

Are Judges Tied to the Past?

Evidence of the Judicial Sunk-Cost Effect in Appellate Decision-making

*Shay Lavie**

Are judges tied to the past? To test whether appellate judges are unduly influenced by past and irrelevant investment of judicial resources at the trial level, this study uses a methodological innovation: it focuses on reversal rates of questions of jurisdiction. As jurisdictional questions are independent of the merits, their resolution should not be affected by investment of judicial resources on the merits. Nonetheless, the study finds that jurisdictional questions are less likely to be reversed when more judicial resources were spent on the merits at the trial court. This sunk-cost effect is non-trivial in size and robust under various specifications. The article suggests possible remedies and discusses alternative explanations.

“[R]easonable caution is needed to be sure that mooted litigation is not pressed forward ... solely in order to obtain reimbursement of sunk costs.”

~ Lewis v. Continental Bank Corp., 494 U.S. 472, 480 (1990)

“[A]rgument from sunk costs [to the judicial system] does not license courts to retain jurisdiction over cases in which one or both of the parties plainly lack a continuing interest.”

~ Friends of the Earth v. Laidlaw, 528 U.S. 167, 192 (2000)

I. INTRODUCTION

Defendant raises a preliminary defense. The trial court denies, and proceeds to the merits. Defendant loses, appeals, and reiterates the same preliminary defense. Does the appellate court decide the preliminary defense as if no resources were spent on the merits of the case? Or, is it tied to past judicial resources spent deciding the merits, and hence less inclined to reverse preliminary rulings that were followed by a long trial?

* SJD candidate, Harvard Law School. E-mail: slavie@sjd.law.harvard.edu.

This study demonstrates that appellate judges are less likely to reverse when previous judicial resources were expended, even though these resources are already sunk and irrelevant. The article argues that these findings can be attributed to the “judicial sunk-cost effect”; that is, past investment of judicial resources overly influences appellate courts.

As this phenomenon is pertinent to any situation in which previous decisions are reviewed later in time, the judicial sunk-cost effect has vast implications. It leads appellate judges to deny appeals that should have been accepted; it may prevent judges from overruling outdated precedents;¹ explain the reluctance to allow new trials and grant writs of habeas corpus; account for the tendency of trial judges to stick to their prior determinations upon a remand; and so forth.

Despite these far-reaching implications, legal literature has given only scant attention to the judicial sunk-cost effect.² Neither has there been any attempt to find evidence of it.³

¹ See Rafael Gely, *Of Sinking and Escalating: A (Somewhat) New Look at Stare Decisis*, 60 U. PITT. L. REV. 89 (1998).

² One commentator appears to draw a similar assumption while claiming that the *stare decisis* tradition reflects a sunk-cost effect (Gely, *supra* note 1); in a similar vein, a recent article suggests that *stare decisis* is a cognitive error (Goutam U. Jois, *Stare Decisis is Cognitive Error*, 75 BROOK. L. REV. (forthcoming 2010)). Neither of these articles proceeds to other areas of law or tries to prove the underlying assumption empirically. Another article, David E. Cole, *Judicial Discretion and the “Sunk Cost” Strategy of Government Agencies*, 30 B. C. ENVTL. AFF. L. REV. 689 (2003), warns that agencies might manipulate courts by sinking large amounts of money into illegal projects. The sunk-cost effect is by no means unknown to the legal literature, though discussed in other, non-judicial, contexts (*see*, for instance, Samuel Issacharoff & George Loewenstein, *Second Thoughts About Summary Judgment*, 100 YALE L. J. 73, 113-114 (1990) (arguing that the sunk-cost effect impedes litigants who invest considerable money from settling)).

³ In recent articles, Magnus Söderberg traces “status quo” bias of individual administrative judges who stick to their prior determinations, particularly when the law is unsettled; this bias is eliminated when judges are rotated. *See* Magnus Söderberg, *Uncertainty and Regulatory Outcome in the Swedish Electricity Distribution Sector*, 25 EUR. J. LAW ECON. 79 (2008); Magnus Söderberg & David Round, *Dynamic Influences on Legal Dispute Settlements: The Case of Regularity Decisions in Sweden* (unpublished paper,

The paucity of the empirical evidence can be explained by methodological difficulties. In the context of appeals, for example, the sunk-cost effect should lead to lower reversal rates when more judicial resources are invested by the trial court. However, this correlation has a strong alternative explanation: a larger investment of judicial resources might indicate better decision-making, which should receive greater deference. A proper study, then, should examine the effect of past investments, isolating the bias from the proxy of the merits.

This article attempts to overcome this methodological difficulty by focusing on questions of subject-matter jurisdiction. As the article explains in further detail, jurisdictional questions typically possess several unique characteristics: they are non-waivable; essential to adjudication; and decided at the outset of the litigation in the trial court. In short, jurisdictional resolutions are independent of the merits and should not be affected by investment of judicial resources on the merits.

Against this backdrop, I created a database containing 375 appellate-court decisions in which the trial court's subject-matter jurisdiction was challenged. Using the procedural posture in which the case ended at the lower court to represent investment of judicial resources on the merits, I find that the more resources that are invested, the less likely the appellate court is to reverse the underlying jurisdictional determination. This correlation is statistically significant, non-trivial in size, and robust under various specifications.

Having found evidence of the judicial sunk-cost effect, the article suggests several modifications in legal procedure to cope with it. The most effective tool would be to

on file with author). Note that these papers do not relate the status quo bias to a prior investment in judicial resources.

avoid sunk-cost errors ex-ante, before the additional investment of judicial resources. This can be achieved through reforming the final-judgment rule, as a broader right to interlocutory appeals should prevent unreviewed investment of judicial resources.

The results, however, can be explained by alternative hypotheses. First, the empirical findings are based on the unique features of jurisdictional determinations. What if judges say “jurisdiction,” but really mean something else? In that case, this article argues, interlocutory appeals might still be beneficial, as they encourage more accurate and predictable decision-making. Second, the findings can be explained by trial judges’ and/or litigants’ behavior. On costly trials, for instance, trial judges and litigants may invest more efforts in resolving jurisdiction.

The structure of the article is as follows. Part II describes the theoretical framework, the methodology, and the results. Part III discusses the legal implications. Part IV examines alternative explanations. Part V concludes. The Appendices contain statistical data.

II. THE JUDICIAL SUNK-COST EFFECT

A. Theoretical Framework

Rationally, people should avoid fixed, already-incurred, and irrelevant costs while deciding to move forward.⁴ Acting contrary to the dictates of utility theory, people often do take these costs into account.⁵ This is the “sunk-cost effect,” causing decision-makers

⁴ See, e.g., Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1124 (2000).

⁵ In an illustrative experiment it was found that people ate less when they received a refund for an “all-you-can-eat” lunch, compared to those who had to pay for it themselves (see RICHARD H. THALER, *QUASI RATIONAL ECONOMICS* 11-13 (1991)).

to be overly committed to a prior course of action. The behavioral literature suggests several explanations for the sunk-cost effect which can be grouped under three headings:

- Cognitive: People tend to justify a previous course of action.⁶ This is relevant to the judicial context, as previous experiments have found that federal judges are not immune to cognitive biases.⁷
- Social: The sunk-cost effect also stems from the need of decision-makers to rationalize their actions to others,⁸ *i.e.*, not to appear wasteful.⁹ Similarly, when social norms favor consistency, the sunk-cost effect is stronger.¹⁰ This explanation seems relevant to the judicial context, to the extent that wastefulness and inconsistency (or the appearance thereof) reduce litigants' and the public's confidence in courts.¹¹
- Structural/Organizational: Due to administrative inertia, deviation from a heavily invested course of action yields administrative tension and is less likely to occur.¹² This

⁶ See Barry M. Staw & Jerry Ross, *Behavior in Escalation Situations: Antecedents, Prototypes and Solutions*, 9 J. ORGAN. BEHAV. 39, 48-55 (1987).

⁷ See, e.g., Chris Guthrie, Jeffrey J. Rachlinski, Andrew J. Wistrich, *Inside the Judicial Mind*, 86 CORNELL L. REV. 777 (2001) (finding several cognitive biases among federal judges (though not discussing the sunk-cost effect)).

⁸ Jerry Ross & Barry M. Staw, *Organizational Escalation and Exit: Lessons from the Shoreham Nuclear Power Plant*, 36 ACAD. MANAGE. J. 701, 717 (1993).

⁹ Hal R. Arkes & Catherine Blumer, *The Psychology of Sunk Cost*, 35 ORGAN. BEHAV. HUM. DEC. 124, 125 (1985); Brian H. Bornstein & Gretchin B. Chapman, *Learning Lessons From Sunk Costs*, 1 J. EXP. PSYCHOL-APPL. 251, 252-253 (1995); Hal R. Arkes & Peter Ayton, *The Sunk Cost and Concorde Effects: Are Humans Less Rational Than Lower Animals?*, 125 PSYCHOL. BULL. 591, 598-599 (1999).

¹⁰ Staw & Ross, *supra* note 6, at 57-59.

¹¹ In the same vein it was argued that reversing a decision might generate a new – and inconsistent – decision, hence allegedly “[introducing] misgivings about the judicial system that will undermine its legitimacy” (Qian A. Gao, *Note: “Salvage Operations Are Ordinarily Preferable to the Wrecking Ball”*: *Barring Challenges to Subject Matter Jurisdiction*, 105 COLUM. L. REV. 2369, 2389 (2005)). *Cf.* also the “judicial legitimacy” and the “system justification theory” arguments for overly sticking to precedents (Jois, *supra* note 2).

¹² Staw & Ross, *supra* note 6, at 59-63, in particular at 61-62.

explanation seems relevant to several contexts of judicial decision-making. In particular, proximity among judges might hinder them from reversing each other's heavily invested decisions.

The sunk-cost effect, then, affects both individuals and organizations;¹³ actually, group discussion might exacerbate the sunk-cost effect.¹⁴ However, the sunk-cost effect is reduced – but not eliminated – when consecutive decisions are made by different decision-makers.¹⁵

B. Methodology and Difficulties

This research looks into a correlation between reversal rates and invested judicial resources at the trial court. However, such correlation does not necessarily indicate a sunk-cost effect, as it can reflect alternative phenomena: more judicial investment at the trial level may indicate that the trial judge had a better knowledge of the facts, and reached a more accurate outcome. Prior judicial investment is neither irrelevant nor sunk, and appellate judges, who desire to maximize their leisure, would take a larger judicial input at the trial level as a proxy for a better decision.¹⁶ Hence, in order to

¹³ See Ross & Staw, *supra* note 8; Arkes & Blumer, *supra* note 9, at 134-135; Keiko Aoki et al., *Effects of Prior Investment and Personal Responsibility in a Simple Network Game*, 13 CURRENT RES. SOC. PSYCHOL. 10, 18-19 (2007).

¹⁴ Joel Brockner, *The Escalation of Commitment to a Failing Course of Action: Toward Theoretical Progress*, 17 ACAD. MANAGE. REV. 39, 55 (1992).

¹⁵ Ross & Staw, *supra* note 8, at 726; Arkes & Blumer, *supra* note 9, at 134-135. But *cf.* Bornstein & Chapman, *supra* note 9, at 264, who show that in some situations bifurcated decision-making is more prone to the sunk-cost effect.

¹⁶ Note, though, that this logic implies that trial judges might over-invest judicial resources in order to signal a more accurate decision and lower the odds of reversal.

separate the influence of a possible sunk-cost effect, an empirical research should focus on reversal rates that are independent of the merits.

In order to overcome this pitfall as much as possible, I suggest focusing on questions of subject-matter jurisdiction. Subject-matter jurisdiction “[delineates] the classes of cases ... falling within a court’s adjudicatory authority.”¹⁷ Typically, questions of jurisdiction are purely legal ones, and do not require factual inquiry. These issues should be decided at the outset, before any evidence is proffered.¹⁸ Thus, the trial court does not have any comparative advantage over the appellate instance in determining jurisdiction. In addition, lack of jurisdiction is conventionally too crucial an issue, and appellate courts cannot rely upon questionable jurisdictional determinations of the trial court.¹⁹ “Without jurisdiction the court cannot proceed at all in any cause. Jurisdiction is power to declare the law, and when it ceases to exist, the only function remaining to the court is ... dismissing the cause.”²⁰ Theoretically at least, a want of subject-matter jurisdiction is never a harmless error.²¹ Subject matter jurisdiction cannot later be cured if it does not exist when the complaint is filed.²² Considerations of the amount of work invested in the

¹⁷ *Kontrick v. Ryan*, 540 U.S. 443, 455 (2004).

¹⁸ *See, e.g.*, *Steel Company v. Citizens for a Better Environment*, 523 U.S. 83 (1998) (an Article Three standing jurisdictional question). The Court, per Justice Scalia, forcefully condemns the practice of adjudicating the merits before deciding the preliminary jurisdictional dispute (“hypothetical jurisdiction”), without adjudicative case or controversy. *Cf. Mansfield, Coldwater & Lake Michigan Railway Co. v. Swan*, 111 U.S. 379, 382 (1884) (“the first and fundamental question is that of jurisdiction”).

¹⁹ “Subject-matter jurisdiction is so central to the district court’s power to issue any orders whatsoever that it may be inquired into at any time, with or without a motion, by any party or by the court itself.” *Craig v. Ontario Corp.*, 543 F.3d 872, 875 (7th Cir. 2008).

²⁰ *Ex parte McCardle*, 7 Wall. 506, 514 (1868); *see also U.S. v. Tran*, 234 F.3d 798, 807 (2d Cir. 2000): “[w]here the district court acted without subject matter jurisdiction, this Court does not have the discretion not to notice and correct the error; it must notice and correct the error.”

²¹ *See, e.g.*, *Torres v. Oakland Scavenger Co.*, 487 U.S. 312, 317 n.3 (1998).

²² *See Grupo Dataflux v. Atlas Global Group, L.P.*, 541 U.S. 567 (2004).

proceeding or in subsequent litigation should not matter to the appellate instance even when the substantive result is totally correct.²³ An “argument from sunk costs [to the judicial system] does not license courts to retain jurisdiction over cases in which one or both of the parties plainly lack a continuing interest.”²⁴ Similarly, “[i]f the court determines at any time that it lacks subject-matter jurisdiction, the court must dismiss the action.”²⁵ Hence, a litigant “may raise a court’s lack of subject-matter jurisdiction at any time in the same civil action, even initially at the highest appellate instance.”²⁶ A litigant is also free to invoke federal jurisdiction, and, upon losing, raise a jurisdictional defect.²⁷ More generally, the court cannot deny a jurisdictional challenge because a litigant intentionally and strategically chooses to raise it at a later point.²⁸ Being such a

²³ The *Grupo* case, *id.*, is illustrative. A partnership sued a Mexican corporation in federal district court under diversity jurisdiction. At the very moment in which the complaint was filed, the parties were not diverse, but soon afterwards they were. The defendant did not raise jurisdictional challenges. After three years of pretrial motions and discovery, followed by a six-day trial, the jury returned a verdict in favor of the partnership. Before entry of judgment defendant filed a motion to dismiss for lack of subject-matter jurisdiction. The Supreme Court held, in a 5-4 decision per Justice Scalia, that the court lacked subject-matter jurisdiction, and the case was dismissed. *See also* Gao, *supra* note 11, at 2371: “[r]egardless of the time and resources that the parties and the court have expended, a finding of lack of subject matter jurisdiction . . . requires a dismissal.”

²⁴ *Friends of the Earth v. Laidlaw*, 528 U.S. 167, 192 (2000).

²⁵ Fed. R. Civ. P. 12(h)(3).

²⁶ *Kontrick v. Ryan*, 540 U.S. 443, 455 (2004). *See also* *GMAC Commercial Credit LLC v. Dillard Dept. Stores, Inc.*, 357 F.3d 827, 828 (8th Cir. 2004) (“[a]ny party or the court may, at any time, raise the issue of subject matter jurisdiction”); and *Capron v. Van Noorden*, 2 Cranch 126, 127 (1804). For a criticism of this long-standing rule, as well as a proposal for an alternative rule barring tardy jurisdictional challenges, *see* Gao, *supra* note 11.

²⁷ “There is admittedly something unsettling about a party bringing a case in a federal court, taking the case to final judgment, losing, and then invoking a jurisdictional defect that it created – with the result that it escapes from the judgment and returns, albeit in a different venue, to relitigate the merits. But the federal courts are courts of limited jurisdiction and their institutional interest in policing the margins of that jurisdiction is of greater concern than any perceived inequity that may exist here” (*Am. Fiber & Finishing, Inc. v. Tyco Healthcare Group, LP*, 362 F.3d 136, 143 (1st Cir. 2004)).

²⁸ JACK J. FRIEDENTHAL, ARTHUR R. MILLER, JOHN E. SEXTON & HELEN HERSHKOFF, *CIVIL PROCEDURE – CASES AND MATERIALS* 339 (Revised 9th ed., 2008). *See also* *Wight v. BankAmerica Corp*, 219 F.3d 79, 90 (2d Cir. 2000): “irrespective of how the parties conduct their case, the courts have an independent obligation to ensure that federal jurisdiction is not extended beyond its proper limits”; *United States v.*

fundamental requirement, lack of jurisdiction may even justify, in certain situations, a collateral attack after the original proceedings are over.²⁹ Finally, appellate courts are obliged to raise jurisdictional difficulties *sua sponte*, even absent any contention to the trial court's jurisdiction.³⁰

Policy considerations aside, these strict rules of subject-matter jurisdiction are well entrenched in American legal history and the common-law tradition.³¹ Accordingly, courts sometimes enforce these rigid rules, while simultaneously lamenting the resulting inequitable and inefficient outcomes. In one extreme example, the defendant raised a successful jurisdictional challenge only after a jury verdict in the plaintiff's favor. The court of appeals vacated the judgment in the following terms:

“Despite our holding, we note the [defendant's] failure to raise the motion earlier has resulted in delay, expense to appellees, and waste of judicial resources. Nonetheless, because ‘[s]overeign immunity ... is a jurisdictional prerequisite which may be asserted at any stage of the proceedings, ... [a] Court simply cannot ignore arguments, however belated, that call into doubt the Court's authority to exercise jurisdiction over [a] matter.’”³²

Leon, 203 F.3d 162, 164 n.2 (2d Cir. 2000); Gao, *supra* note 11, at 2390-2392, for a survey of similar cases.

²⁹ United States v. Kerley, 416 F.3d 176, 181 (2d Cir. 2005). Friedenthal, Miller, Sexton & Hershkoff, *supra* note 28, at 341-344.

³⁰ *Kontrick*, 540 U.S. at 455.

³¹ See, e.g., *Steel Company v. Citizens for a Better Environment*, 523 U.S. 83, 94-95 (1998) (emphasizing the long practice of insisting on proper jurisdiction); *Kerley*, 416 F.3d at 181 (discussing the “traditional rule” of jurisdiction).

³² *Hagen v. Sisseton-Wahpeton Community College*, 205 F.3d 1040, 1044 (8th Cir. 2000) (citing *Resolution Trust Corp. v. Miramon*, 935 F.Supp. 838, 841 (E.D.La. 1996)).

In another illustrative decision, *Diaz-Rodriguez v. Pep Boys Corp.*, 410 F.3d 56, 62 n.5 (1st Cir. 2005), the court of appeals had to nullify summary judgment due to a jurisdictional defect, which was not raised by the losing party at the trial:

“[t]here is something faintly inequitable about a party letting a case go to judgment without questioning the court's jurisdiction, losing, and then profiting from a jurisdictional defect noted *sua sponte* by the appellate court. ... [however], federal courts are courts of limited jurisdiction. Consequently, such courts must ‘monitor their jurisdictional boundaries vigilantly’” (citing *Am. Fiber & Finishing, Inc. v. Tyco Healthcare Group, LP*, 362 F.3d 136, 139 (1st Cir. 2004)).

Put differently, “the federal courts’ institutional interest in policing the margins of [subject-matter] jurisdiction is of greater concern than any perceived inequity that may exist.”³³

Unless the aforementioned quotations are empty rhetoric, a correlation between reversal rate of subject-matter jurisdiction questions and the amount of judicial resources that were invested at the trial court can suggest the existence of a judicial sunk-cost effect. This is the underlying hypothesis tested by this research.

C. The Database

Given the underlying hypothesis, this article seeks an empirical correlation between reversal rate of jurisdictional questions (the dependent variable) and judicial input at the trial level (the independent variable).

The study relies on the procedural posture in which the original case was terminated as a proxy of previous judicial input. Specifically, this factor indicates whether the trial

Another example is *Del Vecchio v. Conseco, Inc.*, 230 F.3d 974, 980 (7th Cir. 2000): the court of appeals had to null and void a summary judgment entered by the trial court. Doing so, the court admitted that:

“[w]hile we are not unsympathetic to the waste of effort represented by a case that has been fully litigated in the wrong court, both the Supreme Court and we ourselves have noted time and again that subject matter jurisdiction is a fundamental limitation on the power of a federal court to act. ... Once it appears, as it has here, that subject matter jurisdiction is lacking, only one path lies open to us. We hereby VACATE the [trial court’s summary judgment].”

Similarly, in *Shaffer v. GTE North, Inc.*, 284 F.3d 500, 505 (3d Cir. 2002), the court of appeals wishes it would be able to avoid these situations:

“[i]t can only be hoped that this reconfirmation of basic jurisdictional principles that have been firmly established for almost a decade will avoid any further repetition in other cases of the painful lesson taught here.”

See also supra note 27.

³³ *Am. Fiber & Finishing, Inc. v. Tyco Healthcare Group, LP*, 362 F.3d 136, 143 (1st Cir. 2004).

court ends a case after conducting a bench or jury trial – or before – through motion to dismiss, summary judgment, etc.

The procedural posture plausibly signifies judicial input.³⁴ The later the procedural stage, the more judicial resources are likely to be spent. In particular, jury and bench trials ordinarily implicate larger judicial resources than do summary judgments or motions to dismiss. Moreover, a more advanced procedural posture should not imply that the jurisdictional issue was rightly resolved. Jurisdictional questions are typically resolved at the outset, and are not affected by subsequent determination of the merits. The fact that the case proceeded to a bench/jury trial should not, by itself, render the preliminary jurisdictional decision correct when it is later reviewed by the appellate court.

This research focuses on cases in which the trial court had made a jurisdictional determination, proceeded to render a decision on the merits, and its decision was later reviewed by the appellate court. Thus, the database consists of appellate decisions in which there is a genuine challenge to the trial court's subject-matter jurisdiction. The

³⁴ In early versions of this research I experimented with two other variables for judicial input and tested the results on a small subsample. The first variable was the length (pages) of the decision/s rendered at the district court; the second was the period (months) in which the case was pending at the trial court. The length of the trial court opinion had virtually no effect on reversal rates of jurisdictional questions. This might happen due to measurement distortions, as the trial court often issues several decisions, and not all of them are reported. The period in which the case was pending at the trial court was found to have a mixed effect: cases that ended within one year did have the highest reversal rate, as expected; but cases that ended in the second year had lower reversal rates than cases that ended after more than three years. This effect, though far from being statistically significant, may indicate that the time the case is pending is an unreliable measure for judicial input, as some cases are latently pending for a long time.

The use of the length (pages) or time (months) entails conceptual difficulties, as one cannot know whether the additional investment of judicial resources is independent of the decision on jurisdiction. In contrast, investment on trial on the merits is by definition irrelevant to the jurisdictional question. For this reason I focused on the procedural posture variable.

data were collected through an online legal-research database.³⁵ In order to keep only non-frivolous jurisdictional challenges, the dataset includes courts of appeals cases in which the exact phrase “subject-matter jurisdiction” appears in one of the following: synopsis, digest, topic, notes, or summary.³⁶ Cases were reviewed manually to ensure that the appellate court evaluates the trial court’s jurisdiction. The resulting database consists of all decisions in six different circuit courts,³⁷ of the last decade, in which a genuine challenge to the trial court’s jurisdiction arises – overall, 375 decisions.³⁸

1. Note on Sample Selection

The database consists of appellate court opinions. Litigants have to trigger appeals. Are heavily invested cases more/less likely to be appealed? It seems intuitive that heavily invested cases are the hardest-to-settle ones, which are also more likely to reach appellate review.³⁹

³⁵ Westlaw. Unfortunately, other databases, which enable swift and easy access to many decisions at the same time, do not indicate whether a jurisdictional challenge was unsuccessful and do not distinguish between different types of jurisdiction (one example of such a database is ICPSR4382: Federal Court Cases: Integrated Data Base, 2005, available at <http://www.icpsr.umich.edu/cgi-bin/bob/newark?study=4382>).

³⁶ Technically, the search command was: sy(“subject-matter jurisdiction”) no(“subject-matter jurisdiction”) di(“subject-matter jurisdiction”) to(“subject-matter jurisdiction”) su(“subject-matter jurisdiction”).

³⁷ These six circuits were chosen as they diverge on a number of characteristics such as: number of districts per circuit, average distance between district and the circuit headquarters, geographical location, workload, etc.

³⁸ This is a tiny fraction of the cases decided by these six circuit courts. Between 2000 and 2008, these courts decided on the merits 83,694 cases (Federal Court Management Statistics, <http://www.uscourts.gov/fcmstat/index.html> (last visited Nov. 14, 2009)).

³⁹ *Cf.*, George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984); Joel Waldfoegel, *The Selection Hypothesis and the Relationship Between Trial and Plaintiff Victory*, 103 J. POLIT. ECON. 229 (1995). In addition, litigants might be vulnerable to a sunk-cost effect themselves, thus aggressively appealing heavily invested decisions.

Perhaps, but this does not mean that the underlying jurisdictional resolutions, which are typically decided at the outset, are correlated with the merits. The underlying jurisdictional issues are detached from the merits of the case and assumed to be similar across cases regardless of the dispute on the merits.

In addition, other factors suggest that the underlying jurisdictional issues can be taken as similar across cases regardless of the procedural posture at the trial level. First, the regression controls for several relevant variables such as the type of the case, the appellant's identity, and whether interlocutory review was allowed. Second, the database includes only genuine jurisdictional challenges discussed by the appellate court. That means that even if litigants excessively appeal jurisdictional resolutions, the database contains only non-frivolous jurisdictional disputes. Similarly, the court of appeals is obliged to raise, *sua sponte*, jurisdictional difficulties even if litigants are silent. These features mitigate the distorting effect, if any,⁴⁰ of sample selection.⁴¹

⁴⁰ Even if a sample selection bias exists, its direction is not clear. On the one hand, litigants might be overly eager to appeal jurisdictional determinations in heavily invested decisions, thus reducing reversal rates of jurisdictional questions when they were followed by a full trial. On the other hand, litigants that want to appeal on "easy cases" are almost bound to raise their jurisdictional claim; litigants who have gone through a difficult trial on the merits have plenty of issues to appeal on, and they might raise only serious jurisdictional challenges. Similar phenomenon existed in class actions, where, after a final judgment, defendants/appellants did not usually challenge class certification, but only the merits. See Thomas E. Willging, Laural L. Hooper & Robert J. Niemic, *An Empirical Analysis of Rule 23 to Address the Rulemaking Challenges*, 71 N.Y.U. L. REV. 74, 174 (1996) ("most class action appeals, given that they were nearly always filed after a final judgment, may have excluded certification issues because other issues – such as the merits of the claims – may have superseded the need or feasibility of revisiting the certification issue"). This logic, then, leads to lower reversal rates of jurisdictional questions when the proceedings at the trial court are shorter.

⁴¹ As a practical matter, it is very hard to use sample selection models in this context. The sample includes cases with genuine question of jurisdiction at the appellate court; the population consists of all trial court cases with genuine question of jurisdiction, whether appealed or not. However, not all of the jurisdictional questions are raised at the trial level – some are raised by the litigants only after they lose on the merits; others are raised by the court of appeals *sua sponte*. Therefore, there is no practical way to locate the entire population.

D. Results and Discussion

1. The Variables and Descriptive Statistics⁴²

The dependent variable is JURISDICTION, *i.e.*, whether the circuit court affirmed, reversed, or remanded the jurisdictional question. In the majority of cases (62.9%), the court of appeals affirmed.

What about cases in which the appellate court remanded the jurisdictional question (4.8% of the sample)? According to the sunk-cost logic, which is concerned with rendering prior judicial resources useless, cases of remand are closer to affirmations: the appellate court actually enables the trial court to correct its mistakes and avoid a sunk-cost loss by finding an alternative ground for jurisdiction. Hence, unless otherwise stated,⁴³ remands are counted as affirmations.

Note that this variable solely describes how the appellate court handled the jurisdictional question, as it might affirm jurisdiction and reverse the merits. Usually, however, the resolution of the jurisdictional question comports with the decision on the merits (only in 12.1% of the cases is the final disposition opposite to the jurisdictional resolution).

The independent variable is the PROCEDURAL POSTURE in which the district court disposed of the case and, in particular, whether a complete jury or bench TRIAL was held. The majority of cases (84.6%) were terminated before a full trial (*e.g.*, upon a motion to dismiss). Non-trial cases are expected to have higher reversal rates.

I used several control variables.

⁴² For a more detailed summary statistics *see* Appendices.

⁴³ *See also infra* notes 53-54 and the accompanying discussion.

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INTERLOCUTORY APPEALS are the exception: most of the cases in the sample represent appeals from final orders (88.0%). Interlocutory appeals avoid prolonged litigation; hence more reversals are expected.

Who is the APPELLANT? Usually, it is the defendant (54.7% of the cases). Sometimes, it is the plaintiff (35.7%). Otherwise, it can be both/third parties. Note that the plaintiff might want to challenge the trial court's jurisdiction in order to nullify its decision and re-litigate the case.⁴⁴

In addition, the regression controls for the TYPE of the case. The majority of the cases in the database – 53.6% – are civil litigation. Other categories are public law (administrative and constitutional cases), human and civil rights, criminal and post criminal (*e.g.*, habeas) cases.

For each case, there is information about the CIRCUIT which decides the case and the DISTRICT from which the case originated. The database includes cases from the First, Second, Third, Seventh, Eighth, and the D.C. Circuit Courts of Appeals.

The database contains information about the DISTRICT-CIRCUIT DISTANCE. As mentioned, the sunk-cost effect may be the product of social determinants within the judiciary (*e.g.*, court of appeals judges might be reluctant to reverse their colleagues). In order to grasp – albeit roughly – the proximity between circuit and district judges, I recorded the distance between the circuit and the district headquarters. The farthest district is Puerto Rico, which is part of the First Circuit, and located 1671 miles from Boston.

⁴⁴ Neither of the parties has to raise a jurisdictional challenge. The court of appeals can – and often does – raise a jurisdictional difficulty *sua sponte*.

Around one-fifth of the cases in the database are CONSOLIDATED, having more than one docket number in a single decision. CLASS ACTIONS account for 7.2% of the database. Regarding DISSENT, the vast majority of the cases in the sample are unanimous (91.7%). These three variables are a proxy for a complicated case, which requires more judicial resources at the trial court.

The database includes court of appeals decisions of the last decade. In order to account for doctrinal trends, the regression controls for the YEAR in which the court of appeals rendered the decision.

2. Correlating Judicial Input with Reversal Rates

The following table demonstrates the judicial sunk-cost effect. As we move from the left column to the right, the procedural posture in which a case ends at the district court becomes longer: from motion to dismiss through summary judgment to bench and jury trial. Similarly, as the procedural posture becomes more taxing, the odds of reversing the district court’s jurisdiction are by and large lower. For cases that ended in a motion, for example, there is a 37.1% chance of reversing the jurisdictional issue; for cases that ended in a jury trial, there is a 20.7% chance of reversing the trial court’s jurisdiction:

Table 1: Reversal Rates v. Procedural Posture

	<i>Decisions after Motion/Petition</i>	<i>Decisions after Summary judgment</i>	<i>Decisions after Bench Trial</i>	<i>Decisions after Jury Trial</i>
Jurisdictional issue reversed	37.1%	33%	10.7%	20.7%
Jurisdictional issue affirmed	62.9%	67%	89.3%	79.3%
Total	100%	100%	100%	100%

These differences are telling, and they correspond, by and large, to the judicial sunk-cost logic.⁴⁵ In a logit regression, the effect of bench trials was found to be statistically significant (at the 10% level) and the largest in magnitude, but the other effects are not statistically significant either collectively or individually.

Procedural posture can be presented as whether there was a trial or not. When this table is converged accordingly, the gap is more conspicuous. In cases that ended before a full trial, there is a 35.7% chance of reversing the trial court's jurisdiction; in cases that ended after a jury or bench trial, the corresponding figure is only 15.8%:

Table 2: Reversal Rates v. Trial

	<i>Decisions without Trial</i>	<i>Decisions after Trial</i>
Jurisdictional issue reversed	35.7%	15.8%
Jurisdictional issue affirmed	64.3%	84.2%
Total	100%	100%

A logit regression confirms that the effect of a trial is statistically significant at the 5% level.

Other interesting patterns emerge from the regression:

INTERLOCUTORY APPEALS are correlated with more reversals of the district court's jurisdiction. The effect is statistically significant (at the 10% level) and substantial in magnitude. This fits the sunk-cost logic, as interlocutory appeals involve less investment of judicial resources at the trial court.

CLASS ACTIONS: This variable is correlated with affirming the trial court's jurisdiction (statistically significant at the 10% level). This result fits the sunk-cost logic. Complex

⁴⁵ One might expect jury trials, which are arguably more costly than bench trials, to generate the lowest reversal rate. In other specifications jury trials do have the lowest reversal rate. *See* Appendices.

litigation is more likely to involve heavy investments at the trial court, and thus the court of appeals is more likely to affirm the trial court's jurisdiction.

When the APPELLANT is the plaintiff, the court is more likely to reverse the district court's jurisdiction.⁴⁶ This result is somewhat counter-intuitive, as it seems that the plaintiff – who invoked the trial court's jurisdiction – would have a harder time challenging jurisdiction ex-post. On the other hand, reversing jurisdiction enables the plaintiff to relitigate the claim, as there is no preclusion without jurisdiction. Courts of appeals may find it easier to accept a jurisdictional challenge where the district court had already denied the claim for other reasons.

Variation between TYPES of cases: Jurisdictional questions in criminal cases stand out as the least likely to be reversed (and this result is statistically significant at the 5% level). This might suggest that questions of jurisdiction in criminal cases are less complicated, and trial courts are less likely to err; this strong correlation might also suggest that the observed sunk-cost effect is driven by different motives. Public opinion, it seems, would find a reversal of criminal conviction for mere jurisdictional flaws particularly troublesome.⁴⁷ Therefore, the pattern observed in criminal cases might be motivated by the desire to gain public confidence through a façade of consistency.

DISTRICT-CIRCUIT DISTANCE: As expected, the regression shows a negative correlation: the further away the rendering district court is, the more likely the court of appeals is to reverse. This effect is, however, small in magnitude and far from being

⁴⁶ This effect is not statistically significant, but the joint effect of the appellant's identity is statistically significant at the 10% level.

⁴⁷ Reversals of criminal convictions are particularly bothering from a sunk-cost perspective, as they usually involve an additional, substantial investment of resources by a grand jury.

statistically significant.⁴⁸ In an unreported regression on a subsample of cases with serious questions of jurisdiction, I found a strong and statistically significant correlation between district-circuit distance and reversals of jurisdiction.⁴⁹ This point requires, then, further research.

Similarly, there are some variations between CIRCUITS, DISTRICTS, and across YEARS, but they are far from being statistically significant.⁵⁰

To sum up: the findings reveal a non-trivial and statistically significant correlation between having a trial at the district court and affirming the lower court's jurisdiction. Take the following examples, based on conservative estimates,⁵¹ to demonstrate the magnitude of this phenomenon, with and without a trial at the district court:

⁴⁸ Take the following examples: for a civil case at the Second Circuit, the odds of reversing the jurisdictional question are 79.5% when there was no trial at the district court, for a district located 40 miles from the circuit court (the median distance). Where the distance increases to 600 miles (one standard deviation from the mean), the probability of affirming jurisdiction is slightly lower: 77.8%. Where the distance is greater – 1000 miles (two standard deviations from the mean) – the probability of affirmation is again slightly lower: 77.5%. The further away the district court is, the lower the odds of affirmation; but these differences are small. These examples are based on the basic regression (1) (*see* Appendices).

⁴⁹ Controlling for the district in which the trial court is located. For a more detailed description of this subsample, *see infra* note 60 and the accompanying text.

⁵⁰ There are two unexplained exceptions. The first is affirmations in 2008. There is a strong positive correlation that is statistically significant at the 10% level. The second exception is reversal of cases from the Southern District of Indiana. This correlation is sizeable and statistically significant at the 10% level.

⁵¹ The numbers are based on the basic regression (1); *see* Appendices. This is the most conservative regression. All other regressions show a higher, and sometimes much higher, sunk-cost effect.

Table 3: Sunk-Cost Effect in Numbers:

<i>Case</i>	<i>Affirming Jurisdiction Given No Trial</i>	<i>Affirming Jurisdiction Given Trial</i>
Civil case; 2d Cir.	79.5%	90.3%
Civil case, 7th Cir.	65.8%	82.2%
Criminal case; 8th Cir.	95.8%	98.2%
Public law case; D.C. Cir.	75.6%	88.2%
Human rights case; 1st Cir. ⁵²	68.6%	84.0%

Though they are only conservative estimates, these figures show the non-trivial effect: a trial can make a difference of almost up to 20 percentage points.

E. Robustness Checks

Several robustness checks were conducted to buttress the results.

1. Remands

In addition to affirming and reversing, the appellate court can remand the question of jurisdiction to the district court for reconsideration. Remands allow the court of appeals to potentially save judicial resources from vanishing. Up to this point, remands were treated as affirmations. But what happens when a closer look is taken?

When remands are excluded, the results are similar, though some statistical significance is lost.⁵³

However, when remands are compared to affirmations, an opposite and more interesting picture appears. Other things being equal, courts of appeals are much more

⁵² In all these hypothetical examples, except the D.C. one, the defendant appeals and the distance is the median distance. In the D.C. example, the district and circuit courts are located at the same place.

⁵³ The correlation between having a trial at the district court and affirming jurisdiction becomes significant at the 10% level, rather than the 5% level (p-value=7.8%). See Appendices.

likely to remand a jurisdictional question when there was a bench/jury trial at the district court.⁵⁴ This effect is statistically significant at the 5% level.

The sunk-cost effect, then, has dual influence. Not only do courts of appeals prefer affirmations to reversals when the trial court spent judicial resources; they also tend to use more remands in these circumstances.

2. Federal Question Jurisdiction

Federal courts can obtain jurisdiction when the plaintiff alleges a violation of the Constitution or a federal statute. These are federal question cases. Alternatively, federal courts can acquire jurisdiction because the parties are “diverse” in citizenship, *i.e.*, they are residents of different states or non-U.S. citizens. This is a diversity jurisdiction.

One can argue that this research should focus on federal question cases, and exclude diversity jurisdiction. Determining diversity jurisdiction may require some factual inquiry.⁵⁵ Furthermore, diversity is a fluid feature: it can be “created” and “destroyed,”⁵⁶ sometimes by the litigants themselves.⁵⁷ Thus, it makes sense to re-run the regressions with only federal question cases.

When including only federal question cases, the results are all the more robust. Given no trial at the district court, the odds of reversing the jurisdictional question are 36.1%; with a bench/jury trial, the odds are only 13.3%. The results are even more statistically

⁵⁴ *Cf.* the proposition that courts are guided to sustain jurisdiction when it actually exists but not properly pled (*see* Gao, *supra* note 11, at 2379).

⁵⁵ *See* Friedenthal, Miller, Sexton & Hershkoff, *supra* note 28, at 259-260.

⁵⁶ *Id.*, *id.* *See* Gao, *supra* note 11, at 2382, 2382-2385 for actual examples.

⁵⁷ Friedenthal, Miller, Sexton & Hershkoff, *supra* note 28, at 261-264; *cf.*, *Caterpillar Inc. v. Lewis*, 519 U.S. 61 (1996). What matters doctrinally, though, is the time-of-filing (*see* Gao, *supra* note 11, at 2380).

significant than before;⁵⁸ and they also show that jury trial – rather than bench trial – is the strongest predictor of affirming jurisdiction, other things being equal.⁵⁹

3. Non-Similar Cases: Genuine Jurisdictional Questions, Unpublished Orders, and the Underlying Value

Appealed cases might be different in nature: litigants choose to appeal, and this selection process might bias the results. In particular, litigants may appeal more aggressively from full trials. In order to account for this, several other regressions were conducted.

a. Excluding Frivolous Challenges to Jurisdiction One might argue that the underlying jurisdictional questions are different, as cases that ended in a full trial are more likely to be appealed, and frivolous challenges to jurisdiction are more likely in this group. To some extent the study already accounts for this concern, as the database consists of decisions in which the phrase “subject-matter jurisdiction” appears only in the synopsis, digest, topic, notes, or summary. However, “notes” and “topic” may be very broad. To further mitigate these concerns and exclude frivolous jurisdictional challenges, I ran the regressions on a subsample of cases in which the phrase “subject-matter jurisdiction” appears only in the summary or the synopsis of the decision: 139 cases overall.

The results are telling. While the reversal rate of jurisdictional questions for non-trial decisions is 39.1%, a trial decreases this figure to 7.7%. Not only is this effect large in

⁵⁸ The federal question sample includes 140 cases of the original 375 cases (I included in the new sample only cases in which the phrase “federal question”/“federal subject-matter jurisdiction” appears). Though the sample is much smaller, the correlation between trial and reversal rates has a p-value of 3.3%, compared to 4.8% in the larger sample.

⁵⁹ Similarly, remands in the federal question subsample are more likely where there was a trial at the district court.

magnitude, it is also highly statistically significant (p-value=0.1%). This suggests that, if anything, selection process mitigates the observed sunk-cost effect.⁶⁰ When we focus on serious and genuine questions of jurisdiction, the effect is much stronger.

b. Controlling for Cases without Merit Some cases in the database might lack substantive merits. To account for this problem, two additional regressions were conducted.

First, summary-order cases were excluded. Summary order is a decision without reasoning and precedential value.⁶¹ Summary orders are hence more likely to be a result of unmeritorious appeals. When summary orders are excluded, the results are, again, very similar.⁶²

Second, the monetary value of a case can indicate its importance. Unfortunately, the monetary value is usually not apparent from the appellate court decision. In a small subsample of civil cases, though, the appellate court indicates the lower-court award. Though the sample is too small to generate statistically significant results, the findings are illustrative. The coefficient on trial at the district court remains positive, and becomes even larger in magnitude, while the coefficient on monetary value is virtually zero.⁶³

⁶⁰ Because frivolous, non-trial cases are more likely to raise frivolous challenges to jurisdiction.

⁶¹ See, e.g., Anne Coyle, *Note: A Modest Reform: The New Rule 32.1 Permitting Citation to Unpublished Opinions in the Federal Courts of Appeals*, 72 *FORDHAM L. REV.* 2471, 2491 (2004). These decisions are often given orally, from the bench. *Id.*, *id.*

⁶² Given no trial, there is a 36.8% probability of reversing jurisdiction; with a trial, the odds are much smaller: 15.4%. This effect is statistically significant at the 5% level: p-value=4%. See Appendices.

⁶³ As an unreported regression shows (the subsample includes 36 cases). For the coefficient on trial at the district court, the p-value is 11%.

This suggests that the observed sunk-cost effect is not affected by the importance of the underlying lower-court decision.⁶⁴

To sum up: these robustness checks lend further support to the sunk-cost effect. The observed effect increases the odds of both affirmation and remand; the results are even more robust when a smaller sample of federal question cases is considered; the exclusion of frivolous and non-meritorious jurisdictional challenges and appeals increases the observed sunk-cost effect; and the effect remains the same when controlling for the monetary value of the trial-court decision.⁶⁵

III. LEGAL IMPLICATIONS

Based on the described results, several policy prescriptions can be suggested. The main recommendation is to avoid the sunk-cost phenomenon ex-ante. Other relevant alternatives are countering the sunk-cost effect, and reducing it.

A. Avoiding the Sunk-Cost Effect Ex-Ante: The Final-Judgment Rule

The sunk-cost phenomenon can be avoided ex-ante, before additional investment of judicial resources. This is true regardless of the origin of the sunk-cost effect: even if the sunk-cost effect is a rational response to systematic failures, it might be better to avoid

⁶⁴ If at all, this regression suggests that jurisdictional determinations in more important cases are more likely to be reversed, other things being equal.

⁶⁵ The robustness checks found similar results for the subsamples of federal question cases, serious questions of jurisdiction, and non-summary orders. Likewise, I found similar results when I ran the regressions on the entire sample, controlling for federal question cases, serious questions of jurisdiction and summary orders (p-value=5%).

these failures ex-ante. Practically, sunk-cost situations can be avoided by allowing a broader right to interlocutory appeals.

The federal system, however, is notorious for its strict adherence to the “final-judgment rule”⁶⁶: appeals are allowed only from “final decisions of the district courts of the United States.”⁶⁷

There is a host of standard arguments in favor of and against the final-judgment rule. On the one hand, “[t]he basic rationale of the finality rule is conservation of judicial resources.”⁶⁸ It enables a speedy and smooth trial;⁶⁹ and reduces the number of appeals in each case.⁷⁰ On the other hand, interlocutory appeals can preclude costly and useless proceedings,⁷¹ and take care of situations in which final judgments have no practical importance.⁷²

Every legal system strikes a balance between these competing considerations, and even the apparently strict federal final judgment rule is not intact, as “the courts and

⁶⁶ JACK H. FRIEDENTHAL, MARY KAY KANE & ARTHUR R. MILLER, *CIVIL PROCEDURE* 622 (4th ed. 2005).

⁶⁷ 28 U.S.C. § 1291 (1994).

⁶⁸ *Note, Appealability in the Federal Courts*, 75 HARV. L. REV. 351, 351 (1961); see also Michael E. Solimine & Christine Oliver Hines, *Deciding to Decide: Class Action Certification and Interlocutory Review by the United States Courts of Appeals Under Rule 23(f)*, 41 WM. & MARY L. REV. 1531, 1547-1548 (2000).

⁶⁹ “This insistence on finality and prohibition of piecemeal review discourages undue litigiousness and leaden-footed administration of justice” (*DiBella v. United States*, 369 U.S. 121, 124 (1962)). See also *Note, supra* note 68, at 351.

⁷⁰ This is correct both because interim appeals will eventually be consolidated in a single, final one; and since parties might settle amidst trial, or otherwise forgo their right to appeal. See *Note, supra* note 68, at 352; John C. Nagel, *Note, Replacing the Crazy Quilt of Interlocutory Appeals Jurisprudence with Discretionary Review*, 244 DUKE L. J. 200, 203 (1994). For a broader review of the pro arguments see also *Note, supra* note 68, at 352; Nagel, *id.*, at 203; Edward H. Cooper, *Timing as Jurisdiction: Federal Civil Appeals in Context*, 47 LAW CONTEMP. PROBL. 157, 157 (1984).

⁷¹ *Note, supra* note 68, at 352; Cooper, *supra* note 70, at 158.

⁷² *Note, supra* note 68, at 352; Nagel, *supra* note 70, at 203; Cooper, *supra* note 70, at 157 (including other arguments against the final judgment rule).

Congress have created a patchwork of exceptions to it.”⁷³ Much ink has been spilled in an attempt to decipher or suggest the exact boundaries of the final-judgment rule.⁷⁴

This large body of literature neglects one important issue: how the final-judgment rule affects appellate judges’ decision-making. As this article shows, the final-judgment rule, which accumulates judicial resources at the trial court, is associated with lower reversal rates. Had interlocutory appeals been available, some meritorious appeals, currently unsuccessful, might have been accepted. The sunk-cost phenomenon, then, tilts the balance between the final-judgment rule and interlocutory appeals in the latter direction.

More specifically, the sunk-cost logic stresses the importance of interlocutory appeals from lower-court decisions that, if wrong, would entail a huge waste of judicial resources. An obvious candidate is lower-court decisions to uphold its subject-matter jurisdiction. In addition, there are other relevant examples, such as: affirmative defenses (*e.g.*, statute of limitations), recusal applications, abstentions and other prudential restrictions on jurisdictions (*e.g.*, *forum non conveniens*), grants of new trial, and class certifications.

⁷³ Nagel, *supra* note 70, at 220; *see also* Cooper, *supra* note 70, at 157 (“[t]he final judgment requirement has been supplemented by a list of elaborations, expansions, evasions, and outright exceptions that is dazzling in its complexity”).

⁷⁴ *See, e.g.*, Nagel, *supra* note 70 (suggesting moving toward a discretionary appeal system); Robert J. Martineau, *Defining Finality and Appealability by Court Rule: Right Problem, Wrong Solution*, 54 U. PITT. L. REV. 717 (1993) (same); Leah Epstein, *Comments: A Balanced Approach to Mandamus Review of Attorney Disqualification Orders*, 72 U. CHI. L. REV. 667 (2005) (discussing interlocutory appeals from attorney disqualification decisions); Michael E. Solimine, *Revitalizing Interlocutory Appeals in the Federal Courts*, 58 GEO. WASH. L. REV. 1165, 1168 (1990) (advocating “less judicial hostility toward interlocutory appeals”); Amy Schmidt Jones, *Note: The Use of Mandamus to Vacate Mass Exposure Tort Class Certification Orders*, 72 N.Y.U. L. REV. 232 (1997) (discussing the case for interlocutory appeal for class action certifications); Solimine & Hines, *supra* note 68 (same); Nathan A. Forrester, *Comment: Mandamus as a Remedy for the Denial of Jury Trial*, 58 U. CHI. L. REV. 769 (1991) (discussing interlocutory appeals from decisions to deny a jury trial); Gayle Gershon, *Note: A Return to Practicality: Reforming the Fourth Cox Exception to the Final Judgment Rule Governing Supreme Court Certiorari Review of State Court Judgments*, 73 FORDHAM L. REV. 789 (2004) (discussing interlocutory review by the Supreme Court from constitutional judgments decided in state courts); *Niehaus v. Greyhound Lines, Inc.*, 173 F.3d 1207, 1210-11 (9th Cir. 1999) (expanding interlocutory review of decisions to remand cases to state courts).

As the relevant factor is the amount of judicial resources spent in case the decision is mistaken, rights to interlocutory appeals should sometimes be asymmetric.

1. Interlocutory Review from Class Certification Decisions⁷⁵

Certification decisions are made at the beginning of litigation.⁷⁶ Certification is crucial as the stakes are often too small to justify individual litigation. Adopted in 1998, Rule 23(f) allows interlocutory appeals from certification decisions. It gives “[t]he court of appeals ... unfettered discretion whether to permit the appeal, akin to the discretion exercised by the Supreme Court in acting on a petition for certiorari.”⁷⁷ Providing broad discretion, Rule 23(f) guides courts of appeals to “develop standards for granting review.”⁷⁸ Courts and academics alike have been struggling to develop these standards.⁷⁹

The sunk-cost logic can be helpful to delineate the appropriate standards for granting an interlocutory review from class certification orders. A decision refusing to certify a class is, *de facto*, equal to ending the case, with only little additional investment of judicial resources; however, an order granting class certification is more likely to yield

⁷⁵ Class actions are not automatically recognized. The court has to certify a lawsuit as a class action. Hence, after the complaint is filed, the plaintiff should move to have the class certified.

⁷⁶ “At an early practicable time after a person sues or is sued as a class representative.” Fed. R. Civ. P. 23(c)(1).

⁷⁷ Fed. R. Civ. P. 23(f), advisory committee’s note to 1998 amendment.

⁷⁸ *Id.*

⁷⁹ See, e.g., *Blair v. Equifax Check Services, Inc.* 181 F.3d 832 (7th Cir. 1999) (considering several factors including: whether a denial of certification is likely to end litigation; to what extent the defendant is pressed to settle; the legal importance); Christopher A. Kitchen, *Interlocutory Appeal of Class Action Certification Decisions Under Federal Rule of Civil Procedure 23(f): a Proposal for a New Guideline*, 2004 COLUM. BUS. L. REV. 231 (2004); Solimine & Hines, *supra* note 68, at 1547; Aimee G. Mackay, *Appealability of Class Certification Orders under Federal Rule of Civil Procedure 23(f): Toward a Principled Approach*, 96 NW. U. L. REV. 755 (2002); Carey M. Erhard, *A Discussion of the Interlocutory Review of Class Certification Orders under Federal Rule of Civil Procedure 23(f)*, 51 DRAKE L. REV. 151 (2002).

costly adjudication and hence is a more appropriate case for interlocutory review.⁸⁰ In other words, the court of appeals is more likely to deny meritorious challenges to class certification orders where certification was granted (and then followed by costly proceedings). Thus, the sunk-cost logic advocates an asymmetric right to interlocutory appeals from class certification orders.

2. Asymmetric Interlocutory Appeals: Arbitration Proceeding

While the drafters of Rule 23(f) did not craft an asymmetric right to interlocutory review, asymmetric interlocutory appeals do exist in the Federal Arbitration Act. Section 16(a) provides that an appeal may be taken from an order denying a petition to compel arbitration.⁸¹ However, in the mirror case – an order compelling arbitration – an interlocutory appeal is not available.⁸²

This asymmetric interlocutory appeal fits the sunk-cost logic. Where a trial-court erroneous order is likely to trigger redundant proceedings in federal courts – and hence a greater risk of a biased appellate court decision – interlocutory appeals should be permitted. When the mistaken trial-court order does not entail additional federal proceedings, there is no risk of sunk-cost error, and interlocutory appeals are less important.

⁸⁰ This statement should be qualified to the extent that class certifications always lead to settlements, and third parties often appeal these settlements. In that case, appellate courts only see cases in which there is very little investment of judicial resources after certification orders, whether certification was granted or refused.

⁸¹ 9 U.S.C. § 16(a).

⁸² 9 U.S.C. § 16(b).

To sum up: the judicial sunk-cost effect advocates a broader right to interlocutory review. Rights to interlocutory review should sometimes be asymmetric, as interlocutory decisions often entail different investments of judicial resources, depending on the winning party.

B. Other Legal Implications

1. Standard of Review

The sunk-cost effect can be countered by a more aggressive standard of review of previous decisions, which can compensate for judges' inclination not to deviate from a prior course of action. There are many situations in which a heightened standard of review can be implemented. Appellate courts can be more interventionist toward lower courts; courts can be more demanding in reviewing administrative decisions;⁸³ courts can review arbitration decisions on the merits;⁸⁴ and be more inclined to grant habeas corpus and new trial petitions.

In the context of trial-appellate court, for instance, the sunk-cost logic should bring a more aggressive standard of review. In particular, a more searching standard of review should be applied to final judgments (as opposed to interlocutory appeals); and questions that are decided at the beginning of the litigation and then are followed by heavy

⁸³ Note, though, that the sunk-cost logic may not fully apply here. Administrative bodies are not part of the federal system, administrative judges are not in proximity to federal judges, and the public-confidence argument is similarly weaker.

⁸⁴ The sunk-cost argument cannot fully apply here for the same reasons stated in *supra* note 83.

investment of judicial resources (typically legal questions, as opposed to factual questions).⁸⁵

2. Reducing the Sunk-Cost Effect

Several steps can be taken to reduce the sunk-cost effect. Better awareness is one example.⁸⁶ A more stringent obligation to provide written reasoning, even in summary orders, is another possible measure.⁸⁷

a. Separating Decision Making Bifurcated decision-making is less vulnerable to the sunk-cost effect.⁸⁸ In many areas judicial decision-making is bifurcated, but in others it is not. A prominent example to the contrary is remanding a case to the same trial judge for further proceedings. Absent “unusual circumstances,” courts of appeals tend not to reassign a case to a different judge.⁸⁹ When the sunk-cost phenomenon is considered, appellate judges should be more inclined to reassign upon remand. Reassignment decisions should be based on the amount of judicial resources already spent by the original trial judge.

⁸⁵ *Cf.*, the current standard of review: questions of law are reviewed under a broad *de novo* review (see, e.g., FEDERAL PRACTICE & PROCEDURE, § 2588, available at 2009 Westlaw); questions of fact are reviewed under a narrow “clearly erroneous” standard (see Fed. R. Civ. P. 52(a)).

⁸⁶ *Cf.*, Itamar Simonson & Barry M. Staw, *Deescalation Strategies: A Comparison of Techniques for Reducing Commitment to Losing Courses of Action*, 77 J. APPLIED PSYCHOL. 419, 425 (1992).

⁸⁷ *Cf.*, Simonson & Staw, *id.*, at 420.

⁸⁸ See *supra* note 15.

⁸⁹ See, e.g., U.S. v. Sears, Roebuck & Co., Inc., 785 F.2d 777, 780 (9th Cir. 1986); RICHARD E. FLAMM, JUDICIAL DISQUALIFICATION 1002 (2d ed. 2007).

IV. ALTERNATIVE EXPLANATIONS

The observed sunk-cost effect can be attributed to other explanations:

A. Sunk Costs, Alternative Forum, and Jurisdiction's Lie

In certain situations, appellate-court decisions that find lack of jurisdiction can trigger proceedings in another forum that does have jurisdiction (*e.g.*, state courts). This consideration might justify upholding jurisdiction where it does not exist, in order to save prospective judicial resources.⁹⁰

Do courts of appeals consider prospective judicial resources? According to judicial rhetoric, the answer is clearly negative. Moreover, the desire to save future judicial costs by affirming dubious jurisdiction cannot apply straightforwardly across cases. There are several distinct, hypothetical scenarios when jurisdiction is found lacking at the appellate court.⁹¹ The alternative forum can be, for instance, state court or foreign system; and it may seem more acceptable to burden a foreign legal system with future litigation.⁹² Furthermore, the alternative forum might not be available for litigation: a statute of limitations often precludes litigation in the alternative forum regardless of its jurisdiction.⁹³

⁹⁰ *Cf.*, Justice Ginsburg's dissenting opinion in *Grupo Dataflux v. Atlas Global Group, L.P.*, 541 U.S. 567 (2004).

⁹¹ *See* Gao, *supra* note 11, at 2388-2390, for a summary of the possible alternative scenarios upon dismissal for lack of jurisdiction.

⁹² Similarly, it seems more acceptable to encumber state courts, as opposed to federal courts, with the burden of re-litigation (*Cf.*, Gao, *supra* note 11, at 2389, referring to *Grupo*, 541 U.S. at 583 (Ginsburg J., dissenting)).

⁹³ Practically, this is a very real concern: "in many situations, especially where the litigation has gone on for years, [the assumption that the statute of limitations on the plaintiff's case has not run] is likely a faulty one" (Gao, *supra* note 11, at 2388, 2388(119)).

If federal judges are interested in saving prospective judicial resources, these considerations should be taken into account. However, courts do not seem to undertake this approach; typically, they do not even have complete information with regard to the alternative forum and its availability. In case such rational considerations guide appellate judges, litigants should have the opportunity to raise relevant arguments, and these considerations should be transparently discussed.

1. Note on Possible Jurisdiction's Lie

What if the concept of jurisdiction is misleading, and judges do save prospective judicial costs by affirming dubious jurisdiction when they sense that the decision on the merits, which was preceded by a full trial, is reasonably correct? This is the "jurisdiction's lie": judges say jurisdiction, but consider something else.

This jurisdiction's lie can save judicial resources in specific cases, but it entails obvious costs. It is an erratic application of jurisdictional doctrines, subject to the idiosyncrasies of each case. It tends to expand jurisdiction, in order to save resources that were mistakenly invested. It spawns uncertainty in the law of procedure, an area of law that loathes it.⁹⁴ As evidenced by the lower reversal rates, it seems to confuse litigants. In short, this pattern of behavior may achieve fair results in specific cases, but it has long-term costs of uncertain doctrine. As the Supreme Court cautions, "incremental benefit is

⁹⁴ "An important feature of laws regarding form is that they be cheaply accessible and precisely predictable" (Louis Kaplow, *Rules versus Standards: An Economic Approach*, 42 DUKE L. J. 557. 618 (1992)).

outweighed by the impact of ... an individualized jurisdictional inquiry on the judicial system's overall capacity to administer justice."⁹⁵

Interlocutory appeals can cure these pitfalls. Interim review avoids the need to lie and bend doctrine where the results on the merits seem reasonable; it also avoids haphazard expansion of jurisdiction, and brings a greater doctrinal clarity and certainty.

B. Trial Judges' Behavior

When anticipating a long trial following a jurisdictional determination, trial judges can respond differently, and this reaction can be responsible for the observed results.

Trial judges might invest more efforts in resolving jurisdictional questions when they expect a long trial. Trial judges, who tend to suffer from heavy dockets, would be particularly careful not to uphold (mistakenly) jurisdiction.⁹⁶ According to this logic, an observed correlation between reversal rates of jurisdictional questions and judicial input represents trial judges' ability to yield better jurisdictional determinations when complicated trials on the merits are expected.

An opposite story can be told if trial judges predict a sunk-cost effect. In order to maximize their leisure and reduce odds of reversal, and anticipating appellate courts'

⁹⁵ *Coopers & Lybrand v. Livesay*, 437 U.S. 463, 473 (1978). Contrast this with the argument that the concept of jurisdiction is indeed a lie, but a "noble" one (Frederic M. Bloom, *Jurisdiction's Noble Lie*, 61 STAN. L. REV. 971 (2009)). The jurisdiction's lie, the argument goes, is noble, as it enables the Court to "adapt wisely over time," and maintain judicial pragmatism, on the one hand, and guide lower courts on the other hand (*id.*, at 1025). The lie that is perhaps revealed from the findings is an ex-post lie, stemming from the desire to accommodate salient, aberrant features of specific cases. It yields erratic application of jurisdictional doctrines, subject to the irreparable waste of judicial resources and the need to re-litigate the case. It has nothing to do with a better design of jurisdictional rules, allegedly sensitive to the exigencies of the time.

⁹⁶ The flip side is that trial judges would be less careful when deciding to deny (mistakenly) jurisdiction. Put differently, for trial judges, the costs of a false positive error (affirming jurisdiction) are higher than a false negative error (denying jurisdiction).

tendency to affirm heavily invested decisions, trial judges might, consciously or not, change their behavior in response. This may lower the quality of their jurisdictional determinations if extensive litigation is likely to follow. Indeed, it was observed that a “realistic possibility of [interlocutory] review ... may spur district courts to take [interlocutory] decisions more seriously.”⁹⁷ If this effect exists, it is likely to mitigate the observed sunk-cost effect.

It is hard to predict which of the two behaviors, if either, is more likely.⁹⁸ In both scenarios, however, interlocutory review reduces trial judges’ incentives to change their behavior in the face of costly adjudication.

C. Litigants’ Behavior

In a similar vein, litigants may adapt by not appealing jurisdictional questions when those were followed by a considerable judicial input, as they intuit that the appellate court tends to affirm. If this is true, we will observe a reduced sunk-cost effect.

In addition, litigants whose jurisdictional challenge was denied might, to some extent, control subsequent investment of judicial resources. Litigants, for instance, can push for interlocutory appeals; when these efforts are unsuccessful, they may find creative ways to avoid a protracted – and presumably jurisdiction-lacking – trial. Indeed, the database includes observations in which one party defaulted after losing on jurisdiction in order to

⁹⁷ In the context of class certification, where there used to be no interlocutory review (1 WORKING PAPERS OF THE ADVISORY COMMITTEE ON CIVIL RULES ON PROPOSED AMENDMENTS TO CIVIL RULE 23, 411 (1997) (summary of comments by John L. McGoldrick (Bristol-Meyers Squibb))).

⁹⁸ One can further argue that appellate judges can react to trial judges’ strategic behavior. When trial judges uphold jurisdiction in expectation of long trials, they might signal that they got a right decision as they are willing to move on and expend large resources on the merits. Appellate judges can respond with a lower reversal rate. Similarly, if appellate judges believe that trial judges tend to shirk, appellate judges may discourage laziness by a lower reversal rate where the trial court invested large resources.

obtain an immediate appeal.⁹⁹ Similarly, litigants can agree, ex-ante, to a partial settlement, gaining immediate review of the most disputed issue.¹⁰⁰ On the other hand, cases in which litigants defaulted to obtain a prompt review are scarce; and the regression controls for interlocutory appeals. Hence, litigants' influence on investment of judicial resources on the merits does not seem to distort the results.

Finally, litigants can influence, to some extent, the quality of the jurisdictional determination. Litigants may invest more in resolving jurisdictional determinations where they expect lengthy litigation on the merits, in order to avoid paying potentially redundant legal expenses.¹⁰¹ In a similar vein, jurisdictional arguments can be raised over and over throughout the trial – and litigants who lose on jurisdiction once can raise an improved jurisdictional challenge when they understand how costly the trial is. On the other hand, these arguments imply that litigants with larger stakes produce better jurisdictional resolutions at the trial court; however, I found that the sunk-cost

⁹⁹ A good example is *Wilkinson v. Shackelford*, 478 F.3d 957 (8th Cir. 2007). The plaintiff, whose motion to remand the case to state court was denied, voluntarily dismissed remaining claims and then appealed. The appellate court indeed held that jurisdiction was lacking.

¹⁰⁰ The practice of partial settlements – in which parties can agree to let the court decide liability but limit the judgment amount – is a relatively recent phenomenon, which can be explained by the desire to reduce risky and costly trials. See J.J. Prescott, Kathryn Spier, Albert Yoon, *Trial and Settlement: A Study of High-Low Agreements* (unpublished paper, on file with author). In practice, partial settlements may also be motivated by parties' desire to obtain immediate interim review, rigid rules of federal procedure notwithstanding. Cf., the practical advice to a partial settlement in the context of patent claims, Geoffrey Gavin & Matthew Warezak, *Disputed Claim Constructions*, 210 PAT. WORLD 30 (2009).

¹⁰¹ To the extent that this is true, interlocutory review might reduce litigants' incentives to invest more in resolving jurisdiction when a costly trial is expected.

phenomenon persists when one controls for the value of the case.¹⁰² This point should be clarified by future research.¹⁰³

V. CONCLUSION

This study reveals a surprising and interesting phenomenon: there is a negative correlation between reversal rates and irrelevant investment of judicial resources at the trial level. This effect is non-trivial in size and robust under various specifications.

The straightforward explanation of this phenomenon is the judicial sunk-cost effect: appellate judges are overly tied to the past due to a cognitive bias, a rational response to systematic failures, or a desire to preserve public legitimacy. The suggested remedy for this phenomenon is a broader right to interlocutory appeals, which would prevent accumulation of unreviewed judicial resources at the trial level.

However, other stories can explain the observed phenomenon as well. It might be driven by the misleading use of “jurisdiction,” or, by trial judges’ and/or litigants’ behavior in the face of costly adjudication. Definite conclusions regarding the scope and sources of this phenomenon should wait for further research. The results indicate a previously undiscussed link between investment of judicial resources at the trial level and accurate appellate decision-making. However, this is just a first step in an unexplored direction.

¹⁰² See *supra* notes 63-64 and the accompanying text.

¹⁰³ One can further argue that appellate judges can respond to anticipated litigants’ behavior. Hence, appellate judges might be inclined to affirm the trial court’s ruling on jurisdiction, where it was followed by a lengthy trial, in order to induce litigants, ex-ante, to invest more in resolving jurisdiction.

VI. APPENDICES

A. Summary Statistics

Table A.1: Jurisdiction

<i>Jurisdictional Question</i>	<i>Number of Cases (%)</i>
Reversed	120 (32.3%)
Affirmed	234 (62.9%)
Remanded	18 (4.8%)
Total	372 (100%) ¹⁰⁴

The database contains appellate cases in which the court of appeals reviews the district court (explicit or implicit) assumption of jurisdiction.

Table A.2: Procedural Posture

<i>Procedural Posture</i>	<i>Number of Cases (%)</i>
Petition	28 (7.6%)
Motion	174 (46.9%)
Summary judgment	112 (30.2%)
Bench trial	28 (7.6%)
Jury trial	29 (7.8%)
Total	371 (100%)

This information was usually extracted from the appellate-court decision, and it relies on the court's own definitions.

In many cases, the procedural stage in which the district court disposed of the case is not apparent from the appellate-court opinion. Where it was possible, I collected this information from the district-court decision or the parties' appellate briefs. The final dataset includes 371 cases where this information exists; in four cases, the procedural posture is unknown.

Default judgments were coded as motion-to-dismiss cases, as a negligible judicial input was invested.

No special procedure was taken with regard to cases that have already been remanded in the past (*i.e.*, that appear at the circuit court in the second time). The appellate judge cannot be deemed to "save," by avoiding reversal, the judicial resources that were incurred at the "first round" and thus only the current procedural stage is relevant.

The database includes several bankruptcy-court decisions, which were reviewed by the district court before being reviewed by the court of appeals. The procedural posture at the trial court – *i.e.*, the bankruptcy court – is the relevant one.

Table A.3: Type of Case

<i>Type of Case</i>	<i>Number of Cases (%)</i>
Post-criminal	19 (5.1%)
Criminal	23 (6.1%)
Human and civil rights	59 (15.7%)
Public law	73 (19.5%)
Civil	201 (53.6%)
Total	375 (100%)

¹⁰⁴ In two cases the court discussed the jurisdictional challenge but did not resolve it. In another case, two jurisdictional challenges were raised and resolved in opposite directions. Hence, there are only 372 cases for this variable.

Table A.4: Interlocutory Appeals

<i>Type of Appeal</i>	<i>Number of Cases (%)</i>
Interlocutory appeal	45 (12%)
Final-decision appeal	330 (88%)
Total	375 (100%)

Table A.5: Final Disposition

<i>Final Disposition of the Case at the Circuit Court</i>	<i>Number of Cases (%)</i>
Reversed	127 (33.9%)
Affirmed	195 (52.0%)
Remanded	53 (14.1%)
Total	375 (100%)

Table A.6: Final Disposition v. Decision on Jurisdiction

	<i>Jurisdictional Question Reversed</i>	<i>Jurisdictional Question Affirmed</i>	<i>Jurisdictional Question Remanded</i>	<i>Total</i>
Final disposition:				
Reversed	100	24	1	125
Affirmed	20	174	0	194
Remanded	0	36	17	53
Total	120	234	18	372

Cases in which the appellate court reversed jurisdiction but affirmed the final disposition represent situations in which the trial court dismissed on other preliminary grounds (rather than jurisdiction). As can be seen from the table, in one exceptional case the court of appeals held that it would normally remand the jurisdictional question, but then proceeded to the merits and reversed the case (In re Combustion Engineering, Inc., 391 F.3d 190 (3d Cir. 2004)).

Table A.7: Dissent

<i>Type of Decision</i>	<i>Number of Cases (%)</i>
Non-unanimous decision	31 (8.3%)
Unanimous decision	344 (91.7%)
Total	375 (100%)

Concurring opinions were coded as non-unanimous decisions.

Table A.8: Class Actions

<i>Type of Action</i>	<i>Number of Cases (%)</i>
Class Actions	27 (7.2%)
Non-class Actions	348 (92.8%)
Total	375 (100%)

Table A.9: Consolidated Cases

<i>Docket Number</i>	<i>Number of Cases (%)</i>
Consolidated	86 (22.9%)
Individual	289 (77.1%)
Total	375 (100%)

Table A.10: Appellant

<i>Appellant</i>	<i>Number of Cases (%)</i>
Plaintiff	134 (35.7%)
Defendant	205 (54.7%)
Both/third party	36 (9.6%)
Total	375 (100%)

Plaintiff/defendant definitions refer to the party who initiated federal proceedings. Accordingly, where a plaintiff brings a lawsuit in state court and the defendant removes to a federal court, the actual defendant is coded as “plaintiff.”

Table A.11: Year

<i>Year</i>	<i>Number of Cases (%)</i>
2000	38 (10.1%)
2001	28 (7.5%)
2002	33 (8.8%)
2003	44 (11.7%)
2004	40 (10.7%)
2005	57 (15.2%)
2006	40 (10.7%)
2007	33 (8.8%)
2008	35 (9.3%)
2009	27 (7.2%)
Total	375 (100%)

Decisions in 2009 were collected from January through October.

Judgment: I recorded the amount of the district-court judgment in civil cases where it was indicated by the court of appeals. Using this method, 53 civil cases in the sample include data on the amount of judgment. The mean is \$47,833,620 and the median is \$500,000.

Distance refers to the distance, in kilometers, from the district to the circuit headquarters. When these headquarters are located at the same place, the distance is coded as 1. In case the district has several courthouses, the average distance of all courthouses from the circuit court headquarters is recorded.

Among 374 observations in the sample, the average distance is 322.8km; the median is 64km; the standard deviation is 644km:

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Table A.12: District, Circuit and District-Circuit Distance

<i>District</i>	<i>Distance to Circuit (km)</i>	<i>No. of Cases (%)</i>	<i>No. of Cases in Circuit (%)</i>
Cir. 1:			
D.Mass.	1	18 (4.8%)	
D.R.I.	66.2	4 (1.1%)	
D.N.H.	102.2	1 (0.3%)	
D.Me	158.9	2 (0.5%)	
D.P.R.	2689.8	18 (4.8%)	
Total Cir 1.			43 (11.5%)
Cir. 2:			
S.D.N.Y.	1	50 (13.4%)	
E.D.N.Y.	34.6	16 (4.3%)	
D.Conn.	119.0	12 (3.2%)	
N.D.N.Y.	296.3	6 (1.6%)	
D.Vt.	340.6	3 (0.8%)	
W.D.N.Y.	437.5	5 (1.3%)	
Total Cir. 2:			93 (24.8%)
Cir. 3:			
E.D.Pa.	1	24 (6.4%)	
D.Del.	40.0	3 (0.8%)	
D.N.J.	56.8	16 (4.3%)	
M.D.Pa.	171.4	8 (2.1%)	
W.D.Pa.	405.6	10 (2.7%)	
D.V.I.	2617.5	5 (1.3%)	
Total Cir. 3:			66 (17.6%)
Cir. 7:			
N.D.Ill.	64.2	44 (11.8%)	
N.D.Ind.	125.1	6 (1.6%)	
E.D.Wis.	133.7	6 (1.6%)	
W.D.Wis.	198.0	5 (1.3%)	
C.D.Ill.	234.0	2 (0.5%)	
S.D.Ind.	263.2	6 (1.6%)	
S.D.Ill.	429.0	6 (1.6%)	
Total Cir. 7:			75 (20%)
Cir. 8:			
E.D.Mo.	1	5 (1.3%)	
W.D.Mo.	383.8	16 (4.3%)	
N.D.Iowa	395.0	5 (1.3%)	
S.D.Iowa	439.9	1 (0.3%)	
E.D.Ark.	469.4	7 (1.9%)	
W.D.Ark.	518.7	4 (1.1%)	
D.Neb.	570.8	3 (0.8%)	
D.Minn.	750.0	14 (3.7%)	
D.S.D.	772.4	6 (1.6%)	
D.N.D.	1062.6	4 (1.1%)	
Total Cir. 8			65 (17.3%)
D.D.C.	1	33 (8.8%)	33 (8.8%)
Total		374 (100%) ¹⁰⁵	375 (100%)

¹⁰⁵ One appeal is a consolidation of several cases from different circuits; hence there are only 374 cases in this column.

B. *Logit Regressions: The Effect of a Trial at the Lower Court*

The following are the results of seven logit regressions, in which “jurisdiction” is the dependent variable; it equals 1 when the court of appeals affirms the district court’s jurisdiction, and 0 when jurisdiction is reversed. The independent variable is the procedural posture.

Regression (1) – this is the basic regression. It includes all cases in the database; the independent variable, trial, indicates whether there was a bench/jury trial at the district court or not (1 and 0, respectively). This regression also includes circuit-court fixed effects.

Regression (2) – includes all cases in the database; the independent variables are the procedural posture in which the cases ended (motion/summary judgment/bench trial/jury trial).

Regression (3) – same as (1), but includes district-court fixed effects instead of circuit-court fixed effects.

Regression (4) – same as (1), but the database includes only federal question cases.

Regression (5) – same as (2), but the database includes only federal question cases.

Regression (6) – same as (1), but summary orders are excluded from the database.

Regression (7) – same as (1), but the database includes only decisions in which the phrase “subject-matter jurisdiction” appears in the summary/synopsis.

Table B.1: The Effect of a Procedural Posture on Reversal Rates of Jurisdictional Questions: All Observations (Regressions (1)-(3))

<i>Explanatory Variables</i>	(1) <i>Coefficient</i> <i>(Standard Error)</i>	(2) <i>Coefficient</i> <i>(Standard Error)</i>	(3) <i>Coefficient</i> <i>(Standard Error)</i>
Trial (bench/jury)	0.88 (0.44)**	-	1.03 (0.50)**
Procedural posture:			
Summary judgment	-	0.15 (0.28)	-
Bench trial	-	1.39 (0.74)*	-
Jury trial	-	0.59 (0.54)	-
Interlocutory appeal	-0.72 (0.38)*	-0.65 (0.40)*	-0.72 (0.43)*
Type of case:			
Civil/human rights	0.14 (0.63)	0.54 (0.60)	0.44 (0.69)
Criminal	2.75 (1.22)**	2.79 (1.23)**	3.73 (1.14)***
Civil	0.62 (0.59)	0.54 (0.61)	0.91 (0.68)
Public law	0.58 (0.63)	0.51 (0.65)	0.81 (0.70)
Unanimous opinion	0.10 (0.44)	0.12 (0.43)	0.23 (0.52)
Nonconsolidated	-0.18 (0.31)	-0.17 (0.32)	-0.19 (0.34)
Non-class action	-0.85 (0.48)*	-0.88 (0.48)*	-0.77 (0.50)
Appellant:			
Plaintiff	-0.70 (0.50)	-0.68 (0.50)	-0.65 (0.53)
Defendant	-0.16 (0.48) ^(a)	-0.16 (0.49)	-0.26 (0.54)
Ln(distance)	-0.04 (0.06)	-0.04 (0.06)	0.05 (0.25)
Circuit fixed effects	Yes	Yes	No
District fixed effects	No	No	Yes
Year fixed effects	Yes	Yes	Yes
Constant	1.11 (1.05)	1.11 (1.05)	1.26 (1.19)
Observations	367	367	352
Pseudo R squared	10.83%	11.11%	16.15%

*– indicates statistical significance at the 10% level; ** – indicates statistical significance at the 5% level; *** – indicates statistical significance at the 1% level.

(a) – the joint effect of “appellant is plaintiff” and “appellant is defendant” has a p-value of 10% in regression (1);

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Table B.2: The Effect of a Procedural Posture on Reversal Rates of Jurisdictional Questions: Subsamples (Regressions (4)-(7))

<i>Explanatory Variables</i>	<i>(4)</i> <i>Coefficient</i> <i>(Standard Error)</i>	<i>(5)</i> <i>Coefficient</i> <i>(Standard Error)</i>	<i>(6)</i> <i>Coefficient</i> <i>(Standard Error)</i>	<i>(7)</i> <i>Coefficient</i> <i>(Standard Error)</i>
Trial (bench/jury)	1.96 (0.92)**	-	0.95 (0.46)**	2.85 (0.85)***
Procedural posture:				
Summary judgment	-	-0.19 (0.48)	-	-
Bench trial	-	1.59 (1.29)	-	-
Jury trial	-	2.18 (1.18)*	-	-
Interlocutory appeal	-0.85 (0.73)	-0.88 (0.75)	-0.74 (0.39)*	0.15 (0.85)
Type of case:				
Civil/human rights	-0.30 (1.98)	-0.17 (2.06)	0.11 (0.64)	-1.83 (1.00)*
Criminal	_(a)	_(a)	2.71 (1.22)**	_(a)
Civil	-1.71 (1.76)	-1.59 (1.81)	0.58 (0.60)	-0.20 (0.83)
Public law	-1.36 (1.81)	-1.25 (1.86)	0.68 (0.64)	-0.56 (1.01)
Unanimous opinion	0.92 (0.74)	0.96 (0.74)	0.08 (0.43)	0.24 (0.99)
Nonconsolidated	-0.57 (0.54)	-0.60 (0.54)	-0.13 (0.33)	-1.97 (0.68)**
Non-class action	-1.15 (0.60)^(b)	-1.09 (0.61)^(b)	-0.77 (0.50)	-0.27 (0.70)
Appellant:				
Plaintiff	0.48 (0.85)	0.55 (0.86)	-0.85 (0.52)*	0.09 (1.11)
Defendant	1.16 (0.85)	1.21 (0.88)	-0.30 (0.51) ^(c)	0.82 (1.15)
Ln(distance)	-0.06 (0.12)	-0.06 (0.12)	-0.04 (0.06)	-0.04 (0.13)
Circuit fixed effects	Yes	Yes	Yes	Yes
District fixed effects	No	No	No	No
Year fixed effects	Yes	Yes	Yes	Yes
Constant	1.02 (2.34)	0.85 (2.45)	1.21 (1.08)	1.82 (1.67)
Observations	135	135	341	128
Pseudo R Squared	17.63%	17.78%	10.85%	26.22%

*– indicates statistical significance at the 10% level; ** – indicates statistical significance at the 5% level; *** – indicates statistical significance at the 1% level.

(a) – the sample for regressions (4), (5), and (7) does not include criminal cases.

(b) – the joint effect of consolidated cases and class actions has a p-value of 5% in regressions (4) and (5).

(c) – the joint effect of “appellant is plaintiff” and “appellant is defendant” has a p-value of 10% in regression (6).

C. Multinomial Regression: Remands

The following are the results of two multinomial regressions. “Jurisdiction” is the dependent variable; it equals 1 when the court of appeals affirms the district court’s jurisdiction, 0 when it reverses, and 2 when the jurisdictional question is remanded to the trial court.

The regression includes all the cases in the database; column (1) is the effect on reversing jurisdiction; column (2) is the effect on remanding; base outcome is affirming.

Table C.1: The Effect of a Procedural Posture on Reversal Rates of Jurisdictional Questions: Multinomial Regression

<i>Explanatory Variables</i>	<i>(1)</i> <i>Coefficient</i> <i>(Standard Error)</i>	<i>(2)</i> <i>Coefficient</i> <i>(Standard Error)</i>
Trial (bench/jury)	-0.79 (0.45)*	2.15 (0.88)**
Interlocutory Appeal	0.91 (0.39)**	2.43 (1.04)**
Type of case:		
Civil/human rights	-0.19 (0.64)	-17.12 (-)
Criminal	-2.71 (1.22)**	-17.13 (-)
Civil	-0.57 (0.60)	18.67 (-)
Public law	-0.53 (0.64)	18.51 (-)
Unanimous Opinion	0.03 (0.44)	20.84 (-)
Nonconsolidated	0.23 (0.32)	1.08 (0.73)
Non-class action	0.62 (0.50)	-2.11 (0.84)***
Appellant:		
Plaintiff	0.57 (0.52)	-1.85 (0.87)**
Defendant	-0.06 (0.51)	-3.87 (1.09)***
Ln(distance)	0.04 (0.06)	0.01 (0.15)
Year fixed effects	Yes	Yes
Circuit fixed effects	Yes	Yes
Constant	-0.87 (1.06)	-38.95 (-)
Observations		367
Pseudo R Squared		18.58%

*– indicates statistical significance at the 10% level; ** – indicates statistical significance at the 5% level; *** – indicates statistical significance at the 1% level.