of published decisions over the full period of 1967–2017, the post-Comcast variable is significant and positive. It is associated with a 22-percentage point growth in pro-certification outcomes, increasing the probability from 40% to 62%. The year variable is significant and negative, associated with a reduction of one percentage point a year in the probability of a pro-certification outcome. Thus, conditional on many controls, when panels were making precedential decisions there was a long-run gradual negative time trend in the probability of a pro-certification outcome, with a sharp reversal to a substantially increased probability in the post-Comcast period.

The probability of a pro-certification outcome is 37% for Republican-majority panels and 50% for Democratic-majority panels, for a 13-percentage point swing. The 1995 dummy variable is insignificant, indicating that conditional on other variables in the model (including the linear time trend and post-Comcast variable), there was no statistically significant post-1994 change in the probability of a pro-certification outcome. Finally, whether an appeal is interlocutory is not significantly associated with a pro- or anti-certification outcome.

Turning to the model of all (published and unpublished) decisions in 2002–2017, the Democratic-majority and post-Comcast variables remain significant with both a larger party magnitude and a smaller post-Comcast magnitude, as compared to published decisions from 1967 to 2017. Democratic majorities are 19 percentage points more likely to produce pro-certification outcomes. Republican-majority panels do so at a rate of 28%, and Democratic-majority panels do so at a rate of 47%. In the post-Comcast period, the probability of a pro-certification outcome grew by 13-percentage points, from 31% to 44%. The time trend variable and the interlocutory variable are both insignificant in this model.

78. *Infra* Appendix, Table A-1, Model A.

79. We find much larger party effects when we compare panels with more specific partisan configurations (like all-Democrats versus all-Republicans). *See* Burbank & Farhang, *supra* note 19, at 260–61. In this Article we use only the party majority variable in order to facilitate the party majority interactions with the post-Comcast period and the interlocutory variable.

80. *Infra* Appendix, Table A-1, Model B.
2. The Relationship between Party and Interlocutory Appeals.

We next add interaction terms of the interlocutory variable with whether the panel had a Democratic majority, and the post-Comcast variable with whether the panel had a Democratic majority. These interaction variables tell us whether party has a distinctive association with outcomes (1) in interlocutory versus non-interlocutory decisions, and (2) in the post-Comcast versus pre-Comcast period. This answers the question whether judges were more or less ideological in interlocutory decisions and in the post-Comcast period.

We first examine the model of precedential decisions from 1967 to 2017. The interaction of the Democratic-majority and interlocutory variables disaggregates the variables into four possible combinations: final-judgment/Republican majority, final-judgment/Democratic majority, interlocutory/Republican majority, and interlocutory/Democratic majority. The predicted probabilities are displayed in Table 2. In final-judgment appeals, Republican-majority panels have a 41% probability of pro-certification outcome. This grows to 48% on Democratic-majority panels. In interlocutory appeals, the probability for Republican-majority panels declines from 41% to 29%. On Democratic-majority panels, it increases from 48% to 56%. The gap between Republican- and Democratic-majority panels grows from only 7% in final-judgment appeals to 27% in interlocutory appeals. This difference is statistically significant.

Table 2. Predicted Probabilities of Pro-Certification Outcome by Appeal Type & Partisan Majority, Published Cases 1967–2017

<table>
<thead>
<tr>
<th></th>
<th>Rep. Majority</th>
<th>Dem. Majority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Judgment</td>
<td>41%</td>
<td>48%</td>
</tr>
<tr>
<td>Interlocutory</td>
<td>29%</td>
<td>56%</td>
</tr>
</tbody>
</table>

We see parallel results in the model of all decisions in 2002–2017 with the interactions included. The predicted probabilities are displayed in Table 3. Again, Republican-majority panels have a lower probability of pro-certification outcomes in interlocutory as opposed to final-judgment appeals (although the difference is small), and Democratic-majority panels have a higher probability of certifying in interlocutory than in final-judgment appeals. Democratic-majority panels are more likely to certify than Republican-majority panels by 12 percentage points in final-judgment appeals. This gap grows substantially to 26 percentage points in interlocutory appeals.

Table 3. Predicted Probabilities of Pro-Certification Outcome by Appeal Type & Partisan Majority, Published & Unpublished Cases 2002–2017

<table>
<thead>
<tr>
<th></th>
<th>Rep. Majority</th>
<th>Dem. Majority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Judgment</td>
<td>30%</td>
<td>42%</td>
</tr>
<tr>
<td>Interlocutory</td>
<td>26%</td>
<td>52%</td>
</tr>
</tbody>
</table>

81. Infra Appendix, Table A-1, Models C & D.
82. Infra Appendix, Table A-1, Model C.
We conclude that court of appeals judges vote more ideologically in interlocutory appeals. We cannot explain with confidence why this is so. It may be that granting interlocutory review selects cases with characteristics (such as the size of the stakes, or legal indeterminacy) that elicit more ideological voting, or it may be that the presentation of the certification issue early in the litigation as opposed to post-final judgment does so, or both. Whatever the mechanism, this result shows that Rule 23(f) contributed to the growing distance between Republican- and Democratic-majority panels beginning in around 2000. The number of interlocutory appeals grew sharply after Rule 23(f) went into effect (Figure 1). Interlocutory appeals were associated with more ideological voting, and Democratic- and Republican-majority panels grew more distant in their probability of pro-certification outcomes (Figure 4).  

3. The Relationship between Party and Post-Comcast Certification

The interaction of the post-Comcast variable with the Democratic-majority variable is clearly insignificant in both the 1967–2017 model of published decisions and the 2002–2017 model of all decisions. This result shows that the large post-Comcast growth in probability of pro-certification outcomes was not distinctively driven by Democratic- or Republican-majority panels. Both saw a comparably large magnitude of growth in their probability of pro-certification outcome after Comcast. It was a co-partisan development, as reflected in Figure 4.

4. The Relationship Between Post-Comcast Certification and the Rule 23 Certification Issues Presented

Although Wal-Mart's focus was on commonality and Comcast's was on predominance, thus far in evaluating the post-Comcast effect we have not been distinguishing between issues presented. We examined a series of models in which we interacted the post-Comcast variable with issue variables measuring whether the court addressed (1) predominance or commonality, (2) predominance but not commonality, and (3) commonality but not predominance. We did so in both the 1967–2017 model of published decisions, and the 2002–2017 model of all decisions. These interactions test whether the designated issues have a distinctive relationship with outcomes post-Comcast that is not captured by the main effects of the issue variables and the post-Comcast variable. The interactions were all clearly insignificant.  

83. This does not mean, however, that Rule 23(f) is the sole cause of the growing distance between Democratic- and Republican-majority panels in the 2000s. When we examine a version of Figure 4 based only on final-judgment appeals, we continue to see clear evidence of a widening distance between Democratic- and Republican-majority panels. Thus, Rule 23(f) contributed to, but does not by itself explain, the marked growth in ideological voting on certification issues in the 2000s.

84. We added these variables to infra Appendix, Table A-1, Models C & D. This is also true of cases presenting a commonality issue when we use a post-Wal-Mart (instead of post-Comcast) dummy variable and its interaction with the commonality issue variable.
post-Comcast that was statistically distinguishable from the pre-Comcast period. The post-Comcast growth in probability of certification cut across issue areas and clearly extended beyond predominance and commonality.

Finally, we noted when discussing the figure of outcomes by issue type (Figure 5) that the 2002–2017 bivariate data on both published and unpublished decisions looked consistent with a post-Comcast arrest in the previous upward trajectory in the probability of pro-certification outcomes in cases presenting commonality and predominance issues (but not other issues). However, the models with controls that we just discussed tell us that decisions that addressed commonality and predominance issues were not statistically distinguishable from those that did not. It is certainly possible that, if we had more post-Comcast years of data, we would detect that the post-Comcast growth in probability of pro-certification outcome for this subset of cases is statistically distinguishable from other issue areas.

5. The Relationship Between Post-Comcast Certification and Direction of District Court Decision

As we have discussed, some have suggested that in the wake of Wal-Mart and Comcast, defendants were emboldened to overreach by pressing weaker arguments for denial of certification, and that plaintiffs elevated the quality of their advocacy for certification.85 Such changes in the quality of defendants’ and plaintiffs’ positions in the post-Comcast period could explain the post-Comcast growth in probability of a pro-certification outcome on the courts of appeals. This may have happened because defendants pressed weaker arguments on appeal when certification was granted in the district court, or because plaintiffs pressed stronger arguments on appeal challenging denial of certification in the district court. It is also possible that, independent of such party selection effects, trial courts on average interpreted Wal-Mart and Comcast in a more anti-certification direction than that preferred by the courts of appeals. This would produce an elevated probability of reversing certification denials (where the plaintiff wins) and a declining probability of reversing certification grants (where the defendant wins). Our data cannot adjudicate among these causal theories.

We can, however, explore some aspects of the data implicated by these theories. Figure 3, depicting rates of reversal over time, showed that in the post-Wal-Mart and Comcast period defendants achieved lower rates of reversal of certification, and plaintiffs achieved higher rates of reversal of denials of certification. The former is consistent with appellate panels’ perception that defendants were bringing weaker appeals, and the latter is consistent with their perception that plaintiffs were bringing stronger appeals.

We now test whether the relationship between the direction of the district court decision (grant or denial of certification) had a statistically distinguishable relationship with the probability of reversal after Comcast, as compared to

85. This could, of course, include not pursuing certification at all in weaker cases.
before. We do so in the same statistical model with controls used to estimate outcomes (described above and in the Appendix), but we use reversal (as opposed to outcome) as the dependent variable. We run this model only on decisions that were appealed by only the defendant, or only the plaintiff (92% of the cases), dropping cases in which both plaintiff and defendant appealed, or objectors or intervenors appealed (8% of the cases, primarily with objector-appellants). We do this to allow a clear interpretation that reversals of certification are defendant wins, and reversals of denial of certification are plaintiff wins. In alternative specifications we ran the reversal models on all cases, regardless of appellant, and the results were nearly identical.

The battery of independent variables in the model includes the direction of the district court outcome (grant versus denial), the post-Comcast variable, and their interaction. The interaction captures whether the direction of the district court outcome had a distinctive association with probability of reversal in the post-Comcast period. The interaction was statistically insignificant in the model of published decisions in 1967–2017, but it was highly statistically significant (with a very large effect) in the 2002–2017 model of all decisions.\(^{86}\)

The interaction of the district court outcome and the post-Comcast variable disaggregates the variables into four possible combinations: Pre-Comcast/District Court (DC) denial of certification, Pre-Comcast/DC grant of certification, Post-Comcast/DC denial of certification, and Post-Comcast/DC grant of certification. The predicted probabilities of reversal associated with each combination are presented in Table 4. In the pre-Comcast period, the courts of appeals were 23 percentage points more likely to reverse when reviewing a grant of certification as compared to a denial of certification. Defendants were far more likely to secure reversal.

<table>
<thead>
<tr>
<th></th>
<th>Pre-Comcast</th>
<th>Post-Comcast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC Denial</td>
<td>DC Grant</td>
</tr>
<tr>
<td>Pre-Comcast</td>
<td>27%</td>
<td>50%</td>
</tr>
<tr>
<td>Post-Comcast</td>
<td>42%</td>
<td>42%</td>
</tr>
</tbody>
</table>

In the post-Comcast period this large defendant advantage vanished. Panels had the same probability of reversing grants and denials of certification. Moving from pre- to post-Comcast, plaintiffs’ probability of securing reversal of a denial of certification grew from 27% to 42% (a positive movement of 15 percentage points), while defendants’ probability of securing reversal of a grant of certification declined from 50% to 42% (a negative movement of 8 percentage points). Thus, the model results indicate that the larger share (about two-thirds) of the movement in court of appeals reversal behavior that erased defendants’ prior 23-percentage point advantage came from cases in which defendants had

\(^{86}\) Infra Appendix, Table A-1, Models E & F.
persuaded the trial court to deny certification, but the court of appeals found their position wanting.

Our finding that plaintiffs and defendants secured reversal at an indistinguishable rate post-Comcast in all appeals (both interlocutory and final-judgment) is in general accord with Professor Lammon’s conclusion, in his study covering 2013–2017, that courts of appeals reversed grants and denials at the same rate in Rule 23(f) appeals that reached the merits. However, the radically different results for the pre-Comcast period highlight the dangers of ignoring time. Relative reversal rates across grants and denials changed dramatically over time and may well do so again in ways that we cannot now anticipate. General inferences about who benefits from or is disadvantaged by the greater frequency of appellate review under Rule 23(f) are not warranted by our data.

Who benefits from more frequent appellate review appears to be quite contingent. It is likely contingent on the behavior of the parties and the way they respond to changes in the legal environment. The overreach hypothesis proposed by Professor Klonoff suggests that in the post-Wal-Mart and Comcast period, defendants pressed weaker arguments both before district courts and on appeal, leading to an increasing plaintiff win rate. Professor Marcus adds the possibility that in the same period plaintiffs’ lawyers elevated the quality of their advocacy for certification, leading to an increasing plaintiff win rate. Another potential factor is that trial courts adopted a more anti-certification interpretation of Wal-Mart and Comcast than did the courts of appeals, increasing the plaintiff win rate on appeal. Indeed, it may be that the courts of appeals read Wal-Mart and Comcast more narrowly than would be preferred by the majorities in those cases. These views, of course, are not mutually exclusive. Our data are consistent with each and cannot adjudicate among them. Perhaps ironically (given advice on behalf of the Chamber of Commerce), Rule 23(f) was an important weapon that plaintiffs wielded to beat back some success that defendants enjoyed before trial courts in the aftermath of Wal-Mart and Comcast.

The possibility of these dynamics highlights another caution in our ability to draw the inference, from comparable win rates, that plaintiffs fare as well as defendants under Rule 23(f) in the post-Comcast period. The arguments of Klonoff and Marcus suggest a more general point: the average quality of arguments presented by defendants versus plaintiffs may vary systematically over time in response to changes in the legal environment, such as changes in appellate law and legal strategy in the defense or plaintiffs’ bar. This would confound the

87. Lammon, supra note 38, at 45 (“the rates at which courts grant Rule 23(f) petitions for plaintiffs and defendants are similar, and the rate of reversal is more or less the same.”).
88. See supra note 16 and accompanying text.
89. See supra text accompanying note 67.
90. See supra text accompanying note 37.
91. In the post-Comcast period, of plaintiff appeals from district court denials of certification that were reversed, 53% were interlocutory. We do not suggest that plaintiffs’ post-Comcast gains came only in interlocutory appeals, but rather that such appeals contributed amply to them.
notion that comparable win rates mean that courts are being evenhanded as between plaintiffs and defendants. If the defendant (or plaintiff) side systematically presses weaker arguments and succeeds at the same rate as the plaintiff (or defendant) side that is making stronger arguments, they are doing better, not the same. Regrettably, this is but one instance of the more general problem that selection processes that generate the body of decided appeals, and the way they change over time, make win rates very difficult to interpret.

IV

CONCLUSION

In the domain of precedential decisions, final-judgment appeals dominated interlocutory appeals prior to 2000. The number of both published and unpublished decisions grew steeply in the wake of Rule 23(f), and interlocutory appeals contributed the lion’s share of this growth. However, interlocutory appeals have not come to dominate final-judgment appeals. Interlocutory and final-judgment appeals were in rough parity in the 2002–2017 period. After CAFA was passed in 2005, the number of decisions in cases seeking certification of state claims only also grew steeply. Finally, we observed that final-judgment appeals in (b)(3) classes are far from aberrant—they constitute a significant portion of all final-judgment appeals in 2002–2017—but that (b)(3) issues are materially more likely to appear in interlocutory appeals.

Prior to Wal-Mart, interlocutory appeals were far more frequently used to reverse grants of certification than to reverse denials. After Wal-Mart the trend reversed, and by 2017 reversal rates were comparable for grants and denials of certification by district courts. The picture looked broadly similar for final-judgment appeals. The estimated probability of pro-certification outcomes grew steeply over about the last decade of our data, a period during which many commentators (often citing Wal-Mart and Comcast) have regarded the legal environment as hostile to certification. Interestingly, after around 2010, increasingly pro-certification outcomes on Republican-majority panels contributed to this development, joining an already ongoing pro-certification trend on Democratic-majority panels. Statistical models show that, in the period during which both Wal-Mart and Comcast were governing law, the defendant advantage in achieving reversal disappeared, and there was a higher probability of pro-certification outcomes than before.

Finally, we observed that in the mid- to late-1990s in published cases, and the early 2000s in all cases, Democratic- and Republican-majority panels grew markedly more polarized on certification issues (measured as the distance between their probabilities of pro-certification outcomes). This polarization was sustained even while both grew more pro-certification. This temporal pattern of polarization is similar to what we found in earlier work on the Supreme Court in private enforcement cases in general, and in Federal Rules cases in particular. In

the statistical models, we observe that party has a larger effect in interlocutory appeals (the gap between Democratic and Republican-majority panels is larger). Thus, the growing number of interlocutory appeals under Rule 23(f) in the 2000s contributed to the polarization we document. In this sense, one consequence of Rule 23(f) was to inject more ideology into class certification on the U.S. Courts of Appeals.
APPENDIX

In all of the logistic models reported below, the following control variables were included:

- **Trial court outcome**: Indicator variable reflecting whether the trial court certified the class (or portion of the class) that is under consideration by the court of appeals.

- **Trial judge sitting by designation**: Indicator variable recording whether there was a trial judge sitting by designation on the panel.93

- **Defendant type**: Non-mutually exclusive indicator variables measuring whether certification was sought with respect to a federal defendant, state defendant, business defendant, or other type of defendant.

- **Law type**: Mutually exclusive indicator variables measuring whether certification was sought for claims arising under federal law, state law, or both.

- **Class type**: Mutually exclusive indicator variables measuring whether certification was sought for a plaintiff class, a defendant class, or both.

- **Policy area**: Mutually exclusive indicator variables reflecting policy area. Our policy classifications are: civil rights-discrimination, civil rights-prisoner, civil rights-other, labor and employment, consumer, product liability, environmental and toxic substances, antitrust, securities, insurance, and public benefits. Remaining policy areas each comprised less than 2% of the data, and we aggregated them into an “other” policy category.

- **Certification versus decertification**: Indicator variable recording whether the court was deciding a motion to certify or a motion to decertify.

- **Circuit fixed effects**: Circuit fixed effects (dummy variables for each circuit) account for any time-varying covariates that take the same value for each judge on a panel within the circuit. This controls for factors that vary across circuits that are associated with certification, such as circuit doctrine that may have a pro- or anti-certification slant and variation in the size and content of caseloads across circuits.

- **Publication**: Indicator variable in models of both published and unpublished decisions reflecting whether a decision is precedential.

- **Gender composition**: Indicator variables measuring where there were one, two, or three women serving on the panel.94

- **Racial composition**: Indicator variables measuring where there were one or two African Americans serving on the panel (there were never three).95

93. We say “trial judge” rather than district judge because judges from the Court of Claims and the International Court of Trade also sit by designation.

94. We obtained this information from Biographical Directory of Article III Federal Judges, 1789-Present, FED. JUD. CTR., https://www.fjc.gov/history/judges [https://perma.cc/6NSX-YD4W].

95. Id.
Coefficients in logit models cannot be directly interpreted, and thus it is necessary to compute predicted changes in probability of outcomes associated with a change in levels or categories of independent variables (such as the change from pre- to post-Comcast). The predicted probabilities discussed in the paper are derived from the models in Table A-1. Model A (1967–2017, published cases) and Model B (2002–2017, all cases) in Table A-1 present the basic models of pro-certification outcomes with only the main effects of the independent variables of interest. In these models, the independent variables capture the average relationship between the independent variable and the dependent variable over the period covered by the model, conditional on other covariates.

**Table A-1. Logit Model of Certification Outcomes & Reversals**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1995 Dummy</td>
<td>.52 (.35)</td>
<td>—</td>
<td>.55 (.35)</td>
<td>—</td>
<td>1.37*** (.39)</td>
<td>—</td>
</tr>
<tr>
<td>Year</td>
<td>-.05*** (.01)</td>
<td>-.003 (.04)</td>
<td>-.05*** (.01)</td>
<td>-.0002 (.04)</td>
<td>-.06*** (.01)</td>
<td>-.02 (.04)</td>
</tr>
<tr>
<td>Comcast</td>
<td>1.07*** (.27)</td>
<td>.70** (.35)</td>
<td>1.08*** (.33)</td>
<td>.72* (.42)</td>
<td>.85** (.35)</td>
<td>.78* (.42)</td>
</tr>
<tr>
<td>Interloc</td>
<td>-.18 (.17)</td>
<td>.10 (.22)</td>
<td>-.59*** (.22)</td>
<td>-.24 (.30)</td>
<td>1.53*** (.23)</td>
<td>1.47*** (.33)</td>
</tr>
<tr>
<td>Democrat Majority</td>
<td>.62*** (.15)</td>
<td>.99*** (.24)</td>
<td>.33* (.18)</td>
<td>.64* (.37)</td>
<td>.46** (.19)</td>
<td>.66* (.38)</td>
</tr>
<tr>
<td>Dem. Maj * Comcast</td>
<td>—</td>
<td>—</td>
<td>.02 (.42)</td>
<td>-.04 (.42)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Dem Maj * Interloc</td>
<td>—</td>
<td>—</td>
<td>.96*** (.32)</td>
<td>.73* (.42)</td>
<td>-.91*** (.31)</td>
<td>-.91** (.45)</td>
</tr>
<tr>
<td>DCt Outcome</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.13 (.17)</td>
<td>1.18*** (.30)</td>
</tr>
<tr>
<td>DCt Outcome * Comcast</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>-.62 (.42)</td>
<td>-1.19*** (.43)</td>
</tr>
</tbody>
</table>

All models include circuit fixed effects, policy area fixed effects, and independent variables measuring direction of the trial court outcome, trial judge sitting by designation, defendant type (federal government, state government, business, other), law type (federal law, state law, both), type of class for which certification was sought (plaintiff, defendant, both), whether the motion was for certification or decertification, and dummy variables measuring whether there were one, two, or three women serving on the panel, and whether there were one or two African Americans serving on the panel. Models B, D, and F additionally contain a variable indicating whether the case was published.

<table>
<thead>
<tr>
<th>N=</th>
<th>1095</th>
<th>586</th>
<th>1095</th>
<th>586</th>
<th>1012</th>
<th>531</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudo R²</td>
<td>.12</td>
<td>.19</td>
<td>.13</td>
<td>.20</td>
<td>.10</td>
<td>.19</td>
</tr>
</tbody>
</table>

***p < .01; **p < .05; *p < .1
In Models C to F, the focus is on interactions of independent variables, such as the interaction of interlocutory and Democratic-majority. We discuss the predicted probabilities associated with the significant interactions of interest in the body of the paper. While we do not discuss the main effects of the interacted variables, we note that their meaning changes very significantly relative to their meaning without the interaction. For example, in models with the interlocutory variable interacted with Democratic-majority, the interlocutory variable no longer captures the average effect of interlocutory, but rather captures only the effect of an appeal being interlocutory (interlocutory=1) when the panel is majority Republican (Democratic-majority=0), with the reference category being final-judgment appeals (interlocutory=0) decided by Republican majorities (Democratic-majority=0).

Models C and D replicate Models A and B, but with the addition of the interaction of interlocutory with Democratic-majority, and the interaction of post-Comcast with Democratic-majority. Models E and F then substitute reversal as the dependent variable. The significant interaction of interlocutory and Democratic-majority is retained, and the insignificant interaction of Comcast and Democratic-majority is dropped.

We include in our data certification decisions of settlement-only classes (which comprise 3.9% of our cases). It is arguable that when plaintiff-objectors are challenging matters on which named plaintiffs and defendants agree, the appeal does not present a question that can be appropriately described as pro- or anti-certification. Our approach to the data is to include all certification questions rather than selecting cases out of the data based on our expectations about how they will align with judicial preferences on certification. Nevertheless, we examined alternative specifications of Models A to D (which have pro- versus anti-certification as the dependent variable) that included an independent variable measuring whether the appeal was by a plaintiff-objector. The variable was insignificant in every model. The independent variables displayed for each model in Table A-1 remained within the same significance levels, and the significant variables were associated with very similar magnitudes. Plaintiff-objectors are not affecting our results. In Models E and F (which have reversal as the dependent variable) we restrict analysis to appeals brought only by plaintiffs (not including objectors), or only by defendants, because that is called for by the hypotheses being tested in those models.