More Talk Less Conflict:
Evidence from Requiring Informal Discovery Conferences

Eric Helland[*]
Claremont-McKenna College and RAND

Minjae Yun
UCLA Law

October 2022

Abstract

Discovery is the formal process of exchanging information under the supervision of the courts. Since managing discovery is costly, courts have implemented case management techniques to reduce motion practice in discovery. This study examines whether case management techniques can reduce the likelihood of a discovery dispute. We attempt to untangle the impact of specific judges from the use of a particular case management technique. We focus on the use of informal discovery conferences (IDCs) in which parties meet with the judge before filing a motion to compel. The problem with simply testing whether IDCs reduce the number of discovery motions is that the use of an IDC is likely endogenous. Our solution to this endogeneity is to use the random assignment of judges. Since some judges have a higher propensity to use IDCs and some courts have begun requiring them, we have two sources of policy variation. Using this estimation strategy, we find that IDCs reduce the number and presence of discovery motions by 64%.

JEL Classification: K13, K40, K41

1. Introduction

      As the formal process of exchanging information under the supervision of the courts, the discovery process represents one of the most basic elements of litigation. It involves one side revealing the evidence it will present at trial to the opposing side, and it gives each side a chance to prepare counterarguments. The problem is that both sides are incentivized to withhold information when requested if the information is valuable to the opposing side and request information that may be of limited value to the requesting party because the costs of production are largely borne by the other side. For this reason, the right to discovery is limited, and the courts must balance overly expansive discovery requests with the need not to harm information exchange.

      When one side refuses to comply with a discovery request, the other party can file a motion to compel asking the court to force the other party to provide the information. The opposing party can file its own motions providing the judge with reasons that they should not be forced to provide the information. At this point, the judge can compel the transfer or not, potentially setting off another potential round of motions. The concern of the courts is that the very availability of judicial recourse in the form of filing a motion makes it less likely that parties will resolve disputes without resorting to filing a motion. In fact, judges regularly express frustration with parties becoming excessively reliant on motion practice, which in the context of discovery, is the practice of using motions to resolve disputes about the proportionality of discovery requests.[1]

---

[1] In response to concerns about parties resorting to motions without first trying to resolve discovery disputes, a number of courts, including the federal courts, have imposed meet-and-confer requirements. For example, the California Code of Civil Procedure section 2016.040 requires that litigants "meet and confer" in a "reasonable and good faith attempt at an informal resolution of each issue presented by the motion." The general consensus is that

While much attention has been focused on the cost of discovery in terms of complying with information requests in litigation, the adjudication of these disputes, regardless of the outcome, takes lawyer and court time. These court costs, as well as the prospect that avoiding these conflicts might involve the parties voluntarily narrowing the scope of their discovery requests and, hypothetically, reducing the cost of providing the information, have led courts to consider implementing court-wide rules instructing judges on how to deal with discovery (case management orders). Theoretically, these case management orders involve the best practice of discovery management.[2]

The first problem for the court, however, is determining what those best practices are. Judges differ in their ability to manage the discovery balancing act. Given the stakes in judicial intervention and the discretion that courts must leave to judges in monitoring the discovery process, there has been considerable skepticism that rules could be developed to reduce

---

these requirements have not been effective at reducing motion practice in discovery. For example, see Rosenthal (2006),

> The problem has been that the meet-and-confer is too often treated as a perfunctory "drive-by" exchange. If Rule 26(f) has been approached in this fashion, the Rule 16 conference may accomplish little more than setting a few dates.

[2] The idea of judicial case management in discovery and more broadly is not without controversy. Peckham (1985), for example, is an early defender of case management by judges arguing that recently adopted case management rules regarding discovery were necessary to check the adversarial nature of the system.

> Notwithstanding the revolutionary nature of these changes, the consensus of federal judges and litigators is that management effectively reduces delay and cost, and management should be a permanent feature of federal judicial administration. (Peckham (1985), page 254).

By contrast, Resnik (1982), an early critic of case management by judges, has argued against case management on due process grounds.

> Judicial management has its own techniques, goals, and values, which appear to elevate speed over deliberation, impartiality, and fairness. Ironically, the growth of federal judges' interest in management has coincided with their articulation of due process values, and their emphasis on the relationship between procedure and just decision making. (Resnik (1982) p.425).

For an interesting summary of the debate on case management, both with regard to discovery and more broadly, see Marcus (2021).

discovery costs independently of which judge was applying the rules. Put differently, the problem with case management as a strategy to mitigate discovery costs is that it would appear to depend on specific judges and makes discovery costs dependent on judicial assignment. As Elliot (1986) puts it, the problem is that case management, particularly as it relates to discovery, is ad hoc.[3]

In fact, a series of empirical evaluations in the 1990s looked at various policy experiments in case management and suggested that the success of case management techniques was highly dependent on which judge was assigned the case. Several RAND studies examined the Civil Justice Reform Act (CJRA) of 1990, a law whose passage was motivated in part by concerns about abuse of discovery (Kakalik et al., (2000).[4] The RAND studies found that the impact of CJRA reforms on proxies for discovery costs was minor and dependent on judges deciding to engage in active case management. Put differently, the researchers could not untangle the impact of specific rules from how successfully or even how aggressively individual judges tried to manage discovery. It was impossible to differentiate the specific judge from a court-wide case management order. This left researchers with no basis for recommending case management orders or specific rules as a method for controlling discovery costs since active

---

[3] As Elliot (1986, page 334) states,
> The fundamental weakness in managerial judging is its ad hoc, flexible character. The basic premise for managerial judging is that the effects of incentives for socially inappropriate behavior in litigation can be overcome by designing counteracting incentives on a case-by-case basis. This approach has the understandable appeal of necessity to the judges who are faced with the task of dealing with individual cases in which they see what they consider to be gross abuses. But as a comprehensive strategy for dealing with the effects on inappropriate incentives in litigation, managerial judging is more stopgap than final solution.

(cited in Fitzpatrick, 2018)
[4] For a summary of the research, see Kakalik et al. (1998).

management by specific judges might explain any observed impact and imposing a case

management order across all judges in a court would have no effect on discovery costs.[5]

Although focusing on a somewhat different set of issues than the RAND study, a 1998

Federal Judicial Center (FJC) study examined the scope, nature, and cost of discovery in federal

cases by surveying attorneys in a sample of civil cases (Willging, (1998)). As part of this survey,

the FJC also examined the impact of case management and found, much as RAND did, a limited

effect of case management upon discovery costs.

These two studies, both over 20 years old, remain the most authoritative work on the

subject of discovery and the role of court-based case management rules versus the impact of

specific judges in reducing discovery costs. As such, policy debates on discovery costs

frequently invoke them to demonstrate the ineffectiveness of case management (e.g., Gensler,

(2010)). In this study, we return to the question of whether court management techniques can

reduce the costs of discovery to the court by reducing the likelihood of discovery motions. We

attempt to untangle the impact of specific judges from the use of a particular case management

technique. We focus on the use of informal discovery conferences (IDCs) in which parties meet

with the judge before filing a motion to compel. Courts have created IDCs to reduce discovery

---

[5] The vast majority of civil cases move through the court system without discovery, let alone discovery disputes, and the court system can handle them at a comparatively low cost. By contrast, complex cases with high financial stakes are often the subject of numerous discovery requests and hence discovery conflicts. (Bryant, 1998). Because most cases did not involve substantial discovery costs or disputes, the RAND researchers concluded that the CJRA was unlikely to impact overall discovery costs significantly regardless of the study's inability to separate the rules in the CJRA from individual judge effects. The RAND report recommended that judges identify cases with potentially high discovery costs early and target them for more active case management. For a more recent discussion of the CJRA and an evaluation of the CJRA's impact on case duration, see Petkun (2021)

As we discuss further below, the Los Angeles Superior Court (LASC) essentially implemented the RAND's recommendation and also followed the opposite course. LASC first created the complex courts, designed to provide judges in courts with the time to undertake active case management of which IDCs are an integral part. However, in 2013 it created the personal injury hub to handle less complex cases, the sort the RAND study would have suggested would benefit far less from active case management. LASC also requires IDCs in these cases, although it does not routinely schedule case management conferences.

costs by reducing the need for discovery motions. In our sample, the average length of a discovery motion is 34 pages, but there is a long right tail to the distribution with motions of 1,000 pages or more occurring in the data.

Moreover, while the average case in our sample has around three discovery motions—typically one or two motions to compel and a motion to quash, the right tails of these distributions are long. Simply drafting and reviewing these motions, in terms of litigants and judicial time, suggests that the proponents of IDCs are correct. If IDCs reduce discovery motions, they will almost certainly reduce one aspect of litigation costs even if they do not make discovery requests more proportional. However, if IDCs are not effective at reducing motion practice, it is possible that they could reduce judicial attention and delay litigation while also leaving discovery motions undiminished. In this study, we evaluate whether using an IDC reduces the number of discovery motions in that case.

The problem with simply testing whether IDCs reduce the number of discovery motions is that, as the RAND and FJC studies suggest, the use of IDCs is likely endogenous. That is, litigants are probably more likely to request IDCs – and judges are probably more likely to impose them – in cases that are also more likely to have complex discovery issues. Our solution to this endogeneity is to use the random assignment of judges within the largest courthouse of the Los Angeles Superior Court (LASC). Since some judges have a higher propensity to use IDCs and some branches of the LASC have begun requiring them, we have two sources of policy variation. Put more succinctly, since LASC assigns judges to cases randomly, we can use a judge's propensity to use an IDC as a quasi-experiment in the effects of IDCs.

One way to think about our policy experiment is that judges always have the option to use IDCs in the California courts. The policy question is whether requiring (via a case

management order), or at least strongly encouraging, non-adopter judges to use IDCs is beneficial in reducing motion practice in discovery disputes. The answer depends on the effects of IDCs independent of which judge is using them. There are four possibilities. The first is that IDCs do not do anything—the entire effect of an IDC is through other actions that IDC-using judges undertake, but that judges forced to use IDCs would potentially not undertake. In this case, we should observe no benefit from broader adoption of IDCs. The second is that IDCs work for certain types of judges, for example, judges who are more active in other areas of case management, but that some judges need a push to determine if they would benefit from using IDCs. In this scenario, broader adoption of IDCs would decrease the court costs associated with discovery to the extent that some judges, who would be good at using IDCs, are pushed into using them. The third possibility is that all of the judges who can implement IDCs well have already done so, and if the court forces the remaining judges to use IDCs, there would be little improvement. That is, the gains have already been realized. Finally, there is the possibility any judge would benefit from IDCs, but there is some friction that prevents more judges from adopting them. In this last case, a comprehensive case management order requiring or encouraging IDCs would also demonstrate an overall improvement in discovery management.

Using the random assignment of judges as an estimation strategy, we find that IDCs reduce the number and presence of discovery motions by 64%. We also examine the key assumptions of using a judge's propensity to use IDCs and random assignment as an instrument for IDC use in a specific case. Using the Fradsen et al. (2019) FFL test of the exclusion and monotonicity assumptions, we reject the null that the exclusion and monotonicity assumptions hold for all case types and outcome measures. We then examine whether average monotonicity might hold by excluding case types that reject the null. We find broadly stable coefficients across

several measures suggesting that while strict monotonicity does not hold, average monotonicity, which is sufficient for estimating local average treatment effects, does hold (Fradsen et al. (2019)).

We then turn to several alternative experiments involving the Personal Injury (PI) hub, which the LA courts created to deal with budget cuts. In PI hub cases, a judge is randomly assigned to hear an IDC, whether the judge uses IDCs in general jurisdictions cases or not. In this experiment, we are less concerned about confounding effects since the judge only hears the IDC and is not involved in other aspects of the case. We find similarly large reductions in the probability of a discovery motion in the PI hub cases. Finally, we estimate a difference-in-difference model with assignment to a PI hub cases as the treatment—the date a judge was exposed to IDCs. When we compare the probability of a discovery motion for judges who adopt IDC use after being assigned to a PI Hub IDC to judges who do not use IDCs after a PI hub assignment, we find a 1% reduction in the probability of a discovery motion. The results suggest that IDCs do reduce the probability of a discovery motion; that is, the results are inconsistent with scenarios one and three above, although the exact magnitude of the effect differs across our experiments.

Section 2 of the paper describes the problems with discovery and how informal discovery conferences might mitigate them. It further describes LASC changes in civil procedure that required their use in certain types of cases. Section 3 describes the datasets used in the analysis. Section 4 presents the methodology and results, and Section 5 describes a series of robustness checks. Section 6 concludes.

2. Informal Discovery Conferences

The laws of civil procedure in both state and federal courts allow litigants to request information from the other party in the case.[6] These can be questions that the other side must answer (interrogatories), the opportunity to depose witnesses under oath, requests for documents, or physical examinations. If parties do not respond to these requests, they face potential sanctions by the court. Parties can object to requests for information on the grounds that the request is too broad or for information not germane to the case, and if such a request is successful, the court will not sanction the party for not providing the information.

The problem is that motion practice in discovery disputes, in which parties requesting relief from the court rather than informally reaching an agreement in discovery disputes, is allegedly quite costly to the court and potentially to litigants. Anecdotally, judges report that a significant amount of their time is spent resolving discovery motions.[7] The question is whether case management in general and IDCs in particular, can a) reduce the frequency of discovery motions and b) whether those reductions, if they occur, are related to lower court costs. In this paper, we primarily address the first question: Do IDCs reduce the likelihood and frequency of discovery motions? Several pilot studies suggest that requiring judicial involvement before discovery motions can be filed reduces the likelihood of discovery motions (see IAALS, (2015)). Unfortunately, the evidence for IDCs is largely based on pilot studies. The endogeneity issues examined in this paper are also present in pilot studies in which judges voluntarily agree to

---

[6] As Spier (2007) notes, information sharing serves a variety of objectives in litigation. It makes court decisions about the facts of the case and hence leads to more accurate adjudication. Moreover, by giving a more accurate picture of the outcome at trial, information sharing encourages cases to settle without costly trials. However, the incentives to produce information are far from perfect. It may also serve a broader regulatory function to the extent that it makes public information about potential wrongdoing that can attract the attention of government enforcement efforts.

[7] See the Institute for the Advancement of American Legal Systems ("IAALS")/American College of Trial Lawyers ("ACTL") report titled Reforming Our Civil Justice System: A Report on Progress and Promise and the 2015 amendments to the Federal Rules of Civil Procedure.

participate in an evaluation of a case management technique such as an IDC. Our aim with this paper is to evaluate the effectiveness of IDCs at reducing discovery motions and provide a possible framework for evaluating other aspects of case management.

The second question is, do ICDs reduce discovery costs both in terms of the costs to the court and perhaps the cost to parties of complying with discovery because IDCs voluntary nature allows compromises on disproportionate discovery requests? The evidence is more limited on this question because almost no studies have access to discovery costs.

For the typical case, motion practice over a discovery request would be: (1) a motion to compel (2-5 pages in the LA Courts data) along with a brief (15-45 pages); (2) an answer to the motion (similar length); (c) and, in a minority of cases, a reply brief (typically shorter than the brief or the answer).[8] The judge must review these submissions and (infrequently in our data) conduct a hearing on arguments before issuing a ruling. In more complex cases, of course, the process is far more involved, often with multiple motions, counter motions, and efforts to limit what can be done with the outcome of discovery. However, in more routine cases, it is possible that an IDC is just as costly in terms of attorney time and perhaps judge time as the typical motion practice in discovery. Lawyers must prepare their arguments before an IDC even if the submission is shorter. Although judges do not issue a ruling in an IDC, they may need to research the parties' arguments before giving their views. In short, IDCs might simply be motion practice by another name.

We cannot resolve this issue in this study, but there is some survey evidence that early case management conferences with the judge reduce costs both in terms of attorney and judicial time and also the cost of complying with discovery requests. In a survey by the LASC Complex

---

[8] Although, as noted above, the right tail of the distribution of motion page length is quite long.

Litigation Program of 57 lawyers who had a case in the complex courts that required IDCs, 98% agreed IDC reduced the costs of discovery. (75% strongly agree, 23 % agree).[9] The survey was by no means scientific, and since it was conducted by the complex courts, it is possible that lawyers were simply telling the complex court what they thought it wanted to hear. However, a survey by IAALs found similar results on a much broader and randomly chosen sample. In this survey, 59% felt that conferences helped reduce discovery costs. The problem was that meet-and-confer requirements, such as the requirements in the California and federal courts, typically do not occur, according to 40% of the respondents. IAALs survey of pilot programs suggested effectiveness at cost reduction was critically tied to judicial involvement.

There is also some theoretical evidence on the role of case management in mitigating discovery costs. Schrag (1999) models the effects of allowing judges to manage discovery in order to reduce costs. Similar to the survey evidence from IAALs and the LA Complex Courts, Schrag takes as a starting point that managerial judging is largely about reducing the scope of discovery to reduce costs and speed up litigation. Schrag models judges' early intervention as having the effect of promoting early settlement and reducing expenditures on litigation.

Regardless of whether using an IDC would reduce court costs or discovery costs more broadly, the problem with managerial judging, as discussed above, is that judges appear to vary in their ability or willingness to undertake early discovery management, and hence it is difficult to evaluate the effectiveness a particularly case management technique. In the next section, we provide some background on the LASC's use of IDCs before turning to our method of evaluating the effectiveness of that program.

---

[9] See Cost Savings in the Los Angeles Superior Court's Complex Litigation Program (August 2007).

2.1 Informal Discovery Conference in LASC

Formal use of IDCs began in California in 2000 when courts in six counties established Complex Litigation Pilot Programs to handle more time-consuming cases.[10] Over the next decade, all of the complex litigation courts implemented early judicial intervention in discovery disputes, i.e., before the filing of discovery motions. These processes, which became the IDC process, all involved an informal consultation between the opposing counsel with the judge participating in the conference but without the judge making binding rulings. Anecdotally, some complex court judges reported that informal discovery dispute resolution saved judicial resources and reduced litigation costs.[11]

An IDC, of course, involves personal interaction between the judge and the lawyers who have a discovery dispute. Critically for our test of the policy's effectiveness, the interaction occurs before a party files a discovery motion. The IDC may take place by telephone or in person. Litigants typically begin an IDC by alerting the judge during a status conference that the parties disagree about some aspect of the discovery process. At this point, the judge may direct staff to set up a telephone or in-person conference with all counsel. The judge may also ask counsel to prepare a brief statement, typically less than five pages.[12]

---

[10] As noted above, federal courts, and a number of state courts, including California, have, for some time, had meet-and-confer requirements. Under the Federal Rules of Civil Procedure, parties are required to discuss discovery issues. The key difference between meet-and-confer requirements and an IDC is that IDCs require judicial involvement. As the IAALS (2015) report notes, meet-and confer-requirements are generally considered to be ineffective at reducing discovery motions or discovery costs. Some magistrate judges in the federal courts also utilize IDCs.

[11] Although IDCs originated in complex courts, the California Rules of Civil Procedure were amended to provide that informal discovery conferences may be requested by the parties or required by the court before a discovery motion may be filed (California Code of Civil Procedure section 2016.080). The statute sets specific time parameters within which an informal discovery conference must be held, but it does not require a judge to hold such a conference.

[12] The California Code of Civil Procedure addressing informal discovery conferences, section 2016.080, only says that the party requesting the conference shall file a declaration describing the parties' "reasonable and good faith attempt at an informal resolution of each issue." This declaration is typically only a one-page form. However, a minority of judges that require an IDC also require the parties to file a 3-5 page joint report on the issues in dispute.

At the IDC, the judge speaks with the parties about the discovery dispute and typically gives the parties a tentative, non-binding view of how she would resolve the dispute. If a tentative review is impossible, the judge may ask the parties to brief a legal or factual issue central to the discovery dispute. The parties always retain the right to file a discovery motion after the IDC.

Although IDCs originated in complex courts, the LASC complex courts are not an ideal venue for testing the impact of IDCs. The problem is that IDCs are nearly universal in the complex courts. To evaluate the effectiveness of IDCs, we turn to judges in general jurisdiction cases (cases with over $25,000 in dispute). We focus on cases at the Stanley Mosk Courthouse (Central Court) in downtown Los Angeles. The Stanley Mosk Courthouse is near the LASC complex courts. This proximity has led to a high level of communication between complex litigation judges and judges at Stanley Mosk. This communication has led more Stanley Mosk-based judges to use IDCs as a case management technique. These judges encourage lawyers to use IDCs by notifying counsel of the judge's preference for using IDCs. The judge can make her preference for using IDCs either 1) in the initial status conference with the parties and 2) in a statement of judicial policy on the LASC website. Notably, LASC does not require general jurisdiction judges to use IDCs except when judges are assigned an IDC request in the personal injury hub discussed below.

Moreover, general jurisdiction judges vary in the frequency with which they use IDCs. Some judges do not allow them, and some judges present it as an option to litigants, others

---

The brevity of the filings in IDCs is important as it suggests that the filings are not just early motions. For example, motions to compel, discussed below, are on average 35 pages or more, with a substantial right tail, and contain far more information than a typical IDC. Moreover, as one judge puts it, "what is said in the IDC stays in the IDC" (Jessner et al. (2016)) meaning that IDCs are not binding or precedential.

suggest it, and others require it. When asked why they do not use IDCs, judges list various reasons, including discomfort with the informality of the technique. Others argue that IDCs are too disruptive to an already packed calendar. Finally, several judges who do not use IDCs felt they would be unprepared to give a tentative view of a discovery matter without a full briefing and time to deliberate on the issues.

Figure 1 shows the correlation between the percentage of the judge's cases that use an IDC and the percentage of the judge's cases with discovery motions. The figure shows a negative correlation between IDC use and the proportion of a judge's cases that have discovery motions. The figure also shows a wide variation in IDC use by judges in the Stanley Mosk courthouse. For example, the judge with the random ID number 151 uses IDCs in almost 80% of their cases while almost a third of the sample of judges never use IDCs. We also provide the linear best fit line, excluding our outlier judge 151, which suggests that increased IDC use is associated with few discovery motions.[13] What is unclear, however, is whether judges using IDCs are in some way systematically different from judges who do not or if IDCs are causing the negative correlation.

In Figure 2, we show the within-judge variation over time. The solid black line shows the average IDC use over time. The lighter grey lines show the trends for the 75 judges in our sample who have more than 100 cases over the sample period. Aside from judge 151, who dramatically increases their IDC use in the first few years of the sample and continues to use IDCs in almost all cases thereafter, other judges vary in their uses through time with a group of judges never using IDCs and a second group adopting them over the sample period.

---

[13] Note that all results in the paper are robust to exclude judge 151, who is something of an outlier in IDC usage.

Given that general jurisdiction courts randomly assign judges to cases, excluding cases in the personal injury hub where judges are randomly assigned based on their availability on a given day when an IDC is requested by one of the parties, we can treat judges' random assignment as a quasi-experiment in the use of IDCs.[14] An intent to treat analysis, however, requires that other aspects of judicial behavior that may impact the filing of discovery motions are either the same, or at least random, with respect to IDC use. That is, to use the intent to treat approach, it must be the case that judges using IDCs are not, for example, better at encouraging parties to settle than judges that do not use IDCs. In the next section, we present a second policy experiment that allows us to examine this assumption more closely; the incorporation of IDCs into the personal injury hub.

2.2 A Policy Experiment: IDCs in the Personal Injury ("PI") Courts

In response to a budget crisis in the mid-2000s that cut about 25 percent of the LASC staff over four years, LASC created the personal injury hub, which handles all personal injury cases. LASC created the hub primarily to deal with court delays resulting from funding cuts. The assumption was that personal injury cases generally present more straightforward factual and legal issues than most other general jurisdiction civil cases and benefit less from hands-on judicial management. To save time, the four offices that make up the PI hub do not schedule case management conferences but rather only hear motions presented by the parties.[15] When the cases are ready for trial, the hub sends them to an "open" courtroom for trial before a judge who only hears the trial. Both the judges hearing motions and the judge presiding at trial are randomly

---

[14] Specifically, we use the judge's propensity to use IDCs and random assignment as an instrument. First suggested by Imbens and Angrist (1994) and labeled a "leniency design," the strategy is to use the decision-makers' average tendency to utilize treatment, in this case, an IDC, under random assignment as an instrument for treatment in a specific case.

[15] LASC began the PI hub in March of 2013 with three departments in the Stanley Mosk Courthouse (91, 92, and 93). In January 2014, LASC added department 97, and in September 2015, LASC added department 98. IDCs have been required for all PI hub departments since their creation.

selected conditional on availability on a given day. The judge hearing an IDC or motion is selected based on availability on the requested IDC date, while the trial judge is drawn on availability on the day of the trial. For this reason, it is unlikely that the judge who conducts the IDC will deal with additional procedural matters or be the trial judge.

Based on the experience with IDCs in the complex courts and the experience of general jurisdiction judges who use IDCs, the PI hub issued a standard case management order requiring (see below) parties to contact court staff to request an IDC before filing any discovery motions. The IDC in the PI hub is not at the discretion of a judge, who would be assigned to hear the IDC after the parties scheduled it. The parties cannot file a motion to compel unless they have requested an IDC. However, if the opposing party does respond to the request for an IDC or attend the IDC if scheduled, the PI Hub will allow the requesting party to file a motion to compel. Surprisingly well over half the motions filed in the PI hub do not have a corresponding IDC due to a failure to respond by the other party.

Thus the IDC experiment in the PI hub is somewhat different from the general jurisdiction cases since all judges are required to use them if there is a discovery dispute, but since judges do not hear other aspects of the case beyond the IDC, we have less concern that other judge-related factors are influencing the results. The judge fixed effects also measure something different from the general jurisdiction cases. Since the parties are required to have filed a request for an IDC before filing a discovery motion, the judge fixed effects are likely to measure how willing the assigned judge is to force the IDC if one party is recalcitrant. However, the PI Hub experiment creates a different concern, namely that the cases in which one of the parties does not respond to a request for an IDC, and hence a motion to compel is allowed

without an IDC taking place, are systematically different from cases in which an IDC is requested and both parties participate.[16]

3. LASC Courts Data

3.1. Stanley Mosk Court House

Our analysis focuses on the use of IDC by judges assigned to civil cases in the Stanley Mosk Courthouse in Los Angeles. We focus on the Stanley Mosk Courthouse, the central courthouse of the Los Angeles County Court System because it has the largest number of judges in LA County. Its proximity to the complex court facilitated some judges' earlier adoption of IDCs.

The Superior Court of California, County of Los Angeles, has jurisdiction over all cases in Los Angeles County. It is the largest single unified court system in the United States, with 38 courthouses, approximately 530 courtrooms, and 494 judges. In 2019 it handled over 150,000 civil cases. We focus only on civil cases with over $25,000 in dispute, which reduces the number of cases to approximately 50,000 per year in LA County. Litigants file over 80% of these cases in the central district.

The Stanley Mosk Courthouse, which handles the vast majority of central district civil cases, is located in downtown Los Angeles. It has over 100 courtrooms and is the largest courthouse in the United States. In 2019 there were 104 judges assigned to the courthouse.[17] Civil cases can take several paths to Stanley Mosk. Plaintiffs could file personal injury cases in

---

[16] Note that "The PI Courts may consider a party's failure or refusal to participate in an IDC in deciding whether to award sanctions requested on a motion to compel further responses to discovery." See FREQUENTLY ASKED QUESTIONS PERSONAL INJURY COURTS (DEPTS. 91, 92, 93, 97 & 98) (10/11/2017)

[17] Not all judges hear civil cases, and several judges depart early in the sample period or arrive at Stanley Mosk late in the sample period and hence have too few cases to be included (less than 100). With these restrictions, we have 75 judges included in the sample although different specifications may have a smaller number of judges.

local courts until 2013 when the LA County courts centralized personal injury cases at Stanley Mosk due to the above-mentioned budgetary pressures.

The Los Angeles court system uses the California Court Case Management System, which is similar to the better-known federal courts PACER system. The LA Court system provides information on all cases, including the case number, filing date, courthouse, and the type of case. The system also includes information on the status of the case (dismissed, trial, etc.), the parties to the case, and the attorneys for each side. The docket information includes a summary of all proceedings in the court, the timing of the proceeding or when the relevant party filed the motion, and a brief summary of each event's significance.

We can construct our variables from data scraped from the LA Courts. Beyond case numbers and the parties' names, we also know the type of case, i.e., motor vehicle accident, and the status of the case. We can also determine the number of discovery motions filed and, if the judge ruled on the motion, the eventual ruling on those motions from the docket and list of documents filed and the register of actions. Finally, we can determine whether the case was assigned to the personal injury hub.

We classify motions into four types: order motions, motions to quash, protective order motions, and, most commonly, motions to compel. A motion to compel asks the court to enforce a request for information that the party filing the motion feels is relevant to the case. This motion could require the production of documents, a deposition, interrogatories, a request for facts, and/or a subpoena. Motions to quash ask the court to rule that the target of a discovery request does not have to respond to a discovery request. Protective order motions, by contrast, aim to prevent the disclosure of sensitive information such as client lists or trade secrets or to preclude

the opposing party from taking certain discovery actions. Parties typically request an order

motion after a party has failed to comply with an earlier discovery order.

Figure 3 provides the number of discovery motions per case during our sample period. As

shown in Panel B of Figure 3, the majority of the motions are motions to compel. In addition,

we construct several other measures of the scope of discovery disputes. We construct a measure

of the average page length of all filed discovery motions to determine if the motions that are filed

are in some way more limited. We include an indicator for any hearings on discovery as some

judges prefer to have hearings rather than a filed motion (or both). We construct an indicator for

whether the motions that were filed were granted. We also construct indicators for whether the

judge eventually overruled a motion. We create an indicator for whether any motions or

objections to motions are declared moot by the judge and, finally, whether any objections to

another party's motion were sustained. The purpose is to see if IDCs alter the nature of discovery

disputes in ways that go beyond filing motions.

One issue with our sample of cases is that the vast majority of the cases in LASC have no

actions on the docket beyond filing and the closure of the case. While these cases have no IDCs,

it seems likely that there was no discovery needed in the cases.[18] For this reason, we limit the

sample to cases that had either a conference, some type of motion, hearing, ruling, or some

combination of the above. The sample thus constructed has 25,072 cases. However, in 6,297 of

those cases, the judge changed during the case.[19] For this reason, we break the case down into

IDCs and motions before each judge during the portion of the case the judge oversaw. Table 1

shows the summary statistics for the sample. In Panel A, we show the means and standard

deviations for the discrete outcome measures, Panel B the same for our continuous measures, and

---

[18] See Willig (1998) for evidence on the frequency of discovery in a sample of federal cases.
[19] The results are robust to excluding these cases, as shown in Appendix Table 1.

in Panel C, we show the descriptive statistics for our control variables. In Appendix Table 1, we show a breakdown of cases in our sample by which cases had an IDC across both the PI hub and General Jurisdiction cases. The balance test suggests that the sample of cases in which the judge uses an IDC is not random as several control variables are significantly different between cases with IDCs and those without. It seems plausible that unobserved factors are also systematically different.

4. Estimation Method and Results

4.1 Evaluating Judge Fixed Effects as Instruments

As noted above, Imbens and Angrist (1994) first suggested leniency designs as an instrument. Because courts typically randomly assign judges to cases, researchers have increasingly used a judge's propensity to treat as instruments to identify treatment effects. In one of the earliest examples of using the random assignment of judges, Kling (2006) uses the variation in the judge's sentencing "harshness" as an instrument for sentence length and then examines the impact of sentence length on labor market earnings.[20] The key assumptions required to make a leniency measure a valid instrument are: a) a non-zero first stage, b) courts randomly assign cases to judges, c) the standard IV exclusion restriction that judges exert no influence on the outcome variable except via the treatment variable (exclusion), and d) that the judge's assignment has a weakly monotonic effect (Frandsen et al., (2019)).

The first stage results are presented in Table 2. We utilize three different versions of the instrument. We estimate the model using non-PI hub cases. In Column 1, we use judge fixed effects for all judges in our sample. In Column 2, we replace the judge fixed effects with the

---

[20] The design is increasingly commonly used in studies of criminal justice (see Dobbie, Goldin, and Yang (2018), Aizer and Doyle (2015), and Stevenson (2018)). For a comprehensive summary of the assumptions and the literature, see Seward et al. (2021)

leave out judge "leniency" measure—in this case the average propensity of the judge to use IDCs over the sample period excluding the current case.[21] Finally, in Column 3, we use the residual leave out measure taking out the variation due to case type and year. Although the F test rule of thumb that F statistics greater than 10 indicate a strong instrument is not valid for multiple instruments, such as the fixed effects measure in Column 1, the F test far exceeds the rule of thumb value in each of our specifications.[22] As discussed above, LASC randomly assigns judges to cases both inside and outside the PI hub. If judges are unable to complete a case, the court randomly assigns a replacement.

The exclusion restriction requires more discussion. The Kakalik et al. (1998) study suggests that judges who engage more actively in management are generally more likely to use specific case management techniques. Thus, we might be concerned the judge fixed effects violate the exclusion restriction because judges who use IDCs are more likely to use other case management techniques that reduce discovery motions. While this is possible, there are reasons to be less concerned about confounding judge-specific effects in the context of IDCs relative to other case management techniques. First, other pathways for judges to influence the filing of a discovery motion are less likely because filing discovery motions are at the discretion of the litigants and not the judge. Absent an IDC, there is typically no consultation with the judges regarding discovery disputes until litigants file motions. In fact, several judges have suggested that there are very few steps beyond an IDC that a judge could take to reduce discovery motions to the extent that the judge was even aware of a discovery dispute. As we discuss further below,

---

[21] The results are similar when we use the retrospective leave-out measure. That is, we include only previous cases in the measure.

[22] Some care should also be taken using the F-test as a measure of the strength of leave-one-out-instruments. In this case, the F-stats are mechanically inflated although the degree of inflation is not known. See Seward, Vigliotti, and Cunningham (2021) and Hull (2017).

this may not be true of other measures like case duration, the number of hearings, or other outcome measures in which unobserved judge characteristics might influence the duration of the case, whether there is a hearing or not.

We also utilize the PI hub to provide further evidence on the exclusion restriction. Specifically, we estimate the model using only PI hub cases. Although these cases are very different from other civil cases, they have been selected for the PI hub because they are less likely to need active case management, the judge is assigned to hear the IDC only when the parties request it, and the judge will not, generally, be ruling on any future disputes or even any additional discovery motions filed and will not be the trial judge. This limits the possibility that other case management techniques used by the judge will contaminate the IDC experiment.[23]

We also use the PI hub assignment itself as an exposure to treatment. We do not have a period in our sample when IDCs are not used, nor do we have a specific moment when they are required (outside of assignment to the PI hub). We do, however, know the first time a judge was assigned to the PI hub to conduct an IDC. We can then estimate whether judges who first use an IDC in the PI hub are more likely to use an IDC in general jurisdiction cases assigned to them. Both of these alternatives are explored further in our robustness checks.

The monotonicity requirement implies that if Judge A is more likely to use IDCs than Judge B, every case before Judge B that uses an IDC would also have used an IDC before Judge A. In our case, this means, for example, that a judge could not use IDCs only in one type of case, say employment disputes but never use them in auto cases, while a second judge flips a coin and uses them half the time in both case types. Strict monotonicity may be problematic in our context

---

[23] The PI hub also mitigates a second concern, namely that parties will use manufactured discovery disputes to get a hearing with the judge or to ingratiate themselves to a judge that likes using IDCs. Since the judge hearing the IDC in the PI hub may or may not like using IDCs in their general jurisdiction cases and is very unlikely to hear other aspects of the case or trial, the value of a hearing absent a real discovery dispute is greatly diminished.

since while Figure 1 suggests that judges have different propensities for using IDCs, it is possible that Judge A uses them more frequently than Judge B overall but less frequently in certain case types, for example.

Frandsen et al. (2019) propose a test of the instrument validity of judge fixed effects. Their procedure jointly tests exclusion and monotonicity so that a rejection of the null indicates that one or both of the conditions for validity fail. Table 3 shows the Chi-squared statistics of the test by claim type, excluding claim types and judges with less than 100 observations across the analysis periods (2012 through 2018). As shown in the bottom row of Table 3, we reject the null that both monotonicity and exclusion hold for the full sample across all outcome measures. When we break this impact down by case types, we find certain case types, such as premises liability, medical malpractice, etc., fail to reject the null across most outcome variables. Overall, we have a wide heterogeneity in the FLL test rejections across different outcome variables by claim type.

Figure 4 presents the relationship between the judge leniency measure and residualized IDC rate to check the monotonicity assumption. The bar graphs show the distribution of the judge leniency measure, and the line graphs show the correlation between the judge leniency measure (in the x-axis) and the probability of assigning IDCs (in the y-axis), which is the graphical representation of the first stage of the instruments. The y-axis on the left lays out the density of the distribution, and the y-axis on the right shows the probability of IDC assignment. We use the residualized IDC rate and leniency measure to determine the as-if random conditions across claim types and years (excluding PI hub cases). Practically, we regress IDC on claim type and year, obtain the residuals from the regression, and get the leniency measure by getting the average (residualized) IDC rates among judges excluding the present judge.

The upper panel shows the overall relationship has strong monotonicity with a violation at the extreme level of judge leniency. Specifically, the probability of assigning an IDC (shown on the y-axis) constantly increases until the judge leniency measure hits around 0.75 (on the x-axis), and it drops afterward. Similarly, the middle panel shows strong monotonicity in motor vehicle torts again with a potential violation at the extreme level of judge leniency. However, the estimate is imprecise at the right tail of the distribution due to the lack of observations. In other words, the gray lines indicate the 95% confidence interval, and the wide range of the gray lines means the correlation between the judge leniency and the probability of IDC assignment is unreliable at the extreme level. On the other hand, the bottom panel shows strong monotonicity in contract claims. Put together, we find that monotonicity can vary across claim types; e.g., the exclusion restriction may be violated in motor vehicle torts while it is less likely to be violated in contract claims. This finding motivates us to conduct the FLL test by claim types to sort out the valid observations to conduct the regression analysis. Table 4 presents the FLL test for the number of motions rather than the discrete outcomes tested in Table 3. The results are similar.

Because of these concerns, we also evaluate monotonicity using different subsamples. While strict monotonicity is required to estimate marginal effects, it is possible to estimate average treatment effects using only the average monotonicity assumption (Fradsen et al., (2019)). One common check of average monotonicity is coefficient stability across subsamples. Moreover, we test whether the first stage shows positive coefficients in various subsamples, as suggested in Fradsen et al. (2019).

4.2 Specification

We estimate the model using instrumental variables. We estimate the first stage as

$$IDC_{ij} = \alpha_0 + \alpha_1 instrument_{ij} + \alpha_2 X_{ij} + \epsilon_{ij}$$

where IDC_{ij} is the number of IDCs used in the case or an indicator of whether the judge i used

any IDCs in case c, the variable *instrument* is either judge fixed effects, our leave out leniency

measure, or our residual leniency measure. The leave-one-out leniency measure is our proxy for

the probability a judge uses an IDC and is defined as the average probability a judge uses an IDC

in all of the cases in the sample to which the judge is assigned, excluding the current case. This

approach is equivalent to using judge fixed effects. X_{ij} is a vector of controls for the type of

claim (i.e., auto accident, products liability, etc.,), year fixed effects, controls for the number of

parties, corporate litigants, pro se plaintiffs, and lawyers from larger law firms, and ϵ_{ij} is the

robust standard error clustered on case.

We estimate the second stage regressions as

$$motions_{ij} = \beta_0 + \beta_1 IDC_{ij} + \beta_2 X_{ij} + \epsilon_{ij}$$

where $motions_{ij}$ is the number of discovery motions (motions to compel, order motions,

motions to quash, or protective order motions), the outcome of those motions (hearings,

overturned motions, granted motions, mooted motions, or sustained motions) in case i before

judge j. We also estimate the duration of the case in days and the log of the average number of

pages in filed discovery motions as outcome measures. The unit of observation is a judge case,

but there are a few cases in which the judge changes during the litigation. In this case, we treat

the two judges as independent and use only motions heard by each judge and IDCs filed before

the same judge. The results are robust to using only cases with a single judge (see Appendix

Table 3).

4.3 Results

      Table 5 presents the regression results of the presence of an IDC, i.e., at least one IDC in

the case, on whether there were any discovery motions in the case. We estimate the models with

a linear probability model, and the IV uses judge fixed effects (2SLS), judge fixed effects on the subsample of case types that do not reject the FLL test (2SLS Subset), the leave-out-one average (Leave-Out), and the residual measure which removes case and year effects (Residual). Column 1 presents the result of the OLS regression without controlling for the endogeneity of IDCs. For the presence of any discovery motion in the case, we find that IDCs reduce the likelihood of any discovery motions by .54, almost a 61% reduction in the 89% probability of a discovery motion. When we control for endogeneity using judge fixed effect in Column 2, the decrease is similar, reducing the probability of .64, a 72% reduction. We find similar results in Column 3, labeled "2SLS Subset," where we drop all case types that do not pass the FLL test. The coefficient remains at -.638 and is highly significant. In Column 4, we retain the focused sample but switch to the leave-out measure, which uses the average IDCs used by the judge across all cases, excluding the current observation. Again, the coefficient is stable and significant (-.632). Finally, we remove any year or case effects from the leave-out measure in Column 5. The coefficient is -.64 and significant.

The remaining panels present alternative measures of motions generated by discovery disputes. In Panel B, we estimate the model using the most common motions in discovery disputes which are motions to compel, in which a litigant asks the court to enforce a request for information (e.g., production of documents, a deposition, interrogatories, a request for facts, and/or a subpoena, etc.). We find a robust negative and significant effect across all specifications and instrument measures, ranging from -.513 to -.642.

In Panel C, we estimate the model using motions to quash, which seek to prevent discovery. In all specifications of the IV, except the residual measure, we find a negative and robust impact of IDCs range from -.04 to -.07. In Panel D, we estimate the results for order

motions that parties typically request after a party has failed to comply with an earlier discovery order. The negative impact of IDCs is suggestive that IDCs may reduce the scope of discovery requests. Motions to quash automatically excuses the party from producing records until the court orders their production. Objections to the scope of discovery based on a discovery request violating the proportionally principle would be made by the responding party through a motion for a protective order or a motion to quash.

Across our different IV measures and sample specifications, we find that IDCs reduce order motions by .04 to .08 percent. In Panel E, we estimate the effect on protective order motions, which seek to prevent the disclosure of sensitive information or to preclude the opposing party from taking certain discovery actions. Here we do not find an effect across any specification.[24]

In Panel F, we find no evidence that IDCs reduce the need for hearing on discovery motions in the IV regressions. In Panels G and H, we estimate the model by whether the plaintiff or defendant filed the motions. We find that the impact of IDCs is negative and significant across instruments and specifications for both plaintiffs and defendants. Moreover, the magnitude of the effect of IDCs is similar for both plaintiffs and defendants.

In Panels I-K, we turn to alternative measures of how IDCs impact cases and the outcome of motions. In Panel I, we find that cases with IDCs take 34 days longer to resolve than cases without IDC. That impact appears to be driven by the endogeneity of IDCs since we find no impact on case duration for our IV measures. Because the distribution of case duration is highly

---

[24] One issue for the linear probability model (LPM) estimated here is that several of the outcomes, such as protective order motions, being overruled, etc., are quite rare. For this reason, the LPM may produce predicted values outside the zero-one range. However, given that we are using judge fixed effects, we also have reason to be concerned with the incidental parameter problem. We estimate the discrete outcome in Table 5 with a probit model in Appendix Table 6 and find similar results.

skewed, we also truncate the right tail of the distribution at 2,500 days and 2,000 days. The results are similar.

In Panel L, we examine the log of the average page length of filed discovery motions. We find that an IDC is associated with longer motions, almost 10% when we do not control for endogeneity. However, for our IV estimates, we find that IDCs are associated with a 17%-24% reduction in the length of discovery motions. Although motion length is not necessarily equal to scope or complexity, the result suggests that IDCs are in some way causing the parties to modify their eventual filings when they file a discovery motion after an IDC.

In Panels M-P, we examine the measures of the outcome of the motions present in the data. Specifically, we estimate if the motion was sustained, granted, overruled, or declared moot. We find no differences in motion outcomes when we control for endogeneity.

5. Robustness Checks

5.1 Continuous Outcomes

In Table 6, we repeat the estimation using the number of IDCs and the number of motions rather than an indicator for the presence of any IDC or discovery motion. The results are similar across the different specifications to those from the discrete measures estimated in Table 5. We find that the presence of an IDC reduces the number of discovery motions by almost 1.6 to .2 motions using our judge fixed effects measure. We find almost a 70% drop in the number of discovery motions for the IV estimates. The coefficients are again consistent across IV measures and samples.

The impact of IDCs is largely on motions to compel, which, as the name implies, are requests for the court to force the other party to provide information. We also find an effect on motion orders, which essentially ask the court to compel the provision of information the court

has already told the other party to provide, suggesting that IDCs reduce discovery disputes and reduce the scope of the disputes that do arise. The evidence on motions to quash is more mixed. Although the IV estimate shows a negative and significant impact of IDCs on the number of motions to quash, the result is not robust to excluding case types that fail the FLL test. We similarly find that IDCs reduce the number of motions for plaintiffs and defendants by a similar magnitude.

5.2 PI Hub Estimates

The judge randomization design used above for the general jurisdiction cases requires that the only channel through which judges affect the likelihood or number of discovery motions is through their use of IDC. For this to be the case, we need that judges are highly variable in whether they use IDCs (to get a good first stage), but that the variability in how they handle any other motions or other rulings in the case either does not vary across judges or is uncorrelated with IDC use.

To provide additional evidence on the plausibility of the exclusion restriction in Table 7, we estimate the discrete model only using cases assigned to the PI hub. Recall that in the PI hub, the litigants decide whether to request an IDC and the IDC is placed on the calendar of a randomly chosen judge based on availability on the date requested. That judge hears only the IDC and makes recommendations to the parties who may, at their discretion, file a discovery motion to resolve the dispute. The judge is unlikely to hear any other pretrial issues or be the trial judge.

We find that the results on cases in the PI hub are similar.[25] When parties request an IDC, motions are significantly less likely (Panel A of Table 7). The effect is similar to the impact in

---

[25] The results for the first stage PI hub results are shown in Appendix Table 2.

non-IDC cases presented in Table 5. IDCs reduce the probability of any discovery motions by -.72 to -.79 depending on the specification. We find a similar impact on motions to compel and motions to order (Panels B and D), but not motions to quash or motion protective orders (Panels C and E). The results are similar for plaintiffs and defendants (Panels G and H).

Interestingly we also find that hearings are less likely in PI hub cases when there is an IDC, perhaps because a hearing in this case could potentially be with a different judge than the judge finally ruling on the motions or who heard the IDC.

In Panel I of Table 7, we also find that cases with an IDC are shorter cases than those without an IDC. Cases with an IDC in the PI hub are between 280 and 402 days shorter. The result is robust to trimming the right tail of the distribution.

The average page length of motions filed after an IDC is longer when we do not control for endogeneity, but for all but our residual IV measure, we find discovery motions are shorter, by 16-20%, when estimated using IV (Panel L).

Finally, those motions are less likely to be granted, declared moot, or overturned (Panels M, N and O). These other outcome measures, beyond the number of motions, suggest that unlike the general jurisdiction courts, IDCs are altering the outcomes in PI hub cases; cases with IDCs are less likely to have hearings, have fewer but longer motions, and those motions are less likely to be granted and rulings on them are, in some way, less likely to be reversed later in the cases.

The results from the PI suggest that the impact of IDCs is not driven solely by other case management techniques or judge characteristics correlated with IDC use. The result should be caveated, however. IDCs are required before a party can file a discovery motion, so in this sample, cases in which there is no IDC and a motion are cases in which one of the parties has

refused to participate in an IDC. These cases may, in some way, be different from general jurisdiction cases.

5.3 Difference-in-Difference

Thus far, we have used the random assignment of judges and their propensity to use IDCs as an instrument for the impact of IDC on the likelihood of discovery disputes and several proxies of the impact of those disputes on the case. The results indicate that IDCs reduce the likelihood of discovery disputes. The issue with these results is that judges may still employ other unobserved case management techniques that make disputes less likely. That is, if the LASC was to require IDCs in all cases, IDCs might have a different impact than our prediction as non-IDC using judges, when forced to use them, would not necessarily use the unobserved case management techniques common to voluntarily adopting judges potentially confounding our results.

We then estimated the model using PI hub cases and found a similar impact of IDCs on discovery motions and, intriguingly, some impact on how the motions that do occur are handled. The benefit of the PI hub is that the judge is only assigned to hear the IDC based on availability; hence, other judge-specific confounders are unlikely to be impacting the litigant's decision to file a motion after the IDC. The issue for identification in the PI hub is that cases in which one party rejects the IDC, allowing the requesting party to file a motion without an IDC, may be systematically different from cases that do have an IDC.

In this section, we take a different approach. The PI hubs, which require judges to hear IDCs if requested, are created at the beginning of our sample. This means that some judges were using IDCs in their general jurisdiction cases before they were ever assigned to the PI hub to hear an IDC (we call them always-takers—consistent with the literature); some judges do not use IDCs in their general jurisdiction cases before being assigned to the PI hub but use them after

assignment (compliers), some judges do not use IDCs either before or after being assigned to their first PI hub case (never-takers) and, finally, a few judges use IDCs before their first assignment to the PI hub but then abandon them in their non-PI hub cases thereafter (defiers). Table 8 Panel A shows the number of judges in each of these groups. Panels B and C show the number of cases heard by each of these groups in general jurisdiction civil cases in the pre-period (before the judges have been assigned to a PI hub IDC) and post period. To check the identifying assumptions of the difference-in-differences specification, we drew the trends between groups in Figure A1 and Figure A2. 2014 as the starting year of treatment, the pre-trends seem to be parallel in general, excluding 2018. To be clear, the difference-in-difference results are not directly comparable to the intent to treat IV used for the general jurisdiction results or the PI hub results. In this case, we include judge fixed effects so the effect of "treatment" in this case is simply measuring the impact of being assigned to a PI hub IDC and utilizing IDC thereafter. It does not capture the intensity of that treatment; hence, the coefficients are not comparable to the intent to treat coefficients.

In Table 9, we use a judge's first assignment to a PI hub required IDC as our treatment and estimate the probability that the judge has a discovery motion before and after the "treatment." According to Goodman-Bacon (2018) and Callaway and Sant'Anna (2021), the relevant control group is the never-takers (judges who do not use IDCs before and after treatment). The problem with including always-taker in the control group is that the always-taker group has already been exposed to the treatment effect. These judges have already decided to use IDCs for some reason other than exposure to IDCs in the PI hub. In Table 9 Column 1, we estimate the difference-in-difference model using always-takers and compliers, and in Column 2, never-takers and compliers. The implication from the literature is that different control groups

yield contrasting effects: setting the always-taker as a control group yields the positive treatment effect, whereas setting the never-taker as a control group yields the negative treatment effect. This is exactly what we find. The coefficient is negative and significant in Column 2 with compliers being 1% less likely to have any discovery motions in their cases after they are treated.

5.4 Additional Robustness Checks

In Appendix Table 3, we also estimate the model only using cases in which the judge assigned to the case did not change during the litigation. The results are very consistent with our other specifications.

Appendix Table 4 estimates the model using judge-year fixed effects or leave-out averages. The concern is that, as shown in Figure 2, judges might change their "leniency" over the sample period. In principle, this does cause a problem for leniency measures as an IV, but we estimate the models with judge-year IV in Table 2. The results are consistent with Table 3.

Appendix Table 5 shows the positive first stage estimates across different subsamples. The average monotonicity assumption implies that the observed covariance between judges' group-specific propensity and the judge's overall propensity to hold informal discovery conferences is weakly positive. Consistent with the average monotonicity assumption, we find that the relationship between our residualized measure of judge leniency and IDCs is positive and significant in various subsamples.

6. Conclusions

The cost of discovery in litigation is broadly debated, but there is little consensus among scholars on mitigating discovery costs, either broadly or in the specific context of the cost of discovery motion practice in court. One solution, modeled by Schrag (1999), is judicial intervention to prevent costly discovery disputes. For example, a case management order by a

court could contain specific policies for judges to follow that would reduce discovery costs across cases. The concern with case management orders is that judges may vary in their willingness or ability to undertake active case management, which makes the impact of such rules difficult to disentangle from the specific judge the court assigns to a case.

This study has examined the impact of one such rule, informal discovery conferences (IDCs), on discovery disputes. As a case management technique, the promise of IDCs is that they will reduce the need to file discovery motions and, potentially, the cost of discovery. To the extent that IDCs reduce the number of discovery motions filed, they potentially reduce litigation costs in terms of attorney and judge time.

The problem with estimating the impact of IDCs on the probability and frequency of discovery motions is that the presence of an IDC is likely to be correlated with case complexity, which would also affect the number of discovery disputes. To control for this endogeneity, we estimate an instrumental variable regression with judge fixed effects as our instrument. Given that judges vary in their propensity to use IDCs, the random assignment of judges gives us a quasi-experiment on the impact of IDCs. We also use an event study methodology to examine the effect of the PI hub in LASC, which requires the use of IDCs during part of the sample period.

Our results suggest that IDCs do reduce the number of discovery motions filed in the case by 64%. One outstanding concern discussed in Kakalik et al. is that specific case management techniques are difficult to untangle empirically from judge effects. Some judges appear to be very good at active case management, while others are less diligent. To the extent that judges that use IDCs are potentially also using other case management techniques to reduce the number of discovery motions, the exclusion restriction necessary for judge fixed effect to be a valid

instrument would be violated. We examine this concern using a test proposed by Frandsen, Lefgren, and Leslie (2019) that jointly tests the monotonicity and exclusion restrictions. We find that we can reject the null that the monotonicity assumption and exclusion restrictions hold. Graphical evidence shows that the test rejection is likely due to violating the monotonicity assumption. In a series of robustness checks, we vary the sample to include only case types that do not reject the null in the FLL test. The coefficients are broadly stable across specifications suggesting the results are valid under the constant treatment effects assumption.

We also estimate the model using cases in the Personal Injury (PI) hub in which judges are assigned only to hear an IDC requested by one of the parties. Because the IDC is not at the judge's discretion and the judge will only hear the IDC and rule on any subsequent discovery motions file, the concern that other judge-specific activities correlated with IDC use, such as pushing for settlement, are confounding the results is mitigated. We also estimate a difference-in-difference model using judges who did not use IDCs before being randomly assigned to a PI hub IDC as "treatment." We find that judges who adopt IDCs after "treatment" have fewer discovery motions in their cases than "treated" judges who do not adopt IDCs. The results suggest that IDCs are reducing the probability and frequency of discovery motions and that impact is, at least in part, independent of the judge assigned to the case.

References

Aizer, A., & Doyle Jr, J. J. (2015). Juvenile incarceration, human capital, and future crime: Evidence from randomly assigned judges. *The Quarterly Journal of Economics*, 130(2), 759-803.

Callaway, Brantly, and Pedro H.C.Sant'Anna. 2021. "Difference-in-Differences with multiple time periods." *Journal of Econometrics*, 225(2): 200-230

Dobbie, W., Goldin, J., & Yang, C. S. (2018). The effects of pretrial detention on conviction, future crime, and employment: Evidence from randomly assigned judges. *American Economic Review*, 108(2), 201-40.

Garth, Bryant G., "Two Words of Civil Discovery: From Studies of Cost and Delay to the Markets in Legal Services and Legal Reform," Boston College Law Review 39, no. 3 (May 1998): 597-612

Goodman-Bacon, Andrew. (2018). "Difference-in-Differences with variation in treatment timing." Working Paper 25018 National Bureau of Economic Research.

Elliott, E. D. (1986). Managerial judging and the evolution of procedure. The University of Chicago Law Review, 53(2), 306-336.

Frandsen, Brigham. 2020. \TESTJFE: Stata module to perform a test for instrument validity in the judge fixed effects design.".

Frandsen, Brigham R., Lars J. Lefgren and Emily C. Leslie. 2019. Judging Judge Fixed Effects. Working Paper 25528 National Bureau of Economic Research.

Fitzpatrick, B. T. (2018). The Discovery Tax. Vanderbilt Law Research Paper.

Gensler, Steven S. "Judicial case management: caught in the crossfire." Duke Law Journal (2010): 669-744.

Hull, Peter. "Examiner Designs and First-Stage F Statistics: A Caution." Unpublished Working Paper (2017): 5.

Helland, Eric. "The Role of Ideology in Judicial Evaluations of Experts." *The Journal of Law and Economics* 62, no. 4 (2019): 579-611.

Imbens, G. W., & Angrist, J. D. (1994). "Identification and Estimation of Local Average Treatment Effects." *Econometrica*, 62(2), 467-475.

Johnson, Lori A. (2003) "Creating Rules of Procedure for Federal Courts: Administrative Prerogative or Legislative Policymaking?." *Justice System Journal* 24(1): 23-42.

Kakalik, James S.; Deborah R. Hensler; Daniel McCaffrey; Marian Oshiro, "Discovery Management: Further Analysis of the Civil Justice Reform Act Evaluation Data," Boston College Law Review 39, no. 3 (May 1998): 613-682

Kakalik, James S., Terence Dunworth, Laural A. Hill, Daniel F. McCaffrey, Marian Oshiro, Nicholas M. Pace, Mary E. Vaiana, "Just, Speedy, and Inexpensive? An Evaluation of Judicial Case Management Under the Civil Justice Reform Act: A Summary" RAND ICJ (2000)

Kling, Jeffrey R. "Incarceration length, employment, and earnings." American Economic Review 96, no. 3 (2006): 863-876.

Marcus, Richard. (2021) "The Litigation Superpower's Case Management Cure for Adversarial Ills." In *Civil Case Management in the Twenty-First Century: Court Structures Still Matter*, pp. 109-122. Springer, Singapore.

Peckham R (1985) "A judicial response to the cost of litigation: Case management, two-stage discovery planning and alternative dispute resolution." Rutgers Law Review 37:253–278.

Petkun, Jonathan. "Nudges for judges: The effects of the "six-month" list on federal civil justice." (2021).

Resnik, Judith.(1982) "Managerial judges." Harvard Law Review 96: 374-446.

Rosenthal, Lee H. (2006) "A few thoughts on electronic discovery after December 1, 2006." The Yale Law Journal Pocket Part 1.16: 167-191.

Schrag, J. L. (1999). Managerial judges: An economic analysis of the judicial management of legal discovery. *The RAND Journal of Economics*, 305-323.

Seward, J. V. Vigliotti and S. Cunningham (2021) "Social Workers and Suicidality in Jail: Evidence from Travis County's Mental Health Court,"

Spier, K. E. (2007). Litigation. Handbook of Law and Economics, 1, 259-342.

Stevenson, M. T. (2018). Distortion of justice: How the inability to pay bail affects case outcomes. *The Journal of Law, Economics, and Organization*, 34(4), 511-542.

Weber, Gregory S. "Potential Innovations in Civil Discovery: Lessons for California from the State and Federal Courts." McGeorge Law Review 32 (2000): 1051.

Willging, Thomas E.; Donna Stienstra; John Shapard; Dean Miletich, "An Empirical Study of Discovery and Disclosure Practice under the 1993 Federal Rule Amendments," Boston College Law Review 39, no. 3 (May 1998): 525-596.

A. Appendix

This section describes the details of our data construction. As discussed in Section 3, our data come from the Los Angeles Court system, specifically cases at the Stanley Mosk Courthouse. Figures A1 through A4 show the example docket information.[26] The information in the docket includes the filing date, case type, case status (Figure A1), motions filed by a party, departmental hearings (Figure A2), litigant information (Figure A3), and in some cases, the judge's decision on whether to grant the motion (Figure A4). In addition to the action dockets, the LA Court system has gathered filed documents (Figures A5), providing in-depth information about the court procedure. Unlike the federal PACER system, the first page of the document, if available, is free. However, the document images are incomplete. For example, all the departmental actions in Figure A4 did not appear in the document images (Figure A6). Figure A6 presents a list of filed documents where the entries under the "Document" column share the entries in the dockets.

Variables are constructed based on keyword mining. For instance, when constructing the dependent variable indicating whether there was a motion to compel, we coded it as one if the entire string "motion to compel," or a similar combination of words, appeared in the dockets. We then manually checked this information for a subset of cases. We are able to identify PI hub cases either from the docket or from the department to which they are initially assigned.

For the judge information, we prioritized the judge names appearing in the dockets. In the case of the PI hub, the judge assigned to hear the IDC is almost always listed on the docket. For general jurisdiction cases, when we could not obtain judge names from the dockets, we used a historical archive of web pages called Wayback Machine[27] to collect the quarterly list of judges and their assigned offices. Specifically, the LA Court system regularly posts an updated list of judicial officers online.[28] This allowed us to obtain the historical quarterly list of judicial officers. Since the office to which the case is assigned is always included in the docket, we are able to identify the cases without judge information in the docket by their office assignment.

---

[26] We have masked the party names in the images to preserve privacy.

[27] https://archive.org/web/

[28] https://www.lacourt.org/judicialofficers/ui/index.aspx

Figure 1: IDC use by judge

Circle size represents the number of cases the judge is assigned in the sample.
All judges with fewer than 100 cases are dropped from the analysis

Figure 2: Judge Variation over Time

The black line is the average rate of IDC use per case over all 75 judges
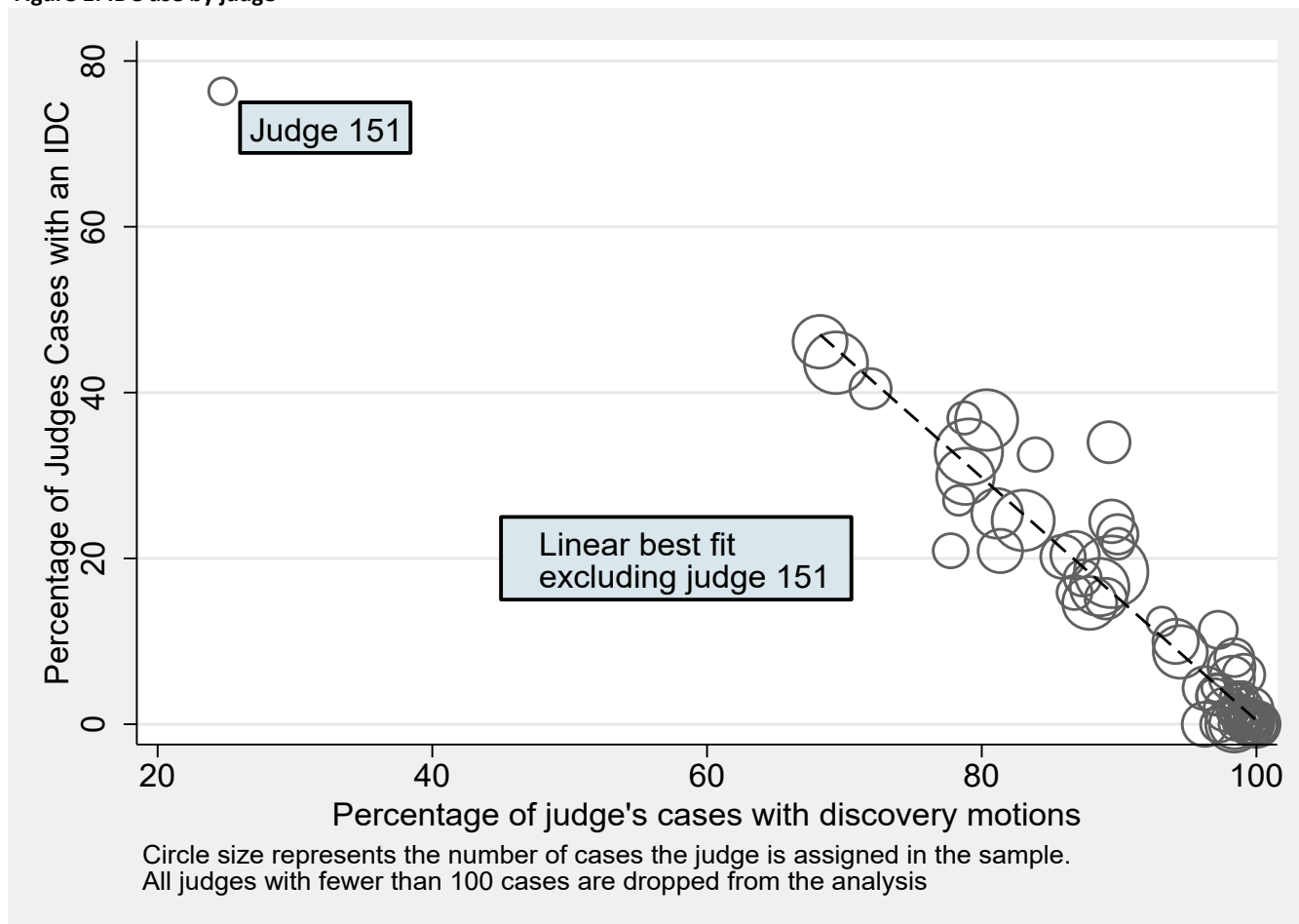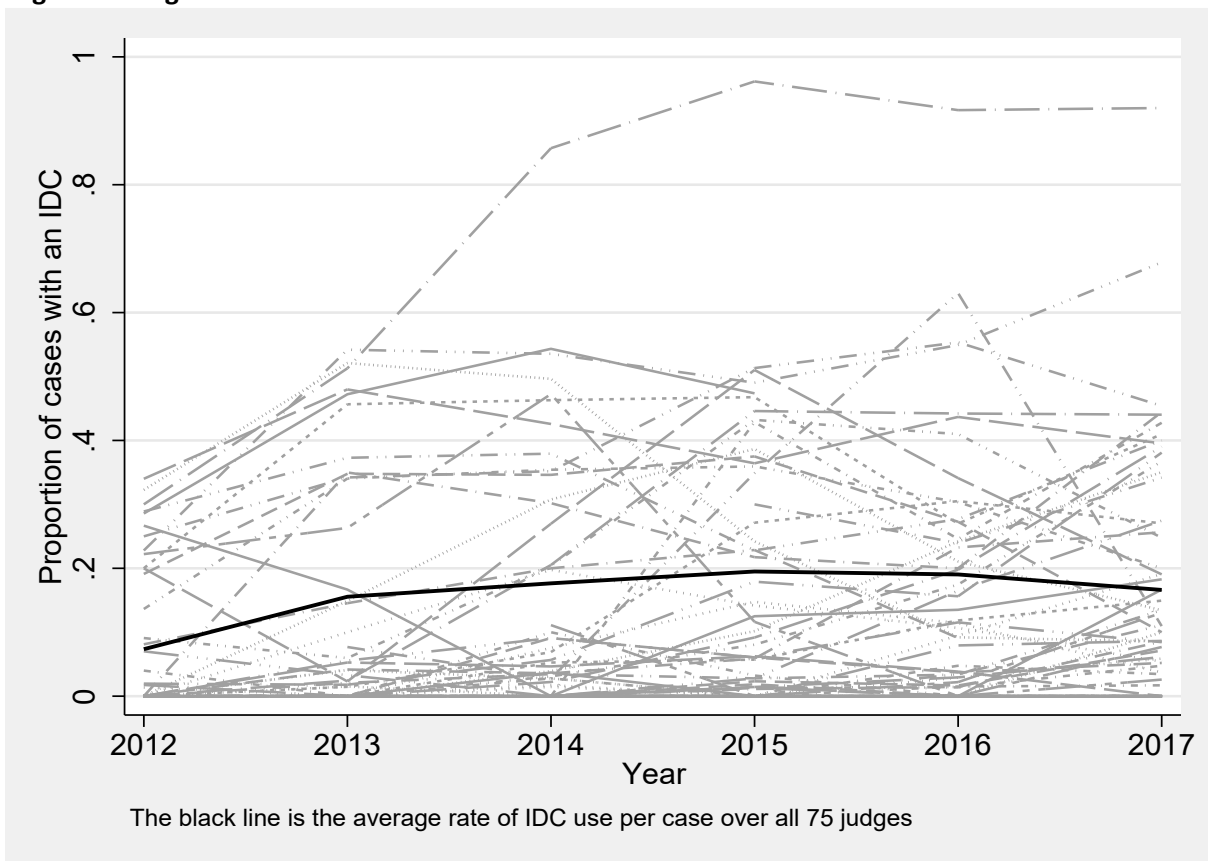
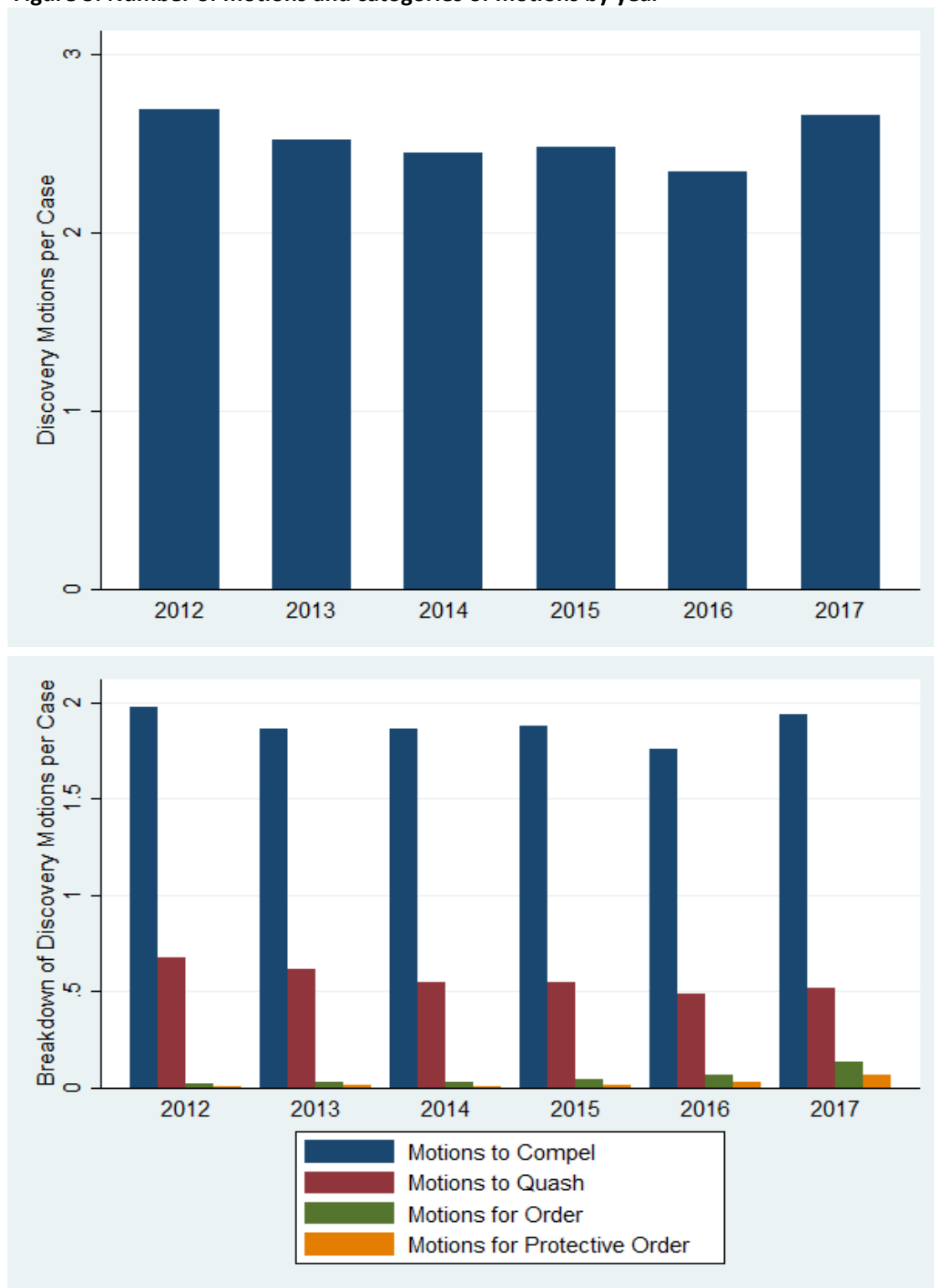**Figure 3: Number of motions and catogories of motions by year**

Figure 4: Monotonicity of Judge Instrument (Distribution of Judge Leniency Measure and First Stage) on Total Cases, Motor Vehicle Torts, and Contract.
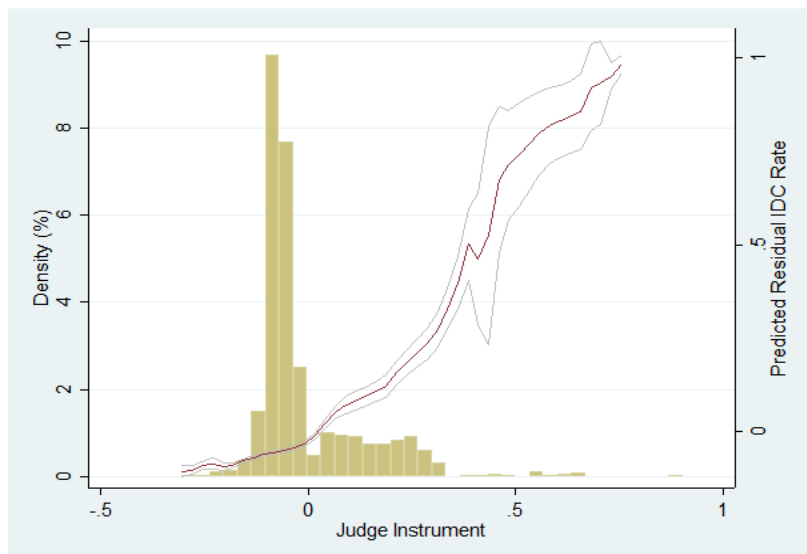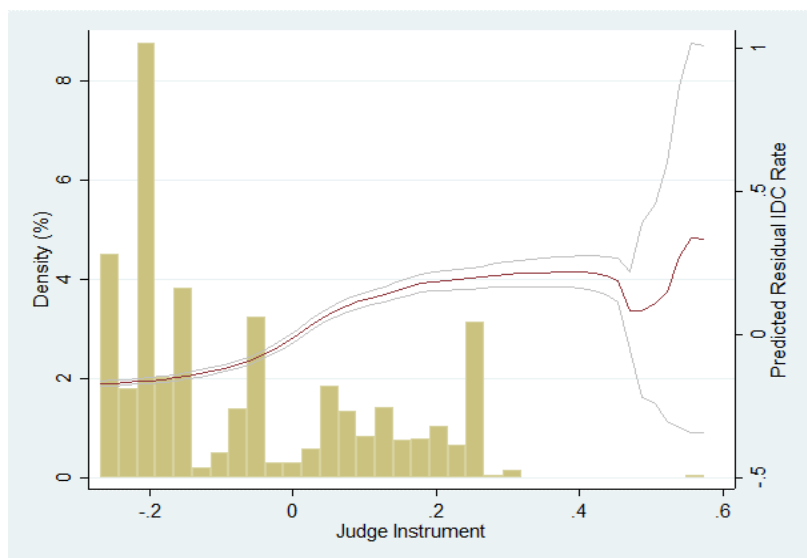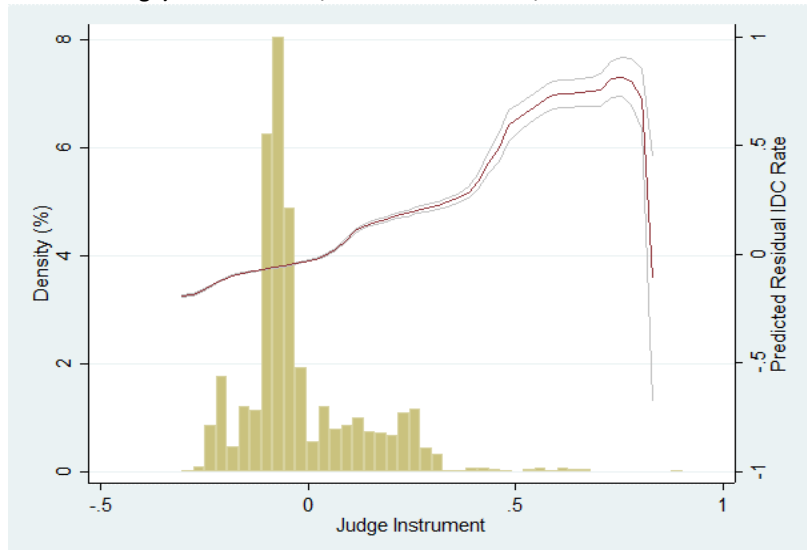

Table 1: Summary Statistics

	General Jurisdiction Cases		PI Hub Cases	
Panel A: Discrete Measures	Mean	S.D.	Mean	S.D.
Any Discovery Motions	0.95	0.22	0.81	0.39
Any Motions to Compel	0.75	0.43	0.66	0.48
Any Motions to Quash	0.23	0.42	0.15	0.36
Any Order Motions	0.06	0.23	0.03	0.17
Any Protective Order Motions	0.02	0.14	0.01	0.11
Any Hearing on Discovery Motions	0.11	0.32	0.17	0.37
Any Motions filed by platiniffs	0.45	0.50	0.26	0.44
Any Discovery Motions filed by defendants	0.55	0.50	0.52	0.50
Any Motions Overruled	0.02	0.14	0.02	0.15
Any Discovery Motions Granted	0.01	0.11	0.01	0.08
Any Discovery Motions Declared Moot	0.01	0.12	0.02	0.12
Any Objections to Discovery Motions Sustained	0.00	0.01	0.00	0.00
Panel B: Continious Measures				
Number of Discovery Motions	3.13	4.41	2.16	2.85
Number of Motions to Compel	1.75	2.18	1.31	1.59
Number of Motions to Quash	1.26	3.64	0.80	2.58
Number of Order Motions	0.08	0.40	0.04	0.27
Number of Protective Order Motions	0.04	0.33	0.02	0.18
Number of Hearing on Discovery Motions	0.19	0.69	0.26	0.72
Number of Discovery Motions filed by platiniffs	0.77	1.37	0.38	0.90
Number of Discovery Motions filed by defendants	0.91	1.39	0.73	1.09
Duration of the Case (days)	861.23	551.74	968.27	392.26
Duration of the Case (days) Right Censored at 2500	838.61	426.23	961.14	303.74
Duration of the Case (days) Right Censored at 2000	808.51	378.56	958.85	299.90
Average Page Length of Filed Discovery Motions*	34.92	34.25	29.22	26.23
Log(Average Page Length of Filed Discovery Motions)	3.17	0.91	3.03	0.89
Average Page Length of Motions to Compel	36.07	36.08	30.83	29.11
Average Page Length of Motions to Quash	27.00	32.06	25.94	28.57
Average Page Length of Motions for Order	29.38	40.16	26.85	26.86
Average Page Length of Motions for Protective Order	43.25	63.08	33.50	57.50
Number of Motions Overruled	0.02	0.15	0.02	0.16
Number of Discovery Motions Granted	0.01	0.13	0.01	0.08
Number of Discovery Motions Declared Moot	0.02	0.19	0.02	0.14
Number of Objections to Discovery Motions Sustained	0.00	0.01	0.00	0.00
Panel C: Control Variables				
Number of Parties to the Case	5.27	9.98	4.85	4.49
A Corporation is a Party to the Case	0.88	1.63	0.56	1.50
Pro se litigant is a party	0.15	0.36	0.11	0.31
A Corporate Law Firm Represents a party	0.72	1.09	1.07	1.07
Lawyer is in a multi-attorney firm	0.46	0.50	0.66	0.47
Observations		21359		7670

*Notes: Documents excluded notice, opposition, reply, order, affidavit, and declaration.

Table 2: First Stage Regression for Judge Instrument in General Jurisdiction cases

	(1)	(2)	(3)
	JudgeFE	Leave-Out	Residual
Leniency Measure		0.823***	0.962***
		(0.0173)	(0.0192)
Observations	21357	21357	21339
Adjusted R-squared	0.232	0.210	0.228
F stat	26.13	2265.01	2522.08

Notes: All regressions include covariates, and claim type and year FEs. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Column (1) shows the regression results of IDC on judge fixed effects. Column (2) displays the regression results of IDC on the leave-out measure of judge leniency. Column (3) presents the regression results of IDC on the residualized leave-out measure. Although we are unable to check the relevance of the instruments by taking the F statistics from Column (1) since there are many instruments, Columns (2) and (3) show the F statistics are larger than the rule of thumb value, ten.

Table 3: Frandsen, Lefgren, Leslie (2020) χ² Test Statistics of Joint Null of Exclusion and Monontonicity, by outcome variable (discrete outcome)

Claim Type	(1) AnyMotion	(2) Compel	(3) Quash	(4) Order	(5) Hearing	(6) AverageDoc	(6) Duration
Motor vehicle tort	54.5328	**110.4995***	61.3251	**125.3108***	**98.1287***	40.3267	**91.1488***
Premises liability	34.5083	33.5094	19.2143	17.5246	30.3738	31.8106	**72.8922**
Product Liability (other)	42.9928	**52.3564**	42.6415	17.7810	16.9307	.	**65.8248***
Intentional tort	30.4047	41.0290	36.0062	28.2088	31.9123	**74.3063***	**87.4784***
Med. Malpractice	25.6178	34.2714	24.3251	21.6444	37.7895	17.5718	56.2549
Prof. Malpractice	27.0673	35.5108	43.6821	20.0310	51.4190	**68.1434***	48.2202
Other or unknown tort	61.7559	64.7713	57.3807	42.2887	50.6098	30.5361	**75.9822***
Fraud	48.4538	**92.7752**	**84.8236***	**87.9899**	**100.2609***	55.0674	**121.0559***
Seller plaintiff	57.2196	46.7279	42.5843	31.8142	73.2592	62.9841	55.3951
Employment Discrimination	17.4741	24.8569	**68.2817**	12.4491	67.2485	43.4053	35.9366
Employment	**85.0926**	**91.3640**	**114.7299***	**86.1017**	**220.8638***	48.8444	**157.1172***
Rental/lease agrmnt	16.0713	37.6494	48.7021	32.0167	42.9097	32.1073	70.3656
Contract	**79.7351***	**110.8155***	**131.1242***	**113.3917***	**203.4021***	60.9586	**210.3121***
Title Dispute	32.2258	39.0979	53.7991	39.5615	**69.3105***	50.2988	**37.9439***
Other or unknown real property	27.3262	47.3098	76.4506	55.6330	65.5091	59.0435	**91.1897**
Total	**261.1716***	**278.9633***	**215.8304***	**309.1996***	**580.4819***	85.7479	**452.6798***

Notes: Column (1), (2), (3), (4), (5), and (6), display the χ² statistics from the FLL test for any discovery motion, any motion to compel, any hearing on motion, any motion to quash, any motion for potective order, any hearing, the average page length of discovery motions filed, and duration, respectively. The table does not report outcome variables that survived from the FLL test for every case type (any motion for protective order, any motion overturned, any motion moot, and any motion granted). All tests include year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs, lawyers from larger firms, PI Hub, and PI Hub post ICD requirement. *** p<0.01, ** p<0.05, * p<0.1. The FLL tests are conducted excluding claim types and judges with less than 100 observations during the analysis periods (2012 through 2018). We implement the test using Frandsen (2020)'s testjfe program in Stata.

Table 4: Frandsen, Lefgren, Leslie (2020) χ² Test Statistics of Joint Null of Exclusion and Monontonicity, by outcome variable (continuous outcome)

Claim Type	(1) Motion	(2) Compel	(3) Quash	(4) Order	(5) Hearing	(6) AverageDoc	(7) Duration
Motor vehicle tort	78.4453*	86.8280**	47.6492	95.9945***	82.7168**	40.3267	91.1488***
Premises liability	43.4834	49.2614	20.7288	15.7834	25.1164	31.8106	72.8922**
Product Liability (other)	43.4625	63.6192***	29.6143	16.6725	16.2815	.	65.8248***
Intentional tort	55.7599	51.2864	40.7646	28.5560	25.5035	74.3063***	87.4784**
Med. Malpractice	45.5336	67.0051**	22.1188	19.5265	34.9448	17.5718	56.2549
Prof. Malpractice	43.3027	45.7364	36.3029	19.6623	46.2247	68.1434***	48.2202
Other or unknown tort	62.3187	50.4675	48.0024	39.9412	46.5595	30.5361	75.9822*
Fraud	74.3948	90.8715***	66.1146	67.0949	85.7186**	55.0674	121.0559***
Seller plaintiff	53.4897	78.5617**	25.5205	26.2521	55.9092	62.9841	55.3951
Employment Discrimination	43.5877	47.1907	29.8377	12.3383	62.9794	43.4053	35.9366
Employment	85.4856**	100.0153***	97.0373***	77.7988	178.3299***	48.8444	157.1172***
Rental/lease agrmnt	38.1841	52.0365	31.7705	32.0192	30.1677	32.1073	70.3656
Contract	129.1686***	126.3099***	101.8355***	97.9056***	166.1688***	60.9586	210.3121***
Title Dispute	30.4867	58.5950	23.0765	34.9021	36.7891	50.2988	37.9439***
Other or unknown real property	70.1258	80.9250*	50.0386	43.0930	62.3049	59.0435	91.1897**
Total	236.9509***	299.1314***	175.3552***	249.4078***	473.8637***	85.7479	452.6798***

Notes: Column (1), (2), (3), (4), (5), and (6), display the χ² statistics from the FLL test for the number of discovery motions,   the number of motions to compel, the number of hearing on motions, the number of motions to quash, the number of motion for potective orders, the number of hearings, the average page length of discovery motions filed, and duration, respectively. The table does not report outcome variables that survived from the FLL test for every case type (any motion for protective order, any motion overturned, any motion moot, and any motion granted). All tests include year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs, lawyers from larger firms, PI Hub, and PI Hub post ICD requirement. *** p<0.01, ** p<0.05, * p<0.1. The FLL tests are conducted excluding claim types and judges with less than 100 observations during the analysis periods (2012 through 2018). We implement the test using Frandsen (2020)'s testjfe program in Stata.

Table 5. OLS and 2SLS Regression Results across Different Specifications with Discrete Outcomes

	(1)	(2)	(3)	(4)	(5)
Panel A. Any Discovery Motion	OLS	2SLS	2SLS Subset	Leave-Out	Residual
Any IDC	-0.541***	-0.640***	-0.638***	-0.632***	-0.640***
	(0.0109)	(0.0142)	(0.0170)	(0.0174)	(0.0173)
Observations	21357	21357	11558	11558	11547
Panel B. Any Motion to Compel					
Any IDC	-0.513***	-0.590***	-0.612***	-0.610***	-0.642***
	(0.0111)	(0.0176)	(0.0282)	(0.0293)	(0.0293)
Observations	21357	21357	7054	7054	7045
Panel C. Any Motion to Quash					
Any IDC	0.0168*	-0.0759***	-0.0388*	-0.0685***	-0.0204
	(0.00740)	(0.0137)	(0.0182)	(0.0191)	(0.0181)
Observations	21357	21357	9168	9168	11207
Panel D. Any Motion Order					
Any IDC	-0.0425***	-0.0887***	-0.0685***	-0.0224	-0.0512**
	(0.00418)	(0.0111)	(0.0181)	(0.0199)	(0.0197)
Observations	21357	21357	7199	7199	7190
Panel E. Any Motion Protective Orders					
Any IDC	-0.00318	-0.0114		0.000499	-0.00584
	(0.00319)	(0.00709)		(0.00751)	(0.00726)
Observations	21357	21357		21357	21339
Panel F. Any Hearing					
Any IDC	0.0254**	0.00399	-0.0131	0.0145	0.000134
	(0.00852)	(0.0157)	(0.0262)	(0.0287)	(0.0274)
Observations	21357	21357	6888	6888	6880
Panel G. Any Discovery Motion Pltf					
Any IDC	-0.183***	-0.369***	-0.328***	-0.294***	-0.282***
	(0.0106)	(0.0227)	(0.0290)	(0.0309)	(0.0297)
Observations	21357	21357	11558	11558	11547
Panel H. Any Discovery Motion Def					
Any IDC	-0.302***	-0.359***	-0.392***	-0.353***	-0.393***
	(0.0110)	(0.0228)	(0.0294)	(0.0311)	(0.0299)
Observations	21357	21357	11558	11558	11547
Panel I. Duration					
Any IDC	34.39**	-14.34	-95.30	-100.5	-133.4
	(10.53)	(23.97)	(85.10)	(86.53)	(95.57)
Observations	21359	21359	3493	3493	3491
Panel J. Duration with upper-bound 2500					
Any IDC	35.60***	-36.61	-143.3	-25.70	-70.45
	(8.197)	(28.20)	(89.27)	(56.01)	(54.92)
Observations	21359	21359	3493	3493	3491
Panel K. Duration with upper-bound 2000					
Any IDC	34.45***	-36.61	-133.4	-16.51	-63.34
	(7.790)	(28.20)	(87.88)	(53.98)	(53.20)
Observations	21359	21359	3493	3493	3491
Panel L. Log Average Page					
Any IDC	0.0989***	-0.178**	-0.172**	-0.237***	-0.198**
	(0.0230)	(0.0565)	(0.0569)	(0.0660)	(0.0633)
Observations	13624	13624	13176	13176	13162
Panel M. Any Overruled					
Any IDC	0.00467	-0.0108		0.00285	-0.00391
	(0.00372)	(0.00646)		(0.00794)	(0.00697)
Observations	21357	21357		21357	21339
Panel N. Any Granted					
Any IDC	0.00741*	0.0000329		0.0112	0.00446
	(0.00336)	(0.00499)		(0.00620)	(0.00536)
Observations	21357	21357		21357	21339
Panel O. Any Moot					
Any IDC	0.000313	0.000109		-0.000607	-0.00169
	(0.00324)	(0.00592)		(0.00703)	(0.00669)
Observations	21357	21357		21357	21339
Panel P. Any Sustained					
Any IDC	-0.000136	-0.0000543		-0.000416	-0.000447
	(0.0000861)	(0.000580)		(0.000469)	(0.000344)
Observations	21357	21357		21357	21339

Notes: All regressions include claim type and year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs and lawyers from larger law firms. IVs include Judge FE. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Column (1), (2), (3), (4), and (5) display the regression results from the OLS regression, 2SLS regression, 2SLS regression after dropping claim types which rejected the null from the FLL test, 2SLS regression with the leave-out instrument, and 2SLS regression with the residualized leave-out instrument, respectively. When any panels omit Column (3), it implies every claim type survived from the FLL test.

Table 6. OLS and 2SLS Regression Results across Different Specifications with Continuous Outcomes

	(1)	(2)	(3)	(4)	(5)
Panel A. Number of Discovery Motion	OLS	2SLS	2SLS Subset	Leave-Out	Residual
Number of IDC	-0.274	**-2.007*****	**-1.633*****	**-1.756*****	**-1.631*****
	(0.140)	**(0.193)**	**(0.307)**	**(0.341)**	**(0.326)**
Observations	21357	21357	9249	9249	9240
Panel B. Number of Motion to Compel					
Number of IDC	**-0.593*****	**-1.383*****	**-1.342*****	**-1.260*****	**-1.361*****
	(0.0693)	**(0.0987)**	**(0.166)**	**(0.200)**	**(0.187)**
Observations	21357	21357	4743	4743	4737
Panel C. Number of Motion to Quash					
Number of IDC	**0.379*****	**-0.482*****	-0.170	-0.360	-0.0898
	(0.0946)	**(0.138)**	(0.184)	(0.202)	(0.191)
Observations	21357	21357	11558	11558	11547
Panel D. Number of Motion Order					
Number of IDC	**-0.0550*****	**-0.122*****	**-0.0994*****	**-0.0536***	**-0.0964*****
	(0.00778)	**(0.0182)**	**(0.0223)**	**(0.0252)**	**(0.0246)**
Observations	21357	21357	14469	14469	14456
Panel E. Number of Motion Protective Orders					
Number of IDC	-0.00456	-0.0193		0.000910	-0.0115
	(0.00755)	(0.0172)		(0.0181)	(0.0189)
Observations	21357	21357	21357	21357	21339
Panel F. Number of Hearing					
Number of IDC	**0.122*****	0.0474	0.0405	0.105	0.0760
	(0.0251)	(0.0330)	(0.0608)	(0.0684)	(0.0642)
Observations	21357	21357	7199	7199	7190
Panel G. Number of Discovery Motion Pltf					
Number of IDC	**-0.108****	**-0.593*****	**-0.460*****	**-0.395*****	**-0.401*****
	(0.0374)	**(0.0622)**	**(0.0856)**	**(0.0955)**	**(0.0923)**
Observations	21357	21357	9249	9249	9240
Panel H. Number of Discovery Motion Def					
Number of IDC	**-0.249*****	**-0.669*****	**-0.655*****	**-0.524*****	**-0.619*****
	(0.0393)	**(0.0580)**	**(0.0872)**	**(0.101)**	**(0.0939)**
Observations	21357	21357	9249	9249	9240
Panel I. Number of Overruled					
Number of IDC	0.00467	-0.0108		0.00285	-0.00391
	(0.00372)	(0.00646)		(0.00794)	(0.00697)
Observations	21357	21357		21357	21339
Panel J. Number of Granted					
Number of IDC	**0.00968***	-0.000403		0.0131	0.00460
	(0.00407)	(0.00577)		(0.00718)	(0.00626)
Observations	21357	21357		21357	21339
Panel K. Number of Moot					
Number of IDC	0.00342	0.00721		-0.00119	0.000299
	(0.00519)	(0.00928)		(0.00998)	(0.00969)
Observations	21357	21357		21357	21339
Panel L. Number of Sustained					
Number of IDC	-0.000136	-0.0000543		-0.000416	-0.000447
	(0.0000861)	(0.000580)		(0.000469)	(0.000344)
Observations	21357	21357		21357	21339

Notes: All regressions include claim type and year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs and lawyers from larger law firms. IVs include Judge FE. Robust standard errors clustered in the case level are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Column (1), (2), (3), (4), and (5) display the regression results from the OLS regression, 2SLS regression, 2SLS regression after dropping claim types which rejected the null from the FLL test, 2SLS regression with the leave-out instrument, and 2SLS regression with the residualized leave-out instrument, respectively. When any panels omit Column (3), it implies every claim type survived from the FLL test.

Table 7. Case Study in PI Hub across Different Specifications with Discrete Outcomes

	(1) OLS	(2) 2SLS	(3) 2SLS Subset	(4) Leave-Out	(5) Residual
Panel A. Any Discovery Motion					
Any IDC	-0.724***	-0.791***	-0.791***	-0.776***	-0.785***
	(0.00965)	(0.0138)	(0.0138)	(0.0153)	(0.0155)
Observations	7665	7665	7656	7656	7648
Panel B. Any Motion to Compel					
Any IDC	-0.701***	-0.741***	-0.761***	-0.744***	-0.767***
	(0.00996)	(0.0168)	(0.0232)	(0.0242)	(0.0247)
Observations	7665	7665	3763	3763	3762
Panel C. Any Motion to Quash					
Any IDC	-0.00254	-0.0196	-0.0202	-0.0157	0.00453
	(0.00392)	(0.0105)	(0.0105)	(0.0102)	(0.00969)
Observations	7665	7665	7648	7648	7648
Panel D. Any Motion Order					
Any IDC	-0.0369***	-0.105***	-0.0901***	-0.0806***	-0.0692***
	(0.00346)	(0.0119)	(0.0159)	(0.0151)	(0.0154)
Observations	7665	7665	3961	3961	3958
Panel E. Any Motion Protective Orders					
Any IDC	-0.0107***	0.00233		-0.000562	0.00689
	(0.00254)	(0.00713)		(0.00661)	(0.00631)
Observations	7665	7665	7665	7665	7657
Panel F. Any Hearing					
Any IDC	-0.0878***	-0.180***	-0.219***	-0.292***	-0.320***
	(0.00948)	(0.0209)	(0.0289)	(0.0291)	(0.0303)
Observations	7665	7665	3961	3961	3958
Panel G. Any Discovery Motion Pltf					
Any IDC	-0.134***	-0.242***	-0.241***	-0.245***	-0.200***
	(0.00961)	(0.0237)	(0.0237)	(0.0242)	(0.0243)
Observations	7665	7665	7656	7656	7648
Panel H. Any Discovery Motion Def					
Any IDC	-0.537***	-0.580***	-0.580***	-0.561***	-0.589***
	(0.0101)	(0.0243)	(0.0243)	(0.0247)	(0.0250)
Observations	7665	7665	7656	7656	7648
Panel I. Duration					
Any IDC	0.357	-281.4***	-290.6***	-402.1***	-390.9***
	(7.293)	(22.85)	(70.10)	(99.29)	(107.8)
Observations	7670	7670	514	514	514
Panel J. Duration with upper-bound 2500					
Any IDC	0.377	-402.7***	-905.0**	-402.1***	-390.9***
	(5.865)	(25.30)	(275.2)	(99.40)	(107.9)
Observations	7670	7670	514	514	514
Panel K. Duration with upper-bound 2000					
Any IDC	0.0322	-402.7***	-959.2**	-403.8***	-391.4***
	(5.806)	(25.30)	(317.2)	(99.88)	(107.9)
Observations	7670	7670	514	514	514
Panel L. Log Average Page					
Any IDC	0.0563	-0.192*	-0.164*	-0.205*	-0.0725
	(0.0311)	(0.0762)	(0.0775)	(0.0878)	(0.0895)
Observations	3955	3955	3816	3816	3808
Panel M. Any Overruled					
Any IDC	-0.0201***	-0.0256**		-0.0362***	-0.0309***
	(0.00342)	(0.00850)		(0.00879)	(0.00888)
Observations	7665	7665	7665	7665	7657
Panel N. Any Granted					
Any IDC	-0.00401*	-0.00599		-0.0120**	-0.0120*
	(0.00197)	(0.00504)		(0.00451)	(0.00482)
Observations	7665	7665	7665	7665	7657
Panel O. Any Moot					
Any IDC	-0.0141***	-0.0296***		-0.0346***	-0.0353***
	(0.00260)	(0.00708)		(0.00684)	(0.00731)
Observations	7665	7665	7665	7665	7657

Notes: All regressions include claim type and year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs and lawyers from larger law firms. IVs include Judge FE. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Column (1), (2), (3), (4), and (5) display the regression results from the OLS regression, 2SLS regression, 2SLS regression after dropping claim types which rejected the null from the FLL test, 2SLS regression with the leave-out instrument, and 2SLS regression with the residualized leave-out instrument, respectively. When any panels omit Column (3), it implies every claim type survived from the FLL test. When any panels omit Column (3), it implies every claim type survived from the FLL test. One of the outcome variables, any sustained, was dropped from then analysis due to insuffient observations in PI Hub cases.⬚

Table 8-A. Four groups by judge

	Take IDC post periods	Don't take IDC post periods
Use IDC in pre PI Hub periods	Always-taker 30	Defier 4
Don't use IDCs in pre PI Hub periods	Complier 18	Never-taker 23

Table 8-B. Four groups by case filing during pre periods

	Take IDC post periods	Don't take IDC post periods
Use IDC in pre PI Hub periods	Always-taker 3,175	Defier 305
Don't use IDCs in pre PI Hub periods	Complier 961	Never-taker 997

Table 8-C. Four groups by case filing during post periods

	Take IDC post periods	Don't take IDC post periods
Treatment	Always-taker 12,029	Defier 275
No Treatment	Complier 6,590	Never-taker 3,225

Table 8-D. Two-way table between IDC and discovery motion

	Discovery Motion		
	No	Yes	Total
No IDC	150	27,605	27,755
Yes IDC	2,812	1,649	4,461
Total	2,962	29,254	32,216

Notes: the Pearson's correlation between IDC and discovery motion is -.747.

Table 9. Difference-in-Differences Strategy

	(1) Always taker as control	(2) Never taker as control
Complier # Post periods	**0.0850****	**-0.0118***
	(0.0300)	**(0.00549)**
Number of Parties to the Case	0.000433	**0.000511***
	(0.000306)	**(0.000240)**
A Corporation is a Party to the Case	-0.00236	-0.00209
	(0.00156)	(0.00127)
Pro se litigant is a party	**0.0199****	0.00685
	(0.00627)	(0.00562)
A Corporate Law Firm Represents a pa	0.00344	-0.00396
	(0.00445)	(0.00307)
Lawyer is in a multi-attorney firm	-0.00343	**0.0192***
	(0.00990)	**(0.00740)**
Observations	19376	10056

Table A4 shows the results from the Difference-in-Differences strategy. Columns (1) and (2) compare the treatment effect based on different control groups. According to Goodman-Bacon (2018) and Callaway and Sant'Anna (2021), it should be avoided to set the always-taker as a control group since the always-taker group is already exposed to the treatment effect. We find the implication from the literature that different control groups yield contrasting effects: setting the always-taker as a control group yields the positive treatment effect whereas setting the never-taker as a control group yields the negative treatment effect. Therefore, based on the coefficient of Column (2), we find a consistency between the judge-fixed-effects specification and the Diff-in-Diffs specification.

Appendix Table 1: Balance Table

Variable	(1) General Jurisdiction: No IDCs Used	(2) General Jurisdiction: One or More IDC used	(3) Difference	(4) PI Hub: No IDCs Used	(5) PI Hub: One or More IDC used	(6) Difference
Number of Parties to the Case	5.202	5.869	0.667***	4.868	4.786	-0.082
	(10.062)	(9.155)	(0.230)	(4.626)	(4.104)	(0.114)
A Corporation is a Party to the Case	0.871	0.937	0.065*	0.550	0.586	0.035
	(1.621)	(1.723)	(0.038)	(1.480)	(1.553)	(0.038)
Pro se litigant is a party	0.158	0.106	-0.052***	0.119	0.089	-0.030***
	(0.364)	(0.307)	(0.008)	(0.324)	(0.285)	(0.008)
A Corporate Law Firm Represents a party	0.709	0.777	0.068***	1.029	1.160	0.131***
	(1.093)	(1.080)	(0.025)	(1.066)	(1.091)	(0.027)
Lawyer is in a multi-attorney firm	0.460	0.479	0.019*	0.642	0.698	0.056***
	(0.498)	(0.500)	(0.011)	(0.479)	(0.459)	(0.012)
Motor vehicle tort	0.103	0.158	0.056***	0.493	0.449	-0.045***
	(0.304)	(0.365)	(0.007)	(0.500)	(0.497)	(0.013)
Premises liability	0.042	0.113	0.071***	0.233	0.305	0.072***
	(0.201)	(0.317)	(0.005)	(0.423)	(0.461)	(0.011)
Abestos	0.001	0.000	-0.001	0.000	0.000	-0.000
	(0.029)	(0.000)	(0.001)	(0.013)	(0.000)	(0.000)
Product Liability (other)	0.005	0.019	0.014***	0.027	0.022	-0.005
	(0.074)	(0.137)	(0.002)	(0.163)	(0.147)	(0.004)
Intentional tort	0.017	0.020	0.003	0.030	0.026	-0.003
	(0.128)	(0.139)	(0.003)	(0.170)	(0.160)	(0.004)
Med. Malpractice	0.016	0.024	0.008***	0.071	0.054	-0.018***
	(0.124)	(0.152)	(0.003)	(0.258)	(0.226)	(0.006)
Prof. Malpractice	0.021	0.015	-0.006*	0.000	0.000	-0.000
	(0.145)	(0.123)	(0.003)	(0.013)	(0.000)	(0.000)
Slander/libel	0.008	0.004	-0.004*	0.000	0.000	0.000
	(0.090)	(0.066)	(0.002)	(0.000)	(0.000)	(0.000)
Other or unknown tort	0.030	0.062	0.032***	0.142	0.143	0.001
	(0.170)	(0.241)	(0.004)	(0.349)	(0.350)	(0.009)
Fraud	0.099	0.070	-0.029***	0.001	0.001	-0.000
	(0.298)	(0.255)	(0.007)	(0.033)	(0.031)	(0.001)
Seller plaintiff	0.039	0.029	-0.010**	0.000	0.000	0.000
	(0.195)	(0.169)	(0.004)	(0.000)	(0.000)	(0.000)
Mort. Foreclosure	0.006	0.002	-0.004**	0.000	0.000	0.000
	(0.077)	(0.049)	(0.002)	(0.000)	(0.000)	(0.000)
Employment Discrimination	0.016	0.014	-0.002	0.000	0.000	-0.000
	(0.126)	(0.117)	(0.003)	(0.013)	(0.000)	(0.000)
Employment	0.249	0.205	-0.044***	0.001	0.000	-0.001
	(0.432)	(0.403)	(0.010)	(0.023)	(0.000)	(0.001)
Rental/lease agrmnt	0.030	0.021	-0.009**	0.000	0.000	0.000
	(0.171)	(0.144)	(0.004)	(0.000)	(0.000)	(0.000)
Tortious interference	0.004	0.002	-0.002	0.000	0.000	0.000
	(0.063)	(0.044)	(0.001)	(0.000)	(0.000)	(0.000)
Partnership dispute	0.004	0.003	-0.001	0.000	0.000	0.000
	(0.066)	(0.054)	(0.001)	(0.000)	(0.000)	(0.000)
Contract	0.219	0.169	-0.051***	0.001	0.000	-0.000
	(0.414)	(0.374)	(0.009)	(0.030)	(0.022)	(0.001)
Subrogation	0.001	0.000	-0.000	0.000	0.000	0.000
	(0.024)	(0.022)	(0.001)	(0.000)	(0.000)	(0.000)
Eminent domain	0.005	0.003	-0.001	0.000	0.000	0.000
	(0.068)	(0.058)	(0.002)	(0.000)	(0.000)	(0.000)
Title Dispute	0.015	0.011	-0.004	0.000	0.000	0.000
	(0.122)	(0.102)	(0.003)	(0.000)	(0.000)	(0.000)
Other or unknown real property	0.054	0.044	-0.011**	0.000	0.000	-0.000
	(0.227)	(0.204)	(0.005)	(0.013)	(0.000)	(0.000)
Administrative Agency Award	0.000	0.001	0.001*	0.000	0.000	0.000
	(0.014)	(0.031)	(0.000)	(0.000)	(0.000)	(0.000)
Antitrust	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Asset Forfeiture	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Civil Harassment	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.019)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Petition	0.002	0.001	-0.001	0.000	0.000	-0.000
	(0.039)	(0.031)	(0.001)	(0.013)	(0.000)	(0.000)
Mass Tort	0.001	0.001	0.000	0.000	0.000	0.000
	(0.037)	(0.038)	(0.001)	(0.000)	(0.000)	(0.000)
Elder Abuse	0.008	0.006	-0.002	0.000	0.000	0.000
	(0.088)	(0.076)	(0.002)	(0.000)	(0.000)	(0.000)
Election	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.016)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Racketeering	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.018)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Securities Litigation	0.000	0.000	0.000	0.000	0.000	0.000
	(0.019)	(0.022)	(0.000)	(0.000)	(0.000)	(0.000)
Toxic Tort	0.002	0.002	0.000	0.000	0.000	0.000
	(0.048)	(0.049)	(0.001)	(0.000)	(0.000)	(0.000)
Writ of Mandamus/Judicial Review	0.001	0.000	-0.001	0.000	0.000	0.000
	(0.026)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Arbitration	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.012)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Other	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	23,466	2,183	25,649	7,033	2,523	9,556

Appendix Table 2: First Stage Regression for Judge Instrument in PI Hub Cases

	(1)	(2)	(3)
	JudgeFE	Leave-Out	Residual
Leniency Measure		1.294***	1.260***
		(0.0313)	(0.0308)
Observations	7670	7670	7662
Adjusted R-squared	0.211	0.213	0.207
F stat	46.56	1710.1	1673.4

Notes: All regressions include covariates, and claim type and year FEs. Robust standard errors clustered in the case level are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Column (1) shows the regression results of IDC on judge fixed effects. Column (2) displays the regression results of IDC on the leave-out measure of judge leniency. Column (3) presents the regression results of IDC on the residualized leave-out measure. Although we are unable to check the relevance of the instruments by taking the F statistics from Column (1) since there are many instruments, Columns (2) and (3) show the F statistics are larger than the rule of thumb value, ten.

	(1)	(2)	(3)	(4)	(5)
Panel A. Any Discovery Motion	OLS	2SLS	2SLS Subset	Leave-Out	Residual
Any IDC	-0.786***	-0.886***	-0.921***	-0.898***	-0.905***
	(0.0117)	(0.0114)	(0.0104)	(0.0123)	(0.0115)
Observations	8877	8877	5647	5647	5647
Panel B. Any Motion to Compel					
Any IDC	-0.768***	-0.821***	-0.866***	-0.881***	-0.893***
	(0.0116)	(0.0138)	(0.0179)	(0.0196)	(0.0177)
Observations	8877	8877	3005	3005	3005
Panel C. Any Motion to Quash					
Any IDC	-0.0130*	-0.0895***	-0.0472***	-0.0397***	-0.0235**
	(0.00562)	(0.0106)	(0.00845)	(0.00875)	(0.00763)
Observations	8877	8877	5000	5000	5000
Panel D. Any Motion Order					
Any IDC	-0.0150***	-0.0110	-0.00119	0.0128	0.000911
	(0.00306)	(0.00826)	(0.0110)	(0.0138)	(0.0122)
Observations	8877	8877	3056	3056	3056
Panel E. Any Motion Protective Orders					
Any IDC	-0.00194	-0.00558		-0.00243	-0.00448
	(0.00182)	(0.00434)		(0.00434)	(0.00410)
Observations	8877	8877		8877	8877
Panel F. Any Hearing					
Any IDC	-0.134***	-0.233***	-0.288***	-0.272***	-0.294***
	(0.0102)	(0.0190)	(0.0262)	(0.0264)	(0.0252)
Observations	8877	8877	2980	2980	2980
Panel G. Any Discovery Motion Pltf					
Any IDC	-0.179***	-0.282***	-0.235***	-0.233***	-0.232***
	(0.0112)	(0.0221)	(0.0210)	(0.0233)	(0.0214)
Observations	8877	8877	5647	5647	5647
Panel H. Any Discovery Motion Def					
Any IDC	-0.533***	-0.564***	-0.615***	-0.588***	-0.604***
	(0.0121)	(0.0235)	(0.0231)	(0.0249)	(0.0231)
Observations	8877	8877	5647	5647	5647
Panel I. Duration					
Any IDC	27.57**	-102.6***	4.353	75.44	-30.31
	(9.724)	(22.36)	(62.44)	(93.34)	(82.89)
Observations	8879	8879	1134	1134	1134
Panel J. Duration-upper bound 2000					
Any IDC	25.86***	-205.9***	-56.81	117.3	1.234
	(7.371)	(29.99)	(116.3)	(64.37)	(61.29)
Observations	8879	8879	1134	1134	1134
Panel K. Duration-upper bound 2500					
Any IDC	25.21***	-205.9***	-56.58	116.9	1.552
	(7.149)	(29.99)	(119.4)	(62.07)	(58.87)
Observations	8879	8879	1134	1134	1134
Panel L. Log(Average Page)					
Any IDC	0.173**	0.185	0.190	-0.112	-0.0869
	(0.0533)	(0.120)	(0.121)	(0.169)	(0.153)
Observations	3120	3120	3044	3044	3044
Panel M. Any Overruled					
Any IDC	-0.0149***	-0.0300***		-0.0227**	-0.0269***
	(0.00376)	(0.00730)		(0.00804)	(0.00709)
Observations	8877	8877		8877	8877
Panel N. Any Granted					
Any IDC	-0.00167	-0.00460		0.00403	-0.000834
	(0.00318)	(0.00568)		(0.00637)	(0.00558)
Observations	8877	8877		8877	8877
Panel O. Any Moot					
Any IDC	-0.0236***	-0.0402***		-0.0376***	-0.0405***
	(0.00377)	(0.00813)		(0.00866)	(0.00815)
Observations	8877	8877		8877	8877
Panel P. Any Sustained					
Any IDC	-0.000113	-0.000431		-0.000462	-0.000202
	(0.000116)	(0.000432)		(0.000462)	(0.000208)
Observations	8877	8877		8877	8877

Notes: All regressions include claim type and year FEs, controls for the number of parties, corporate litigants, pro se plaintiffs and lawyers from larger law firms. IVs include Judge FE. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Column (1), (2), (3), (4), and (5) display the regression results from the OLS regression, 2SLS regression, 2SLS regression after dropping claim types which rejected the null from the FLL test, 2SLS regression with the leave-out instrument, and 2SLS regression with the residualized leave-out instrument, respectively. When any panels omit Column (3), it implies every claim type survived from the FLL test. When any panels omit Column (3), it implies every claim type survived from

Appendix Table 4. OLS and 2SLS Regression Results across Different Specifications with Discrete Outcomes with judge fixed effects changing over time

	(1)	(2)	(3)	(4)	(5)
	OLS	2SLS	2SLS Subset	Leave-Out	Residual
Panel A. Any Discovery Motion					
Any IDC	-0.540***	-0.639***	-0.638***	-0.656***	-0.660***
	(0.0109)	(0.0143)	(0.0170)	(0.0171)	(0.0172)
Observations	21330	21330	11545	11545	11532
Panel B. Any Motion to Compel					
Any IDC	-0.513***	-0.590***	-0.613***	-0.611***	-0.615***
	(0.0111)	(0.0176)	(0.0283)	(0.0270)	(0.0275)
Observations	21330	21330	7048	7048	7039
Panel C. Any Motion to Quash					
Any IDC	0.0168*	-0.0757***	-0.0386*	-0.0803***	-0.0576***
	(0.00741)	(0.0137)	(0.0182)	(0.0170)	(0.0168)
Observations	21330	21330	9158	9158	9147
Panel D. Any Motion Order					
Any IDC	-0.0423***	-0.0882***	-0.0682***	-0.0439*	-0.0577**
	(0.00418)	(0.0111)	(0.0181)	(0.0175)	(0.0179)
Observations	21330	21330	7193	7193	7184
Panel E. Any Motion Protective Orders					
Any IDC	-0.00320	-0.0114		-0.000412	-0.00615
	(0.00319)	(0.00711)		(0.00657)	(0.00655)
Observations	21330	21330	21330	21330	21314
Panel F. Any Hearing					
Any IDC	0.0254**	0.00412	-0.0137	0.0190	0.0203
	(0.00853)	(0.0157)	(0.0262)	(0.0287)	(0.0265)
Observations	21330	21330	6883	6883	6874
Panel G. Any Discovery Motion Pltf					
Any IDC	-0.182***	-0.368***	-0.329***	-0.313***	-0.299***
	(0.0106)	(0.0228)	(0.0290)	(0.0292)	(0.0284)
Observations	21330	21330	11545	11545	11532
Panel H. Any Discovery Motion Def					
Any IDC	-0.302***	-0.359***	-0.393***	-0.376***	-0.401***
	(0.0110)	(0.0228)	(0.0294)	(0.0293)	(0.0282)
Observations	21330	21330	11545	11545	11532
Panel I. Duration					
Any IDC	33.93**	-15.16	-94.58	-81.40	-130.1
	(10.52)	(23.95)	(85.10)	(74.64)	(70.95)
Observations	21332	21332	3491	3491	3489
Panel J. Duration-upper bound 2000					
Any IDC	33.95***	-36.70	-132.5	6.277	-52.57
	(7.762)	(27.83)	(87.85)	(54.80)	(50.22)
Observations	21332	21332	3491	3491	3489
Panel K. Duration-upper bound 2500					
Any IDC	35.14***	-36.70	-142.3	-3.986	-61.66
	(8.170)	(27.83)	(89.22)	(56.00)	(50.78)
Observations	21332	21332	3491	3491	3489
Panel L. Log(Average Page)					
Any IDC	0.160***	-0.165*	-0.158*	-0.173	-0.193*
	(0.0336)	(0.0757)	(0.0759)	(0.0890)	(0.0820)
Observations	9652	9652	9343	9343	9339
Panel M. Any Overruled					
Any IDC	0.00467	-0.0109		-0.000638	-0.00337
	(0.00372)	(0.00648)		(0.00765)	(0.00659)
Observations	21330	21330	21330	21330	21314
Panel N. Any Granted					
Any IDC	0.00741*	0.0000350		0.0138*	0.0112*
	(0.00336)	(0.00500)		(0.00632)	(0.00546)
Observations	21330	21330	21330	21330	21314
Panel O. Any Moot					
Any IDC	0.000303	0.000109		0.00128	0.00181
	(0.00324)	(0.00593)		(0.00685)	(0.00622)
Observations	21330	21330	21330	21330	21314
Panel P. Any Sustained					
Any IDC	-0.000136	-0.0000558		-0.000411	-0.000405
	(0.0000864)	(0.000581)		(0.000468)	(0.000316)
Observations	21330	21330	21330	21330	21314

pro se plaintiffs and lawyers from larger law firms. IVs include Judge FE. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Column (1), (2), (3), (4), and (5) display the regression results from the OLS regression, 2SLS regression, 2SLS regression after dropping claim types which rejected the null from the FLL test, 2SLS regression with the leave-out instrument, and 2SLS regression with the residualized leave-out instrument, respectively. When any panels omit Column (3), it implies every claim type survived from the FLL test. When any panels omit Column (3), it implies every claim type survived from the FLL test.

Appendix Table 5. Testing Average Monotonicity Assumption

	(1)	(2)
	Any	No
PI Hub	**1.262*****	**0.964*****
	(0.0307)	**(0.0192)**
Observations	7657	21339
A Corporation is a Party to the Case	**1.036*****	**1.071*****
	(0.0257)	**(0.0210)**
Observations	12366	16631
Lawyer is in a multi attorney firm	**1.084*****	**1.002*****
	(0.0225)	**(0.0237)**
Observations	14889	14111
Pro se litigant is a party	**0.866*****	**1.085*****
	(0.0424)	**(0.0175)**
Observations	4105	24894

This table reports first stage regression results of IDC on the residualized leave-out measure by subsamples based on case characteristics. For example, the first row "PI Hub" has two columns (1) and (2). Column (1) indicates the first stage coefficient from a subset of cases that were assigned to PI Hub. Column (2) indicates the coefficient from the rest of cases that were "not" assigned to PI Hub. Robust standard errors clustered in the case level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All specifications include claim type and year fixed effects.

Appendix Table 6. Probit model of Table 5

	(1)	(2)	(3)	(4)	(5)
Panel A. Any Discovery Motion	OLS	2SLS	2SLS Subset	Leave-Out	Residual
Any IDC	-0.137***	-3.556***	-3.439***	-3.387***	-3.407***
	(0.00190)	(0.0953)	(0.143)	(0.134)	(0.126)
Observations	21223	21223	11424	11424	11413
Panel B. Any Motion to Compel					
Any IDC	-0.281***	-2.427***	-2.499***	-2.310***	-2.418***
	(0.00466)	(0.110)	(0.183)	(0.134)	(0.126)
Observations	21344	21344	7041	7041	7032
Panel C. Any Motion to Quash					
Any IDC			-0.584*	-0.492***	-0.151
			(0.247)	(0.139)	(0.132)
Observations	21359	21359	9147	9147	9136
Panel D. Any Motion Order					
Any IDC	-0.0569**±	-1.072***	-1.009***	-0.514**	-0.748***
	(0.00772)	(0.158)	(0.243)	(0.196)	(0.196)
Observations	21321	21321	7163	7163	7154
Panel E. Any Motion Protective Orders					
Any IDC	-0.00389	-0.285		-0.0441	-0.166
	(0.00375)	(0.178)		(0.164)	(0.163)
Observations	21108	21108	21359	21108	21091
Panel F. Any Hearing					
Any IDC	0.0270***	0.0230	-0.105	0.0901	0.0216
	(0.00742)	(0.114)	(0.193)	(0.138)	(0.136)
Observations	21327	21327	6858	6858	6850
Panel G. Any Discovery Motion Pltf					
Any IDC	-0.194***	-1.086***	-1.009***	-0.869***	-0.835***
	(0.0117)	(0.0709)	(0.0918)	(0.0868)	(0.0849)
Observations	21354	21354	11555	11555	11544
Panel H. Any Discovery Motion Def					
Any IDC	-0.301***	-0.994***	-1.084***	-0.956***	-1.069***
	(0.0114)	(0.0730)	(0.0939)	(0.0870)	(0.0832)
Observations	21350	21350	11551	11551	11540
Panel I. Any Overturned					
Any IDC	0.00522	-0.221		0.0935	-0.0499
	(0.00330)	(0.153)		(0.148)	(0.143)
Observations	21290	21290	21359	21290	21272
Panel J. Any Granted					
Any IDC	0.00714**	-0.0169		0.341*	0.164
	(0.00262)	(0.181)		(0.153)	(0.147)
Observations	20950	20950	21359	20950	20932
Panel K. Any Moot					
Any IDC	0.000792	0.0511		0.0275	-0.00549
	(0.00311)	(0.167)		(0.163)	(0.160)
Observations	20755	20755	21359	20755	20739

Notes: Omitted category means no convergence

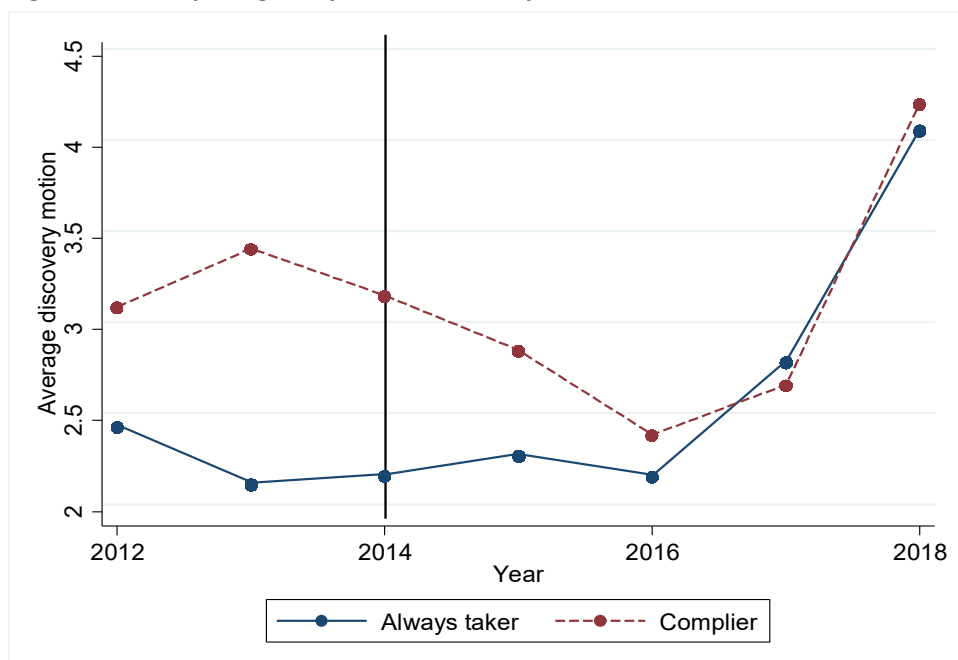**Figure A1. Comparing compliers with always-takers**
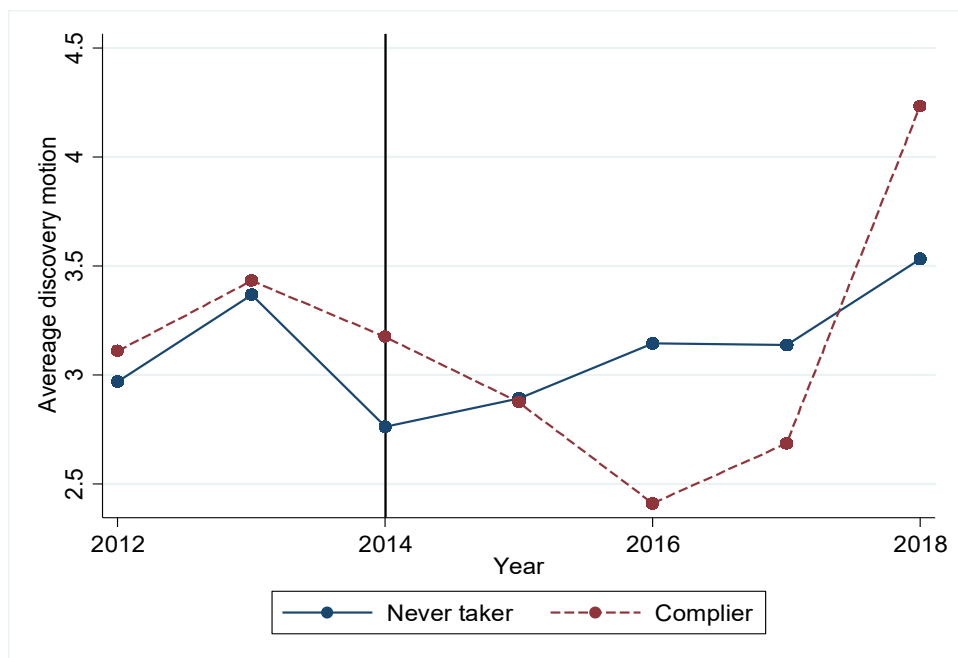

Figure A2. Comparing compliers with never-takers

Figure A3. Basic case information

Case Access

PRINT   NEW SEARCH

CASE INFORMATION

Case Information | Register Of Actions | FUTURE HEARINGS | PARTY INFORMATION | Documents Filed | Proceedings Held

Case Number: ▬▬▬▬

Filing Courthouse: Stanley Mosk Courthouse

Filing Date: 01/03/2012
Case Type: Product Liability (not asbestos or toxic/environmental) (General Jurisdiction)
Status: Court-Ordered Dismissal - Other (Other) 08/29/2014

Figure A4. Court event and action information

REGISTER OF ACTIONS

Case Information | Register Of Actions | FUTURE HEARINGS | PARTY INFORMATION | Documents Filed | Proceedings Held

Register of Actions (Listed in descending order)

Click on any of the below link(s) to see Register of Action Items on or before the date indicated:
11/13/2017   03/14/2017   11/16/2015   12/04/2014   05/29/2013   02/22/2013   11/26/2012   08/21/2012

02/24/2020 Appeal - Remittitur - Affirmed (B287912)
Filed by Clerk

03/04/2019 Notice (Notice of Designation of Trial Exhibits for Transmittal to Appellate Court)
Filed by ▬▬▬▬ (Defendant)

07/18/2018 NOTICE OF FEES DUE FOR CLERK'S TRANSCRIPT ON APPEAL

07/18/2018 Ntc to Prty re fee Clk's Transcpt
Filed by Clerk

04/27/2018 Writ issued
Filed by Creditor

04/24/2018 at 08:33 AM in Department 56
Hearing on Motion for Attorney Fees (MOTION - ATTORNEY FEES; Granted in Part) -

04/24/2018 Minute Order

04/24/2018 Order RE/: Cross-Complainant ▬▬▬▬ Motion for Attorneys' Fees

04/24/2018 Minute order entered: 2018-04-24 00:00:00
Filed by Clerk

04/24/2018 ORDER RE: CROSS-COMPLAINANT ▬▬▬▬ MOTION FOR ATTORNEYS' FEES

04/24/2018 NOTICE OF RULING ON MOTION OF CROSS-COMPLAINANT ▬▬▬▬ FOR ATTORNEY FEES

04/24/2018 Notice of Ruling

Figure A5. Party and attorney information

PARTY INFORMATION

Case Information | Register Of Actions | FUTURE HEARINGS | PARTY INFORMATION | Documents Filed | Proceedings Held

▬▬▬▬ - Defendant and Cross-Complainant

▬▬▬▬ - Defendant and Cross-Complainant

HENKE ROBERT E. - Attorney for Defendant

JENKINS MICHAEL E. - Attorney for Defendant

KIRKPATRICK GUY L. ESQ. - Attorney for Plaintiff

▬▬▬▬ - Defendant

MACKEY ROBERT T. ESQ. - Attorney for Defendant

▬▬▬▬ - Cross-Defendant/Cross-Complainant

▬▬▬▬ Defendant

▬▬▬▬ - Defendant

▬▬▬▬ - Defendant

▬▬▬▬ - Defendant

▬▬▬▬ - Plaintiff

▬▬▬▬ - Plaintiff

▬▬▬▬ - Lien Claimant

Figure A4. Judge's motion granting behaviors in dockets

08/19/2013 at 08:30 AM in Department 92
Final Status Conference

08/14/2013 at 1:30 PM in Department 92
Unknown Event Type - **Held - Motion Granted**

05/28/2013 at 00:00 AM in Department 92
Unknown Event Type - **Held - Motion Granted**

05/28/2013 at 1:30 PM in Department 92
Unknown Event Type

05/06/2013 at 08:30 AM in Department 92
Unknown Event Type

05/02/2013 at 08:31 AM in Department K
Unknown Event Type - **Held - Motion Granted**

05/02/2013 at 08:31 am in Department WEK, Gerald Rosenberg, Presiding
Motion for Leave (TO FILE A FIRST AMENDED ANSWEREX PARTE APPLICATION FOR ORDER) - **Motion Granted**

11/27/2012 at 08:30 AM in Department K
Status Conference - **Held**

11/27/2012 at 08:30 am in Department WEK, Gerald Rosenberg, Presiding
Status Conference (CASE TRANSFERRED FROM - CENTRAL) - **Completed**

09/20/2012 at 09:00 AM in Department 1
Hearing on Motion to Transfer (Motion to Transfer; Transferred to different departmnt) -

05/21/2012 at 08:30 AM in Department 34
Case Management Conference (Conference-Case Management; Trial and MSC Set) -

change this with other motions

Figure A6. Filed document image

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

DATE: 04/24/18	DEPT. 56
HONORABLE HOLLY J. FUJIE JUDGE	O. CHAVEZ DEPUTY CLERK
HONORABLE #8 JUDGE PRO TEM	ELECTRONIC RECORDING MONITOR
B. CHAVEZ, C.A. Deputy Sheriff	NONE Reporter

8:33 am BC487579

Plaintiff Counsel   NO APPEARANCE

Defendant Counsel   BRIAN D. HUBEN (X)

PLAINTIFF'S 170 RICHARD E. RICO
170.6 AS TO JUDGE HOLLY E. KEND

NATURE OF PROCEEDINGS:

CROSS-COMPLAINANT ▮▮▮▮▮▮▮ MOTION FOR
ATTORNEY FEES RELATED TO JUDGMENT ON ITS
CROSS-COMPLAINT;

The matter is held this date.

Counsel for the moving party submitted to the Court's
tentative ruling.

The tentative ruling becomes the Order of the Court,
which is signed and filed this date and
incorporated herein by reference.

The motion is Granted in Part. The Court awards
$44,028.50 in attorneys' fees.

Counsel for the moving party is to give notice.

Figure A7. Incomplete document images

#	Select	Date Filed	Document	Pages Selected	Total Pages
1	☐	5/2/2013	Legacy Document - LEGACY DOCUMENT TYPE: DECLARATION	1-60 ? Preview	60
2	☐	5/2/2013	Declaration - DECLARATION OF SEAN F. SALAMATI - (LEGACY)	1-39 ? Preview	39
3	☐	5/2/2013	Legacy Document - LEGACY DOCUMENT TYPE: STATEMENT - GENERAL	1-5 ? Preview	5
4	☐	5/2/2013	Legacy Document - LEGACY DOCUMENT TYPE: EX-PARTE APPLICATION	1-8 ? Preview	8
5	☐	4/25/2013	Legacy Document - LEGACY DOCUMENT TYPE: REPLY	1-4 ? Preview	4
6	☐	3/18/2013	Legacy Document - LEGACY DOCUMENT TYPE: DECLARATION	1-31 ? Preview	31
7	☐	3/18/2013	Legacy Document - LEGACY DOCUMENT TYPE: MOTION FOR LEAVE	1-11 ? Preview	11
8	☐	11/28/2012	Notice of Ruling	1-3 ? Preview	3
9	☐	11/8/2012	Case Management Statement	1-6 ? Preview	6
10	☐	11/8/2012	Other - - CIVIL DEPOSIT - (LEGACY)	1-1 ? Preview	1
11	☐	10/3/2012	Notice of Status Conference and Order	1-1 ? Preview	1
12	☐	10/2/2012	Legacy Document - LEGACY DOCUMENT TYPE: NOTICE	1-1 ? Preview	1
13	☐	10/2/2012	Legacy Document - LEGACY DOCUMENT TYPE: NOTICE	1-1 ? Preview	1