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Platform Procedure

Using Technology to Facilitate (Efficient) Civil Settlement

J.J. PRESCOTT AND ALEXANDER SANCHEZ

2.1 Introduction

This chapter examines the empirical relationship between party litigation costs and the substantive outcomes of legal disputes.[1] We hypothesize that reducing litigation costs will change case outcomes for at least some types of disputes by altering the dispute resolution process and by inhibiting party default. When litigation costs are high relative to the stakes of a case, the case's final outcome is more likely to be driven by the parties' costs than by the factual and legal merits of their disagreement, leading perhaps too often to default judgments or even failures to file meritorious claims. If such outcomes are less likely to be accurate—assuming that substantive law is efficient, and that parties bargain in the shadow of this law—then reducing the litigation costs that parties bear should improve the accuracy of litigation.

We test this proposition empirically in a context that is highly policy-relevant: the introduction of court-based "online dispute resolution" (ODR) tools, a step being taken by a growing number of courts. We cannot test whether the outcomes of cases become more accurate following the

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implementation of such online "platform" technology because we have no reliable measure of outcome accuracy. We can, however, use our data to study whether the introduction of platform technology affects the substantive outcomes of cases. A change in outcomes and in particular a reduction in the likelihood of a default judgment would suggest that ODR tools enhance system accuracy by dampening the propensity of parties to forgo dispute resolution altogether in favor of an inefficient status quo outcome. We find that reducing litigation costs by implementing ODR software in the small claims context reduces the likelihood of default and, presumably, other inefficient non-negotiated or status quo outcomes.

The chapter aims to better understand whether litigation costs affect how real-world courts arrive at efficient or accurate outcomes in resolving disputes. "Efficient" law is typically taken to refer to optimal substantive legal rules—essentially, rules that maximize social welfare by realigning incentives and allocating risk so that behavior and other outcomes comport with society's preferences (Posner 1972; Rubin 1977). In abstract analyses, procedural costs or complications are usually assumed away or presumed to be fixed or orthogonal to how the substantive law arrived at by courts will operate in the world. Courts have an obvious role in designing substantive rules, interpreting legislation, and applying law so as to achieve this sort of efficiency, and whether they carry out this task well is the subject of a large and mature literature (e.g., Hadfield 1992; Posner 1972; Priest 1977; Rubin 1977). Nevertheless, despite the tendency of commentators to focus on substantive law, scholars have long understood the important role that litigation costs play in whether justice systems operate efficiently.

One classic example of how these costs can affect the *real-world* efficiency of substantive legal rules can be seen in the implications of the Coase Theorem, which reminds us that the initial allocations of rights matter to whether final allocations are efficient because the difficulty of transferring rights makes them "sticky" (Coase 1960; Cole and Grossman 2002; Rubin 1977). Another means by which litigation costs can alter the development of efficient substantive legal rules involves the selection of disputes for litigation (Chang and Hubbard 2018; Lee and Klerman 2016; Priest and Klein 1984). The work of Priest, Klein, and others has thrown into sharp relief the fact that the costs of litigation alone (including risk) can dramatically affect the set of cases courts will have the opportunity to decide, and hence, the set of possible rules that might emerge (Rubin 1977). Courts necessarily have a distorted picture of the world as a result

of the selected cases they see (but see Helland, Klerman, and Lee 2018), so the prospect of efficient rules emerging naturally seems somewhat remote unless court procedures and, ultimately, their decision-making is somehow robust to this selection or adjusts in response to it.

A final way in which administrative or transactional litigation costs matter to the efficiency of how courts rule is related to the consequences of case selection, but it seems to us conceptually distinct—and it receives much less attention. When the costs of using courts to decide disputes—relative to the stakes of a case—are sufficiently high, the substantive legal rule a court *would* apply actually becomes irrelevant if one or more of the parties refuses to litigate. In these cases, the result is a de facto legal rule that enforces the status quo or initial allocation of rights (Rhee 2006). This is true even when the de jure substantive rule is extremely favorable to the party seeking relief. If, for example, the litigation costs of using a court to resolve a dispute are $100 and the stakes of the case in question are $200, a risk-neutral plaintiff must anticipate a greater than 50 percent chance of winning in order to make bringing the lawsuit financially worthwhile. If the efficient substantive rule would produce a 35 percent chance of the plaintiff winning, and a reasonable, but inefficient, alternative substantive rule would produce a 25 percent chance of the plaintiff winning, then a court "rules" inefficiently regardless of the choice it would have made because the plaintiff's decision not to proceed on account of the costs of litigation equates to a 0 percent chance of winning.

Of course, if one assumes that the "costs" of using a court are fixed and necessary, then this status quo-enforcing result is welfare-maximizing (Rhee 2006). Using courts to resolve disputes expends resources, and therefore avoiding these costs by an extreme rule may be optimal from society's perspective. Some research even suggests that decreasing barriers to accessing the legal system may have surprisingly regressive effects, for example, by potentially crowding out those litigants who would benefit most from such access (Niblett and Yoon 2017). But the use and design of courts and their processes are choices and involve trade-offs, and there is no good reason to assume that restructuring them to reduce litigation costs must necessarily produce offsetting negative consequences elsewhere in the system. For this reason, pursuing reforms that reduce the administrative costs of litigation—and, more fundamentally, reconceiving how cases are managed and how information flows between parties and the court—is integral to the efficient application of the law and to accurate substantive outcomes.

According to this argument, courts that are managed poorly and that are unnecessarily costly and time-consuming for litigants to use rule "inefficiently" in cases with sufficiently small stakes. High relative litigation costs cause more disputes to default to the status quo. Policies that minimize litigation costs not only free saved resources to be used elsewhere but also result in more cases being decided by courts according to substantive legal rules (or being negotiated to settlement under them). The selection inefficiency that arises from litigation costs is especially acute for what are often referred to as "minor disputes," such as cases involving civil infractions, minor misdemeanors, small claims, and so on. For these cases, the costs of using courts for dispute resolution can have the effect of robbing an efficient substantive rule of any actual significance. This notion echoes the phenomenon of the "vanishing trial," in which the replacement of public adjudication with private, often confidential, settlements may hinder the development of substantive law and the provision of justice (Fiss 1984; Kotkin 2007; Lothes 2005; Luban 1995; Resnik 2006). Generally speaking, for both issues, the concern is that coercive, extralegal conditions, like high litigation costs, are restricting the use of the legal system and producing inefficient or inaccurate outcomes. The takeaway is simply that one important way to pursue the efficient application of the law by courts is through the adoption of structures and procedures that reduce or eliminate *unnecessary* litigation costs that the parties would otherwise bear.

In the empirical work below, we consider the ability of courts to reduce litigation costs by introducing online platform technology, focusing on the effects that reducing these costs and increasing access to justice have on the outcomes of cases. Specifically, we evaluate the effects of a large state court's implementation of court-assisted ODR for its small claims docket to reduce the costs of litigation and facilitate quickly negotiated settlements (in the shadow of what might be efficient substantive law). ODR tools, in theory, enhance court efficiency and the parties' experiences by giving parties on-demand access to a private and secure online platform to negotiate an agreement that resolves their case.[2] Court-assisted ODR eliminates procedural inefficiencies and barriers to court access and saves litigants time and effort. We find that the likelihood of a

[2] We also present some tentative evidence that installing ODR tools may increase the average duration of cases as cases become more likely to resolve via negotiation than to end in default, although the size and sign of this effect may vary depending on where in the duration distribution the case would otherwise appear.

small claims case ending in default declines significantly in the wake of ODR implementation, presumably because defendants are empowered by the technology to negotiate their way to better outcomes—ones that are more likely to be based on the relevant merits of a case rather than on its expected litigation costs alone.[3]

The chapter proceeds as follows: In Section 2.2, we provide background information on small claims cases in the Franklin County Municipal Court in Columbus, Ohio, the court from which our data derive, and the operation and implementation of the online platform in the fall of 2016. In Section 2.3, we describe our data and empirical approach. In Section 2.4, we present our empirical findings. In Section 2.5, we discuss these findings in light of related data and analysis. We conclude that because parties will demand greater efficiency in the years ahead and because a majority of cases in the United States are minor ones like the small claims cases we study, the arrival of platform technology presents a critical opportunity. Implementing ODR tools on a broader scale will reduce the administrative, psychological, and other costs of litigation, ensuring parties benefit more fully from their substantive legal rights.

2.2 Background

The Franklin County Municipal Court (FCMC) Small Claims Division (located in Columbus, Ohio) oversees the resolution of an average of 6,000 small claims cases annually (FCMC Annual Report 2016 p. 64). The parties in these cases are identified using the standard terms "plaintiff" and "defendant," but behind these labels—whether they are entities

[3] Although we assume in the work below that ODR tools have the potential to improve accuracy primarily by reducing the costs of accessing courts for litigants, ODR may affect accuracy directly by changing how parties exchange information, prepare for litigation, and arrive at settlement. Our empirical work below captures both of these effects, although for minor cases that otherwise would have defaulted absent ODR, we suspect that the cost-reduction theory is more important. For these cases, it is most likely the costs of litigation that led to default, not concern over an inaccurate outcome conditional on choosing to litigate. In addition, we implicitly assume that litigation costs reduce accuracy by deterring negotiation and litigation in the shadow of the law, resulting in inaccurate default outcomes. But ODR tools, by reducing litigation costs, could also encourage nuisance suits—and, particularly in this context, nuisance defenses asserted for their settlement value—which would contribute to *inaccurate* outcomes. While we cannot discount this possibility, we have seen nothing in our data, including in negotiation communications, to support this idea. It is also at odds with the court's experiences.

or not—are people trying to achieve a resolution to an ongoing dispute. The types of cases filed in the Small Claims Division include, for example, a city attorney's attempt to collect unpaid income tax from a city taxpayer, a former friend's claim for repayment of a personal loan, and a businessperson's action to recover on a past due account.

FCMC's small claims docket and operations are functions of various state statutes, court rules and policies, and interpretive case law, all of which dictate which claims the court can address and how to resolve them. As in many jurisdictions, Ohio's small claims courts have limited jurisdiction, the precise scope of which is defined by statute (O.R.C. § 1925). Small claims courts are built around the idea that requiring a full panoply of costly procedures is unnecessary to achieve accurate outcomes in small-dollar civil disputes; rather, these cases can be appropriately handled more quickly and less formally than cases with larger stakes (Ohio Bar Foundation 2006 p. 2). In Ohio, small claims cases are restricted to actions for money damages up to $6,000 and not requiring responsive pleadings. They entail limited discovery and involve trials that are held, in theory, between 15 and 40 days from the date a plaintiff files (O.R.C. § 1925.04). Small claims courts are consciously designed to reduce litigation costs for both plaintiffs and defendants. By increasing the likelihood that plaintiffs file meritorious cases and defendants appear in court to defend themselves, this approach allows the law—or the parties negotiating under the law—rather than litigation costs to determine the outcomes of disputes.

Nevertheless, on average, more than 40 percent of the 6,000 or so cases on the FCMC's small claims docket in a year—roughly 2,400 cases annually—are closed with a default judgment for one party's failure to appear at trial (FCMC CourtView Case Statistics).[4] A default judgment looks like an efficient procedural device that closes a case with minimal time and effort by a decision-maker (Chang and Hubbard 2019),[5] but this inference of "efficiency" is misleading if the substantive outcomes of these default judgments are highly inaccurate. In low-stakes small claims

[4] We assembled these calculations using FCMC's CourtView case management software.
[5] Even a default judgment comes with its own procedural requirements and administrative costs: decision-makers must still review service, determine damages, and enter judgment. Clerical staff must docket the outcome, generate notices, and mail entries. Additionally, even though the case may be closed, the judgment may be vulnerable and subject to attack through the use of other procedural devices, which would require additional decision-maker and administrative resources (Ohio Courts Statistical Report 2016).

cases, this possibility seems especially likely because a party's litigation costs (including the opportunity costs of traveling to and appearing in court) may swamp the upside to the party of accurately resolving a dispute involving only a few hundred dollars. In fact, 40 percent is a higher default rate than occurs in other Ohio civil courts.[6] In Franklin County specifically, a large fraction of small claims outcomes are determined by parties apparently avoiding the costs of litigation, broadly construed, rather than by the merits of the dispute. Even if default judgments are sometimes just low-cost concessions (i.e., full admissions of liability) by defendants, as some surely are, it is just as likely that many of those defaulting have viable defenses or counterclaims. These litigants simply (and rationally) decline to raise them because the costs of appearing in court to answer a complaint are too high.

When the stakes of a lawsuit are especially small, even streamlined small claims litigation may prove prohibitively costly for one or both litigants. A judge or magistrate personally hears small claims cases that proceed to trial in a courtroom.[7] Some trials span hours, others days. After trial, the decision-maker either rules from the bench or issues a written decision.[8] The use of a court to resolve a dispute—even a small claims court—amounts to a private and public investment. In exchange for a careful weighing of facts and law and a relatively accurate outcome, the parties and publicly provided court personnel must use resources that could have served other valuable aims (Supreme Court Task Force on Funding 2015 p. 14).[9] To appear in court in person, litigants must overcome a wide range of barriers, including economic costs—forgone wages, transportation

[6] For example, the default rate for civil cases in the Franklin County Common Pleas Court General Civil Division is 26.8 percent (3,851 defaults/14,384 civil cases). Admittedly, these cases may differ systematically on important grounds other than simply the stakes of the dispute.

[7] Jury trials are not permitted in Ohio small claims cases (O.R.C. § 1925.04(a)).

[8] A decision-maker's efficiency is also limited by the decision-maker's statutory authority to grant appropriate relief. For example, in Ohio, a small claims judge is limited to awards of money damages, even if the plaintiff and defendant desire some other form of relief, such as specific performance (O.R.C. § 1925.02(A)(1)). Moreover, even if the court successfully resolves a case, the nature of the outcome may not only allow but actually lead to further litigation, consuming additional administrative time and effort.

[9] In addition to resolving cases, courts also provide processes for enforcing and collecting on a judgment if the judgment debtor does not voluntarily comply with the court's order. These processes typically require more time and third-party involvement from employers, banks, and perhaps courts in other jurisdictions.

outlays, and childcare expenses to attend their hearing during business hours—as well as psychological challenges—enduring confusion over legal technicalities and the fear of public speaking. (Bulinski and Prescott 2016; Prescott 2017). Not surprisingly, a party's litigation costs also hinge on the court's operations and the behavior of court personnel. If litigants find it especially time-consuming or difficult to communicate with clerks or the judge to resolve a case, the costs of using the court to resolve a dispute are even higher.[10]

Of course, defaulting outright or fully litigating to judgment are not the only options for resolving a dispute. Largely to reduce litigation costs (including litigation risk) even further (i.e., beyond what the streamlining of the small claims court process has achieved), parties often negotiate and settle their disputes before trial. Settlement can happen organically, but courts often also make dispute resolution tools and processes available as an alternative to traditional adjudication (Ohio Sup. Ct. Rule 16, n.d.). FCMC is one of these courts. Based on its experience with the mediation services it provides, the court believes that it is most effective at resolving disputes when parties define their own processes and resolve their own disputes without decision-maker intervention.[11] Dispute resolution tools lower litigation costs while still allowing the merits of the dispute to control the outcome.[12] Court-facilitated party negotiation or in-person mediation

[10] Likewise, litigants can make choices that delay the resolution of a case and that require more court resources, sometimes because these costs fall on third parties (like court personnel and taxpayers, which litigants in many cases will simply ignore) and sometimes in pursuit of the strategic goal of raising their opponent's litigation costs.

[11] The Dispute Resolution Department provides alternative dispute resolution services before a plaintiff files a lawsuit, at any stage of a lawsuit (including post-judgment), and across all civil case types in the municipal court (http://smallclaims.fcmcclerk.com/home/mediation). The Department receives more than 2,000 mediation requests and referrals annually (Franklin County Municipal Court 2016 p. 64). In 2016, 58 percent of the total 869 judge-referred mediations were resolved via a negotiated settlement either before trial (256) or through mediation (246), and 91 percent of mediated agreements resulted in the court's disposal of the case without judicial intervention (Memo to Municipal Court Judges 2017).

[12] Dispute resolution tools may also reduce litigation costs even when a case does not settle outright in the immediate aftermath. Negotiation, document exchange, and other communication facilitate an understanding of the evidence, position, and priorities of the other side. This exchange can reduce the time and effort that goes into later litigation, too, especially if there is some sort of partial settlement in place during the adjudication in which the parties agree to ignore certain issues or agree to certain factual predicates.

by court personnel or affiliated mediators are two avenues to lower litigation costs and resolve cases earlier, though they are far from the only ones.

Over the last few years, advances in platform technology have made it possible for courts to offer new dispute resolution services to litigants. For example, online dispute resolution (ODR) tools enhance access to justice by reducing litigation costs. Specifically, they eliminate the need for litigants to go to court in person and allow negotiation and mediation to occur remotely and outside of regular business hours. All of these benefits translate to less missed work, lower transportation and childcare costs, and a reduction in the fear and confusion that can accompany visiting courthouses and speaking publicly in a formal setting. By giving cost-sensitive litigants in low-stakes cases realistic resolution options beyond engaging in a full-blown civil trial or just defaulting to the status quo—whether streamlined small claims trials, in-person mediation services, or an ODR platform over which parties can exchange information, offer proposals, and agree on terms—parties are better able to achieve their goals in light of the facts and the law. Our aim in this chapter is to explore this idea empirically by studying whether the introduction of platform technology in a small claims court affects the litigation process and disposition outcomes by making it easier for parties to negotiate and settle cases using facts and arguments and, in so doing, avoid often-inaccurate default outcomes.

The Small Claims Division of FCMC succeeded in launching the first court-connected ODR platform in the United States for small claims cases in October 2016. The court sought to provide the public a user-friendly process to resolve civil disputes through direct negotiation and without any need for parties to go to court. The platform's dual goals were thus to save court and litigant resources and facilitate accurate outcomes by reducing the number of default judgments. The court also sought to enhance litigant control through the platform by making it easier to resolve cases without decision-maker intervention.

The court piloted the platform by making it available initially only to litigants in Columbus Income Tax Division (CITD) cases. The court focused on these cases for three reasons. First, CITD is the single highest volume plaintiff in the Small Claims Division with an average of 2,000 to 3,000 cases filed annually (roughly 33 percent of small claims suits).[13]

[13] The Columbus Income Tax Division became the first e-file plaintiff in FCMC's Small Claims Division in 2017. CITD filed a total of 38 percent (2,206) of all small claims cases (5,760) that year.

Second, in 2016, 47.5 percent of the city's tax cases resulted in a default judgment for CITD on account of the defendant's failure to appear—as compared to an average default rate of less than 40 percent for other small claims cases.[14] Finally, CITD informed court officials that some city tax defendants did not dispute the alleged amount owed in their small claims cases but instead expressed a desire to arrange payment plans with the city. Prior to the implementation of the ODR platform, these small claims defendants had only two options to seek resolution without litigation: attempt to contact and negotiate with the city directly (by phone or in person) or wait to appear in court and attempt to negotiate in the courtroom halls. While both avenues do yield agreements that resolve cases, the process is nonetheless costly: parties still have to coordinate schedules or travel to court in order to discuss settlement terms.

The Small Claims Division's online platform stresses usability and flexibility. It imposes no procedural rules on the parties, and no third-party decision-making or other outside interventions occur without party consent. The platform, which is web-based and mobile device-friendly, mimics common text messaging apps used on smartphones—complete with text bubbles and a document upload/attachment feature. The text-message style of communication is familiar to most users. For individuals who have questions or need additional information about online negotiation, alternatives to negotiation, or the small claims process generally, the platform also supplies answers to frequently asked questions and provides informative videos that explain the small claims and dispute resolution processes. The ODR platform is entirely party-driven. Individuals can negotiate anywhere, anytime, and for any length of time they choose. Individuals are not required to negotiate; all parties must decide independently to use the platform and coming to an agreement using the ODR platform is entirely optional. Negotiations may be terminated at any time as well, which allows the parties to continue with traditional legal options and processes.

The court notifies defendants in eligible cases about the availability of the online platform through an informational postcard included with each notice and summons processed by the Small Claims Division. A link to the platform is also available on the Clerk of Court's website at

[14] After a defendant defaults, the city may charge a post-judgment collection fee of no more than 30 percent of the judgment in addition to post-judgment statutory interest if the judgment is referred to a private collection agency (Columbus City Council Ordinance No. 0130-2009).

www.fcmcclerk.com. The ODR workflow is simple.[15] The platform has three user roles: a defendant, a plaintiff, and a court administrator. The defendant initiates negotiation with the plaintiff by entering personal and case information. The defendant then selects between different types of messages, including: (1) proposing a discounted lump sum payment, (2) proposing a discounted short-term payment plan, (3) proposing a long-term payment plan, and (4) indicating an interest in resolution but disputing the claims or amount owed. The defendant may also make settlement proposals in these preliminary communications (such as suggesting a total dollar amount to be paid or a monthly payment plan schedule) as well as offer explanations or informal defenses.

Once the defendant submits this information, the platform automatically e-mails or texts the defendant a unique link to that defendant's private negotiation space on the platform. The plaintiff in the pilot—the city attorney's office—has access to an online dashboard to identify new negotiations, ongoing negotiations, and completed negotiations (i.e., agreements). The plaintiff receives notice of a new communication on the dashboard containing the defendant's name and case number. The plaintiff may respond to defendant communications directly through the negotiation space. The defendant receives an e-mail and/or text message notification each time the plaintiff enters a message in the negotiation space. Parties may continue to exchange information, documents, offers, and counteroffers until either a mutually acceptable agreement is reached or a party terminates the negotiation.[16]

2.3 Data and Empirical Strategy

To examine the consequences of the Small Claims Division's adoption of its ODR platform, we collect case-level data from FCMC and from Court

[15] The platform operates independently from FCMC's case management system and without internal court-IT resources. Administrative supervision by court personnel is limited to correcting user-entered case numbers, contacting individuals whose cases are ineligible (such as criminal or traffic cases), and identifying any need for language assistance for the parties (foreign language or American Sign Language). The parties enter all critical data in the negotiation space, and all user-entered data are stored securely.

[16] Agreements and other documents requiring party signatures may be signed electronically using a touchscreen, a touchpad, or a mouse. The platform electronically fastens agreement terms and signatures to a single document that may be filed either on paper or online with the court. The negotiation space is no longer accessible once an agreement is reached or a party terminates the negotiation.

Innovations, the company that operates and maintains the court's ODR platform.[17] We are able to match these data to demographic information using census and other data resources. We begin with basic information about *all* small claims cases filed in FCMC's Small Claims Division in 2016 (first claim filed January 4, 2016) and most of the cases filed in 2017 (last claim filed November 9, 2017).[18] The data include a total of 10,804 cases. Most of these cases have standard dispositions, including "agreed judgment entry" (settlement), "dismissal" (defendant prevails, although this category includes some cases that settled out-of-court and about which the court has no information), and "judgment for the plaintiff" (plaintiff prevails, including default judgments). However, 1,598 of the cases filed during our sample period had not yet been fully resolved as of November 9, 2017,[19] and a few hundred other cases were assigned

[17] The name of the platform is Matterhorn. More information about the platform can be found at: https://getmatterhorn.com (accessed July 9, 2019).

[18] We obtained these data from FCMC in two batches. We received the first batch in May 2017 and the second in November 2017. The November 2017 batch includes only cases filed after FCMC extracted the May batch of cases. After the receipt of the second batch, we used the case numbers to scrape FCMC's public online searchable case database to determine whether any of the May batch of cases had been resolved in the period between the first and second batches. Any case that was filed and resolved (disposed) between January 4, 2016, and November 9, 2017, is categorized as a disposed case in our data. Cases filed after January 4, 2016, but having no disposition recorded by November 9, 2017, are categorized as undisposed cases in our data.

[19] Addressing the 1,598 undisposed observations is one of the chief empirical challenges in this chapter. One option for undisposed cases is simply to drop them from the analysis. Unfortunately, this approach may introduce selection bias because cases that are undisposed at the end of the sample period are more likely to be of longer duration or to have been filed later in the sample period and are thus different in other unobserved ways from disposed cases. With respect to our default judgment analysis, the natural way to include unresolved cases is to treat the lack of a disposition as its own outcome or as some outcome other than default. If cases that are likely to default take systematically longer to resolve, however, one concern is that too many cases that will *eventually* default may be miscategorized at the end of the sample period, creating a spurious decline over time in the likelihood of a default disposition. This possibility does have the potential to confound our analysis, but various robustness checks confirm the substance of our findings. Moreover, simple calculations of how long it takes for cases to default indicate that these "likely to default" cases are perhaps a bit shorter in duration than other cases on average, especially when compared to dismissals. Roughly equal numbers of cases result in dismissals and defaults in our data (these two categories make up more than 90 percent of disposed cases), yet in the pre-launch period, duration in the average dismissal case is over 105 days, whereas cases that default average between 80 and 85 days. There is generally greater variance in the duration of cases with "dismissal" outcomes as well. We also explore case duration below, and of course, we can only measure the duration of cases that close. We are nevertheless able to test the robustness of our duration findings in

nonstandard dispositions (e.g., bankruptcy, transfer, and a few other unknown dispositions) or dispositions that are apparently relevant only to platform-ineligible cases.[20] In our baseline analyses below, we study the set of cases that closed with the most common dispositions, a total of 8,955 small claims lawsuits. Table 2.1 shows the breakdown of our analysis sample by filing date, disposition, and ODR use.

Our empirical design includes only data from a single court, but we can leverage the court's implementation strategy to make plausible causal inferences. We use a simple difference-in-differences approach in our analysis. In effect, we separately calculate the outcomes for cases that are plausibly exogenously *eligible* for the ODR platform (as city tax cases) and for *ineligible* small claims cases in both the pre-adoption period and the post-adoption period. We then compare whether any difference in the relevant outcome between eligible and ineligible cases before the adoption of the platform diverges from any difference we measure between the two categories of cases after the adoption. The Small Claims Division launched its ODR platform on October 21, 2016.[21] In our descriptive tables and in our regression analyses below, we consider a case to be

a few different ways, including by survival analysis that is robust to certain time-to-disposition censoring concerns.

[20] The raw data have 33 unique case disposition values. We recode all cases as falling into six disposition types: agreed judgment entry, dismissal, bankruptcy, judgment for plaintiff, judgment for defendant, and transfers/other terminations. It is typically easy to classify these cases into these aggregated disposition types. However, 26 cases have raw disposition values that were uninformative or confusing. We manually checked the final dispositions for these cases. No litigants used the platform in resolving these rarer, nonstandard cases. We assume that these cases are sufficiently atypical that they are unlikely to have been affected in any way by the introduction of the ODR platform. Platform use is associated only with our three primary disposition types: agreed judgment entry, dismissal, and judgment for the plaintiff. This last category—judgment for the plaintiff—is primarily made up of cases in which the defendant defaults. We also have 110 cases with "judgment for the defendant" dispositions, which are disputes in which the plaintiff loses following a trial or the defendant prevails on a counterclaim. None of these cases were ODR-eligible. We exclude them from our sample in the analysis that we present, but including them as dismissals does not materially affect our results. We also exclude the 76 bankruptcy cases, 63 transfer cases, and 13 cases that were reclassified as non-small claims cases. We wind up with a total of 10,542 disposed and undisposed cases in our analysis, as reported in Table 2.1.

[21] Technically, the platform was available as of October 1, 2016, but potential users were not notified on paper of the platform's availability for at least another two weeks, and the first use of the system by an eligible defendant did not occur until October 21, 2016, so we take this as our official launch date. Our results are robust to using October 1, 2016, as the beginning of the post-period. Results relying on this alternative timing (and all other robustness checks discussed below) are available from the authors upon request.

Table 2.1 *Disposition count*

	Eligible Pre-ODR	Eligible Post-ODR	Ineligible Pre-ODR	Ineligible Post-ODR	All Groups
Total Number of Cases					
All	1,815	2,205	2,856	3,666	10,542
Disposed	1,815	1,616	2,853	2,671	8,955
Case Count by Disposition Type					
Agreed Judgment Entry	218	165	124	165	672
Dismissal	711	718	1,353	1,232	4,014
Judgment for Plaintiff					
By Default	886	733	1,331	1,247	4,197
By Trial	0	0	45	27	72
Undisposed	0	589	3	995	1,587
ODR Use by Disposition Type					
Agreed Judgment Entry	0 (0)	19 (17)	0 (0)	0 (0)	19 (17)
Dismissal	3 (2)	51 (28)	0 (0)	11 (4)	65 (34)
Judgment for Plaintiff					
By Default	1 (0)	20 (6)	4 (0)	6 (1)	31 (7)
By Trial	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Undisposed	0 (0)	44 (4)	0 (0)	4 (1)	48 (5)

Notes: Pre-ODR and post-ODR classifications are determined by a case's filing date in relation to the online dispute resolution (ODR) platform implementation date (i.e., October 21, 2016). Eligibility is determined by the plaintiff's identity (eligible if the City of Columbus Income Tax Division is the plaintiff). "ODR Use" indicates a case in which the defendant accessed the Small Claims Division's ODR platform. In parentheses, we report the number of cases that reached agreement while using the ODR platform. Dispositions and ODR agreements are distinct: reaching an agreement through the ODR platform does not necessarily indicate that a case is disposed, nor does it preclude the litigants from seeking an agreed judgment entry (or any other disposition) in person.

pre-ODR (or pre-launch, pre-adoption, or pre-implementation) if the lawsuit was filed before this date (i.e., cases filed from January 4, 2016, to October 20, 2016);[22] post-launch cases were filed on or after this date (October 21, 2016, to November 9, 2017). Thus, the post-ODR period is over 90 days longer (and has more cases) than the pre-ODR period.

Our empirical strategy implicitly uses ineligible small claims cases as a control group for treated eligible small claims cases and assumes that any changes in law, procedure, or court management that affect only city tax cases do not correlate with the timing of the adoption of the platform.[23] This identifying assumption is nontrivial. City tax small claims cases, our treatment group, are filed by a single agency (and presumably by a limited number of CITD repeat-player personnel). Any changes in how CITD litigates its small claims cases (or levies taxes in Columbus, Ohio, more generally) that happen to be correlated with FCMC's adoption of the ODR platform may produce a spurious relationship between the implementation of court-assisted ODR and various case outcomes. Yet there is no evidence that CITD's rules, personnel, litigation strategy, or resources changed in any notable way at the time of the court's adoption of the ODR tools *beyond* the behavioral adjustments rooted in the newly available technology itself. Any change in tax laws, rules, or regulations at the city level that might plausibly result from the availability of the ODR platform—and which might be considered to be additional "enforcement tools"—would not affect the small claims docket during our sample period.[24]

To ensure that any differences over our sample period in case outcomes (i.e., default) between eligible and ineligible cases are the result of FCMC's ODR platform, we also collect and control for certain litigant characteristics, including the income level of the defendant's

[22] Tables 2.1 and 2.2 (somewhat confusingly) show that 8 cases (4 eligible; 4 ineligible) are classified as "using ODR" despite the fact that these cases were filed "pre-ODR." These are straddle cases. They were filed weeks or months before FCMC implemented the ODR platform, but the defendants were able to find the platform on the court's website at a later date and initiate court-assisted online negotiation. Our findings are robust to different ways of treating these eight cases, including dropping all straddle cases, treating only the eligible CITD pre-ODR cases as post-ODR cases, and treating all of these straddle cases as post-ODR cases.

[23] To ensure that other secular trends do not account for our findings, some of our regressions include eligibility status-specific (eligible vs. ineligible) linear trends and squared linear trends as regressors. Our results are also robust to including only linear trends as controls.

[24] Admittedly, CITD could have changed how it treated eligible cases after ODR implementation *in anticipation* of changes in defendant litigation behavior, including the likelihood that some number of defendants were likely to invoke the option of negotiating with the CITD using FCMC's online negotiation tools.

neighborhood,[25] the defendant's gender,[26] and whether the defendant is an organization (e.g., business) or an individual.[27] These data also make it possible to identify heterogeneous effects, if any, by defendant gender, type, or neighborhood income. For the sake of brevity, we do not report results from these analyses because we find little evidence to suggest that the effects of reduced litigation costs resulting from the implementation of ODR tools varied significantly by defendant demographics.

We are also able to match case-level data from the court to more information than simply whether a defendant had access to FCMC's ODR platform (by case type and date) and how court records show the case resolved. From the developer of the platform, Court Innovations, we obtained information on whether the defendant "used" the ODR platform, the sort of interactions that occurred (e.g., how often the parties interacted, how many messages passed between the parties during online negotiation, at which times), and whether the parties arrived at an ODR-based "agreement." All ODR activity necessarily occurs after implementation and only for eligible cases,[28] and we do not have comparable data for non-ODR interactions. Therefore, at best, we can use this information to explore

[25] We link defendant individual and organization addresses to U.S. Census tracts, which generally contain 1,200 to 8,000 people, ideally a population of about 4,000. We then use Federal Financial Institutions Examination Council (FFIEC) data on median household income percentage (calculated by dividing the tract-level median family income by the MSA/MD-level median family income) to code neighborhood income level as follows: median family income percentage (MFIP) $>$ 0 and $<$ 50 percent as "low," MFIP $\geq$ 50 percent and $<$ 80 percent as "moderate," MFIP $\geq$ 80 percent and $<$ 120 percent as "middle," and MFIP $\geq$ 120 percent as "upper." See www.ffiec.gov/censusapp.htm (accessed July 9, 2019). This approach to coding defendant neighborhood income level is likely to be less accurate in the context of businesses and other entities because owners may live elsewhere. Name or address information is initially missing for almost 1,400 cases. For most cases with defendant name information missing, the defendant is an organization (e.g., business). To associate each defendant with a single name, we scrape party information from FCMC's public online case management portal, following the court's rules for selecting a single name (entity or individual) when cases have multiple defendants.

[26] We code defendant gender using Gender-API.com's gender-matching algorithm, which uses government data, social-network information, and machine learning to predict an individual's gender using first name and country of residence.

[27] Our data on defendant type (individual vs. entity) are relatively complete. Whenever name information is missing, we discovered that an entity (e.g., business) is almost invariably the true defendant in interest, but there are many cases with multiple defendants.

[28] There are, however, approximately 21 disposed cases in which litigants attempted to "use" the ODR platform but did so despite having an ineligible case (4 pre-launch; 17 post-launch). We explore the robustness of our results to our treatment of these observations. In the results below, we treat these cases as not involving ODR, but our conclusions are robust to treating them as observations involving ODR and also to dropping these observations altogether.

possible mechanisms underlying any effect we detect, conscious of the fact that selection or compositional changes, rather than ODR availability, may explain differences in outcomes across eligible-case subgroups (i.e., among eligible cases, litigants who opt to use ODR might differ from those who decide against using it on many unobservable dimensions).[29] Table 2.2 presents, by eligibility and timing, the number of ODR cases during our sample period and demographic summary statistics.[30]

The primary focus of our empirical analysis is whether the availability of an ODR platform has an effect on case outcomes—in particular, the likelihood that the defendant defaults. Default is a status quo-preserving outcome and therefore likely to be inaccurate and inefficient as a legal "ruling." If litigation costs are driving this inefficiency, then a reduction in the costs of litigation (in this case, access to an online negotiation platform) should make default relatively less attractive for defendants, encouraging them at the margin to negotiate in the shadow of substantive law.[31] We present evidence that reducing the costs of litigation lowers the likelihood of a default outcome. These results lead to our exploring a

[29] For example, if we were to find that ODR availability reduces the likelihood of a case ending in default, that reduction might occur across all eligible cases or only for those who choose to use the platform. Unfortunately, among the eligible cases, litigants who decide to use ODR to negotiate next steps in their lawsuit might be especially prone to resolving their cases actively or might be especially tech-savvy or excellent negotiators. Therefore, to draw an inference about the role ODR tools play in determining case outcomes, we must compare all eligible users to all ineligible users—because, by assumption, this categorization is exogenous.

[30] A total of 163 cases have defendants that use the ODR platform in some way during the sample period. Of this number, 48 cases were undisposed at the end of the sample period, leaving 115 fully resolved. Among disposed cases, 8 ODR cases had been filed *before* the platform was launched (4 were eligible and 4 were ineligible), and another 17 cases involved defendants who attempted to use the ODR system to resolve their case despite their case being ineligible (i.e., CITD was not the plaintiff).

[31] One difficulty with this theory is that whether ODR reduces litigation costs may depend in part on whether the plaintiff agrees to participate, and it is initially unclear why a plaintiff *would* participate if refusing to engage is likely to lead to a default judgment or, more generally, to systematically produce plaintiff-friendly outcomes. One potential answer is that fashioning an online agreement may be quick and easy and, ex ante, the plaintiff may not be able to predict which cases will default and which will proceed to a costly trial. In such an environment, efficient negotiation may be the best strategy for all cases. It may also be that a default judgment, although a legal "win" for the plaintiff, is still a costly outcome for plaintiffs generally because of the expense and delay that accompany enforcing a default judgment. In other words, a default may on average be both inaccurate and costly to both parties relative to other potential outcomes.

follow-up question about the case-duration effects of making ODR tools available to litigants. When a defendant defaults, the case tends to close relatively quickly; default can occur in as few as 40 days. As a consequence, reducing default may have the unintended effect of increasing average case duration, which might strike some observers as a drawback but which is also consistent with system efficiency.[32]

2.4 Empirical Results

We hypothesize that a reduction in litigation costs will lower the likelihood of a case ending in a default judgment. To test this proposition, we estimate a series of regressions in which the dichotomous outcome, default, is primarily a function of whether the platform is operational at the time of the case's filing (*post-ODR*), whether the case is (or would have been) eligible for negotiation on the ODR platform (*ODR-eligible case type*), and an interaction of these two indicator variables (*post-ODR* × *ODR-eligible case type*). We construct our measure of default using online documents available through FCMC's public case management portal that note whether a case was "submitted" to a factfinder before a judgment in favor of the plaintiff.[33] To ensure that our results are not due to a poor measure of default, we also study whether ODR availability affects whether the plaintiff—i.e., CITD—prevails outright in general, also a decent proxy for default in this particular setting.[34] Our case-level controls include indicators for the defendant's gender, type

[32] Innovations that cause cases to conclude more slowly may seem socially (and privately) undesirable, but this is not necessarily true if the longer process achieves a more accurate outcome. When litigation costs are so high that defendants choose to default quickly, cases with longer durations (so long as there is evidence that the parties are actively pursuing resolution and ending up somewhere other than the status quo) may be superior. Put another way, when the "price" of litigation drops, defendants may "buy more" by accessing the court system and the tools it offers, and this choice may improve overall social welfare even if resolution takes more time on average.

[33] Specifically, these documents indicate, at least some of the time, whether a case with a disposition of "judgment for the plaintiff" was actually submitted to a factfinder (i.e., did not default) after some sort of hearing involving both the defendant and the plaintiff.

[34] We consider the "judgment for the plaintiff" disposition to be a reasonable proxy for default given the high percentage of default judgments in this category of cases (over 80 percent). Although we do not report the effects of ODR availability on the likelihood of any "judgment for the plaintiff," the results are very similar to our results reported in our tables below that look only at the subset of cases with objective evidence of default. This is reassuring as we are not entirely confident in our principal way of identifying whether a case ended in a default judgment.

Table 2.2 *Sample descriptive statistics*

	Eligible Pre-ODR	Eligible Post-ODR	Ineligible Pre-ODR	Ineligible Post-ODR	All Groups
Number of Cases					
All cases	1,815	2,205	2,856	3,666	10,542
Used ODR	4	134	4	21	163
Number of Disposed Cases					
All cases	1,815	1,616	2,853	2,671	8,955
	(100.0%)	(73.3%)	(99.9%)	(72.9%)	(84.9%)
Used ODR	4	90	4	17	115
	(100.0%)	(67.2%)	(100.0%)	(81.0%)	(70.6%)
Mean Time (Days) to Disposition					
All cases	99.73	90.87	91.29	75.45	88.20
	(62.52)	(58.94)	(75.07)	(54.32)	(64.60)
Used ODR	138.00	109.79	94.00	72.00	104.63
	(74.98)	(66.18)	(91.06)	(41.32)	(65.18)
Defendant Income Level					
Low	281	323	434	493	1,531
Moderate	578	664	725	937	2,904
Middle	512	632	705	933	2,782
Upper	340	447	678	874	2,339
Missing	104	139	314	429	986

Defendant Gender					
Male	1,148	1,395	1,415	1,843	5,801
Female	536	629	1,045	1,300	3,510
Missing	131	181	396	523	1,231
Defendant Type					
Business	195	255	357	482	1,289
Individual	1,620	1,950	2,499	3,184	9,253

Notes: Pre-ODR and post-ODR classifications are determined by a case's filing date in relation to the online dispute resolution (ODR) platform implementation date (i.e., October 21, 2016). Eligibility is determined by the plaintiff's identity (eligible if the City of Columbus Income Tax Division is the plaintiff). "Used ODR" indicates a case in which the defendant accessed the Small Claims Division's ODR platform. There are some defendants who "used" ODR even though their cases had filing dates in the pre-ODR period (8 cases: 4 eligible, 4 ineligible) or were classified as ineligible in the post-ODR period (21 cases, of which 17 were disposed). The first group involves cases that were *filed* before ODR implementation but were nonetheless active post-ODR and in which defendants were able to use the platform before the case closed. Defendants in the second group apparently located the platform and initiated ODR inadvertently. We explain the data and coding rubric for defendant neighborhood income level, defendant gender, and defendant type in the text. The percentages of all cases and "used ODR" cases that are disposed and standard deviations are reported in parentheses in the second and third panels, respectively, from the top.

(individual or organization), and neighborhood income as well as various time controls, including eligibility status-specific time trends.

We estimate logit regressions because of the dichotomous nature of the outcome variable. We report the results of analyzing the sample of disposed cases as odds ratios in Table 2.3.[35] The baseline odds presented in the table describe the default judgment odds for an ineligible (i.e., non-CITD) case filed before ODR implementation.[36] The odds ratio estimates in the first two rows capture the factor by which the baseline default odds change for each case type (i.e., post-ODR cases and ODR-eligible cases); an odds ratio estimate below one indicates that the odds of a particular category of cases ending in a default judgment (relative to all other alternative dispositions) are relatively lower than for the baseline case type. The baseline odds across specifications confirm that defaults are very common in FCMC's Small Claims Division. A default outcome is about as likely to occur as all other dispositions combined for an ineligible case filed prior to the implementation of ODR technology.[37] Across the columns, the analysis also hints that post-ODR cases (including those that are ineligible for ODR, according to later columns) and city tax (CITD) cases may be less likely to end in default all else equal, although the estimates are not statistically significant.

[35] Odds tell us the probability that a case will end in a default judgment relative to the probability a case will end in any other disposition, taking into account observables—i.e., $\Omega(\boldsymbol{x}) = p(default|\boldsymbol{x})/(1 - p(default|\boldsymbol{x}))$. An odds *ratio* can be interpreted as the factor by which the baseline odds are expected to change with a one-unit increase in a particular variable, all other variables held constant—i.e., $\Omega(\boldsymbol{x}, x_k + 1)/\Omega(\boldsymbol{x}, x_k)$. Odds ratios are the exponentiated coefficients estimated by the logit regression (Long and Freese 2014). Since we use binary indicator variables in our analysis, an odds ratio less than one indicates that the particular case type described by the binary variable is less likely to be resolved by default than the baseline default odds. Consequently, the magnitudes of our odds ratio estimates are quite different from the predicted probabilities of default we present in Table 2.4.

[36] For example, the baseline odds in column (1) are 0.929, which tells us that for every ineligible case filed before ODR implementation that does not default, 0.929 cases of the same type end with a default judgment. Columns (2) and (3) have very similar baseline odds. Therefore, default is nearly as likely an outcome for ineligible cases prior to ODR as any other disposition, which is consistent with the court's basic summary statistics.

[37] When we run logits on different permutations of controls—including no controls—the baseline odds ratio alternates between being below one and above one but is seemingly always above 0.80 regardless of the reference category of cases, consistent with the fact that default is very common.

Table 2.3 *Default judgment: logit results*

	(1)	(2)	(3)	(4)	(5)	(6)
Post-ODR (0 = No, 1 = Yes)	0.780	0.884	0.909	0.729	0.785	0.816
	(0.168)	(0.193)	(0.201)	(0.180)	(0.196)	(0.206)
ODR-Eligible Case Type (0 = No, 1 = Yes)	0.960	0.813	0.813	0.876	0.793	0.793
	(0.129)	(0.116)	(0.116)	(0.131)	(0.126)	(0.126)
Post-ODR × Eligible Case Type		0.530**	0.573**		0.687+	0.746
		(0.094)	(0.102)		(0.135)	(0.147)
Used ODR (0 = No, 1 = Yes)			0.324**			0.328**
			(0.084)			(0.095)
Baseline Odds	0.929	0.987	0.988	1.219	1.261	1.261
	(0.119)	(0.127)	(0.128)	(0.193)	(0.201)	(0.201)
Controls						
Filed Year and Month Dummies	✓	✓	✓	✓	✓	✓
Eligibility-Status Linear and Squared Time Trends	✓	✓	✓	✓	✓	✓
Gender				✓	✓	✓
Neighborhood Income Level				✓	✓	✓
Defendant Type (Business/Individual)				✓	✓	✓
No. of Observations	8,941	8,941	8,941	7,233	7,233	7,233

Notes: The table reports results from logit regressions in which the dichotomous outcome variable is equal to one if the disposition of the case was "judgment for the plaintiff" by default (according to the court's public online case management system) and zero otherwise (all other dispositions). Estimates are shown as odds ratios (i.e., exponentiated coefficients of the logistic regression) for all but the interaction term, for which the table presents a ratio of odds ratios. Heteroskedasticity-robust standard errors are reported in parentheses. This analysis only includes closed cases (with dispositions). +, *, ** represent significance at the 10%, 5%, and 1% level, respectively.

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The results of our difference-in-differences specifications are displayed in columns (2) and (5) of Table 2.3. The estimates of interest are the odds ratio transformations of the coefficients on the *post-ODR* × *ODR-eligible case type* interactions.[38] In column (2), the estimate on *post* × *eligible*—0.530—indicates that the default odds are nearly halved for eligible cases after the implementation of ODR and after we take into account potentially unrelated trends over time by accounting for post-ODR changes in ineligible case outcomes.[39] This estimate is highly statistically significant and tells us that our difference-in-differences framework is helpful in understanding the effect of introducing ODR in small claims courts. In column (5), we include our additional defendant demographic controls. These admittedly reduce the statistical significance of the transformed interaction coefficient, but this shift may be the result of lost observations from missing values (approximately 20 percent of the sample is omitted by including all three categories of controls). In fact, when we repeat the specification in column (2) on the smaller sample used in column (5), the estimate on the interaction increases from 0.530 in column (2) to 0.653 (versus 0.687 in column (5)) and is less precisely estimated. Importantly, linear probability model (OLS) versions of these regressions produce substantively similar results.

In columns (3) and (6) of Table 2.3, we present the results from adding an indicator for whether a defendant in the case actually accessed the online negotiation platform.[40] Individuals with ODR-eligible cases must *choose* whether to use the court's ODR tools—and so use is very unlikely

[38] Technically, the transformed coefficient on the interaction term is a ratio of odds ratios. Ai and Norton (2003) and others have highlighted the difficulties of properly interpreting interaction coefficients in nonlinear models such as logistic regression. Marginal effects (i.e., changes in probabilities) are nonlinear functions of both estimated coefficients and independent variable values. However, presenting estimates as multiplicative effects (e.g., odds ratios) avoids the problem of interpreting the sign and statistical significance of the interaction coefficient (Buis 2010), and in any event interpreting the coefficient on an interaction of two indicator variables in a differences-in-differences setting such as this one may be relatively straightforward (Puhani 2012).

[39] As Table 2.3 indicates, the analysis in column (2) controls for month and year effects and eligibility status-specific time trends and trends squared. (These results are robust to omitting the trends-squared controls.) If we estimate the same equation without including any time controls, the estimate that results is still well below one (0.869) but only statistically significant at the 10 percent level.

[40] ODR use in this setting, by and large (i.e., ignoring the handful of pre-implementation and ineligible cases in which parties attempted to access the negotiation platform), can only occur after a court implements an online platform and only with respect to eligible (CITD) cases. Consequently, the use indicator is implicitly a triple interaction, which

to be random. Therefore, any correlation between ODR use and default judgment ought to be interpreted descriptively. From the analysis we learn that cases negotiated via the platform have even lower default odds than eligible cases post-implementation. This association is not surprising. It may be explained by selection: defendants who are unlikely to default under any circumstances may also be more likely to use the negotiation platform when resolving their dispute. Still, it is also consistent with defendants' use of the platform to engage with plaintiffs rather than defaulting by choosing to ignore the complaint.

It is worth noting that the inclusion of the ODR-use indicator reduces the magnitude and statistical significance of the primary difference-in-differences interaction estimate somewhat, but it does not appear to account entirely for the association ODR access has on its own with lower default rates. This pattern is consistent with a few different stories: 1) ODR use may indirectly reduce litigation costs for nonusers by reducing court crowding and mitigating (in this context) the plaintiff's overall litigation burden, and 2) ODR eligibility—including the receipt by mail of the notice announcing the negotiation platform's availability—may independently reduce the likelihood of default, perhaps by making courts appear more open and inviting or by encouraging other forms of negotiation. Regardless, the possibility that the mere availability of ODR tools may reduce the likelihood of default even for those who do not use the platform is a puzzling one and may counsel caution with a causal interpretation of our *post* × *eligible* estimates if one assumes that eligibility can only reduce default via ODR use.

In Table 2.4, we report the predicted probabilities of default by treatment group for each column in Table 2.3.[41] Conducting a comparison of predicted probabilities averaged across individuals by group allows us to calculate the average marginal effects of implementing FCMC's ODR tools on the likelihood of default—notwithstanding the difficulties associated with interpreting interaction coefficients in nonlinear models (Ai and Norton 2003). We accomplish this by computing a difference-in-differences estimate from group-level averages of individual-level

leaves our *post* × *eligible* estimate to capture the effect of ODR implementation for eligible cases in which the defendant did not access the negotiation platform.

[41] Rather than inferring changes in the probability of default directly from the coefficients of the logistic regression, we calculate the predicted probability of default for each observation in our sample using the logistic results, report the average for each case type (i.e., ineligible pre-ODR, ineligible post-ODR, eligible pre-ODR, and eligible post-ODR), and then test for differences between these averages.

Table 2.4 *Predicted probability of default judgment*

	Predicted Probability		Pre-ODR vs. Post-ODR			
	Pre-ODR	Post-ODR	Difference over Time	95% Confidence Interval		Diff-in-Diffs
Column (1)						
Ineligible	0.503	0.441	–0.061	–0.165	0.042	-
Eligible	0.493	0.431	–0.061	–0.164	0.042	-
Column (2)						
Ineligible	0.530	0.501	–0.030	–0.133	0.074	–0.144**
Eligible	0.480	0.307	–0.173	–0.280	–0.067	(0.036)
Column (3)						
Ineligible	0.524	0.500	–0.023	–0.128	0.082	–0.127**
Eligible	0.473	0.323	–0.150	–0.262	–0.039	(0.038)
Column (4)						
Ineligible	0.539	0.462	–0.078	–0.195	0.040	-
Eligible	0.507	0.429	–0.077	–0.194	0.039	-
Column (5)						
Ineligible	0.557	0.498	–0.059	–0.177	0.059	–0.088*
Eligible	0.501	0.354	–0.146	–0.276	–0.017	(0.044)
Column (6)						
Ineligible	0.549	0.499	–0.050	–0.170	0.071	–0.069
Eligible	0.492	0.374	–0.119	–0.254	0.017	(0.045)

Notes: The table shows average predicted probabilities of default, conditioned on eligibility status, calculated using logistic regression results. Each row corresponds to the specification denoted by the respective column in Table 2.3. The first two columns depict the average adjusted predicted probabilities of default for cases filed pre-ODR and post-ODR, respectively. The next three columns depict the difference in the predicted probabilities across the two periods as well as the 95% confidence interval (lower bound and upper bound) for this difference, respectively. The final column shows the difference in the predicted probabilities of default between eligible and ineligible cases across the two periods. We use pairwise comparisons to test if the difference between the two differences is significant; we present delta-method standard errors in parentheses below the relevant difference-in-differences estimates. $^{+}$, *, ** represent significance at the 10%, 5%, and 1% level, respectively.

predicted probabilities.[42] Not surprisingly, given the content of Table 2.3, the marginal effects on the likelihood of default from reducing litigation costs by allowing online negotiation are large and statistically significant. With respect to column (2), ODR availability reduces the likelihood of default by an estimated 14.4 percentage points. When we control for defendant demographics in column (5), the magnitude of the marginal effect drops, but it is still economically important: an 8.8 percentage-point reduction in the likelihood of default.

Tables 2.3 and 2.4 analyze only disposed cases. This is an important limitation. Reducing litigation costs by implementing ODR might have the effect of simply drawing out cases that would eventually default, perhaps past the end of the sample period, or speeding up cases that would have eventually settled or been resolved in court, perhaps pulling them into the sample of disposed cases. In either case, the reduction in the likelihood of default could be at least a partial artifact of a change in the composition of the post-ODR comparison groups. At first blush, this seems unlikely. The percentages of undisposed cases for post-ODR-eligible cases and ineligible cases are almost identical: approximately 26.7 percent and 27.1 percent, respectively. Comparing disposition rates in pre- and post-ODR periods of equal length for both eligible and ineligible cases, eligible cases became relatively more likely to resolve within the sample period, but not by much.[43] There could be more complicated compositional shifts at play, but the most likely story that might confound our results is that ODR availability pulled forward only cases that were

[42] Ai and Norton (2003) contend that an interaction effect in nonlinear models is best captured by the cross-difference of the expected value of the outcome variable (or the difference-in-differences in terms of predicted probabilities). Table 2.4 reports the average adjusted predicted probabilities of default by eligibility and pre/post-ODR status as well as the difference between the pre- and post-ODR probabilities for eligible and ineligible cases. The difference between these two differences can be interpreted as the average marginal effect of the interaction across all observations.

[43] In the 290-day time period between January 4, 2016, and October 20, 2016 (i.e., the entire period before ODR implementation in our sample), there were 4,617 cases filed. Of these, 29.7 percent (847 of 2,856) of ineligible cases and 37.7 percent (685 of 1,815) of eligible cases were undisposed as of October 20, 2016. In the 290-day time period between October 21, 2016, and August 7, 2017 (i.e., a substantial portion of the period after ODR implementation in our sample), there were 4,386 cases filed. Of these, 33.8 percent (912 of 2,700) of ineligible cases and 39.6 percent (668 of 1,686) of eligible cases were undisposed as of August 7, 2017. In other words, for the same amount of time, the number of undisposed cases is larger after ODR (for a 290-day period), but the proportion of undisposed eligible cases deviates by less than two percentage points between the two time periods.

unlikely to default (perhaps by facilitating quick and easy negotiation), reducing the fraction of post-ODR cases that end in default among disposed cases.

To examine this particular concern and other selection possibilities, in unreported work, we include undisposed cases in two separate analyses. In both, we rerun the analysis in Table 2.3 with key differences: in the first, we redefine all undisposed cases as having a non-default disposition; in the second, we assume the opposite, redefining all undisposed cases as ending in a default judgment. Our findings are surprisingly robust to both of these strong assumptions. Treating all undisposed cases as defaults actually strengthens our findings, reducing the interaction estimate in column (2) to 0.452 from 0.530 and in column (5) to 0.579 from 0.687, both still highly statistically significant. Treating all undisposed cases as ending in something other than default pushes the estimates in the other direction, increasing them to 0.633 and 0.814, respectively, with the former statistically significant, but the latter no longer statistically significant at conventional levels.[44] On the whole, we find the consistency in these patterns encouraging.

The primary message of Tables 2.3 and 2.4 is that FCMC's Small Claims Division's implementation of ODR seems to have produced a sizeable reduction in the likelihood that a small claims case ends in default. This evidence aligns with the proposition that platform technology reduces the costs of using the courts, leading to more accurate case outcomes. We find that when defendants actually use ODR, cases are even less likely to default, relative to other eligible cases, although this correlation could be the result of selection—i.e., those who choose to use ODR tools may be more likely to be tech-savvy, better educated on

[44] We also experimented with a third test: including all undisposed eligible cases as defaults and all undisposed ineligible cases as not ending in a default judgment. We consider this to be a very strong test since it assumes the worst possible arrangement of undisposed cases. With the sets of controls we include in Table 2.3, we continue to find results consistent with Table 2.3. In fact, only by removing the time trends do we find a reversal of our key result (i.e., the exponentiated estimate on *post* × *eligible* becomes greater than one). This makes intuitive sense. Of the total 1,597 undisposed cases in our sample, only three were filed pre-ODR. The undisposed cases filed post-ODR rise in number steadily over time (e.g., 9 undisposed cases were filed in January 2017, 39 in March 2017, 121 in May 2017, 291 in September 2017, 430 in October 2017). Because the undisposed cases are not distributed more equally across time (e.g., pre-ODR and post-ODR), the default odds for eligible cases post-ODR absorb the effect that ought to be attributed to time. This effect is amplified when all eligible undisposed cases are assumed to default and all ineligible undisposed cases are assumed to end in something other than default.

average, and more likely to answer a small claims complaint. On the whole, our results are quite robust to how we treat undisposed cases, the timing of ODR implementation, the inclusion or exclusion of various controls, and even our modeling choices—for instance, if we replace our logit with a linear probability model, we find very similar numbers.[45] In particular, we estimate coefficients on the interaction indicator that are very similar to the marginal effects we calculate in Table 2.4.

One potentially interesting extension of this analysis involves investigating case duration as a distinct outcome. If reducing litigation costs has the effect of altering the distribution of case dispositions—i.e., it reduces the likelihood of default judgments—one unexpected consequence of implementing ODR might be *longer* case durations because defaults can occur quickly relative to longer negotiation and litigation paths. But there is no clear prediction for how a reduction in litigation costs will affect case duration. Lower litigation costs (e.g., from eliminating the need to schedule appointments with a city attorney and from adding communication opportunities outside of business hours) may result in shorter case durations for cases that would never have ended in a default judgment. At the same time, lower access costs may also cause defendants to find responding actively to a complaint more attractive post-ODR implementation, increasing average duration *by* reducing default. In effect, longer duration would capture a shift in which the defendant faces a lower per-unit cost and so "buys more." It is thus an empirical question whether the reduction in litigation costs through procedural tools like an online negotiation platform affects duration, but it is an important one from the perspective of courts, litigants, and policymakers.

[45] To further investigate the possibility that implementing court-assisted ODR changes case outcomes, we also examine whether the availability of online negotiation affects the likelihood of "dismissal" and "agreed judgment entry" dispositions. We hypothesize that, because the ODR platform allows defendants to present evidence directly to the plaintiff and attempt to convince the party to dismiss the case, dismissal rates might increase. Without the platform, parties instead often negotiate in the courthouse prior to trial at a point when the plaintiff is more invested—given the time already expended and travel already incurred—and when the defendant may not have the time or evidence at hand to persuade the plaintiff to dismiss. Under these circumstances, an agreed judgment entry seems more likely. Our data are consistent with this story. We find that ODR availability increases the likelihood of a case ending in dismissal and reduces the likelihood of an agreed judgment entry. Importantly, however, the substantive outcomes themselves may not differ all that much. Dismissals often follow settlements, too (dismissals do not only occur when the defendant prevails outright) and agreed judgment entry may be used solely to allow for enforcement after the parties leave the courthouse (if the defendant complies before the trial date, a judgment is unnecessary).

To begin to investigate this issue in a way that lends itself to intuitive interpretation, we regress case duration in days on the indicator variables we use to study default—i.e., *post-ODR*, *ODR-eligible case type*, and *post-ODR* × *ODR-eligible case type*—using ordinary least squares. As before, our regressions include controls for a defendant's gender, type, and neighborhood income as well as time controls, including eligibility status-specific time trends. Our estimated interaction coefficient represents the change in time-to-disposition in days for eligible cases following the exogenous reduction in litigation costs that accompanies ODR implementation. As before, to explore the role ODR might play in altering the small claims litigation landscape, we also add (endogenous) regressors in some of our regressions, cutting the data by whether the defendant in the case actually accessed the ODR tools and also by whether the parties were able to come to an agreement using the negotiation platform.

We report the results of this OLS analysis in Table 2.5. Column (4) presents the results of our preferred specification, which omits endogenous regressors but does control for time effects and eligibility status-specific time trends.[46] Statistically insignificant point estimates indicate that duration (for disposed cases) is slightly shorter after ODR implementation and that CITD cases generally take an extra week or two to resolve. Our difference-in-differences coefficient estimate of the interaction between *post* and *eligible* shows that cases with defendants who have access to FCMC's ODR platform took on average around 14 days longer to resolve. This estimate is statistically significant at the 5 percent level. If our assumptions (identifying and otherwise) are correct, this longer case duration can be interpreted as the causal result of making small claims cases less costly to litigate.

The welfare implications of such a finding are ambiguous. While cases of longer duration are more expensive and more burdensome on litigants (and perhaps also on courts) all else equal, they are also consistent with higher litigant welfare because case duration is an equilibrium outcome. In particular, if litigation becomes less expensive for defendants to pursue, one might expect fewer defendants to opt for default and instead to seek court-facilitated negotiation. Longer durations may represent better access and, ultimately, the achievement of more accurate outcomes. Thus, there is nothing socially problematic with litigation costs

[46] Columns (1) through (3) present the results of analysis that does not control for time effects and trends. We do not discuss these results here but include them for later comparison with results in Table 2.6.

Table 2.5 *Case duration: OLS results*

	(1)	(2)	(3)	(4)	(5)	(6)
Post-ODR (0 = No, 1 = Yes)	−15.210**	−15.207**	−15.205**	−4.243	−5.155	−5.713
	(1.969)	(1.969)	(1.969)	(7.887)	(7.847)	(7.779)
ODR-Eligible Case Type (0 = No, 1 = Yes)	10.224**	10.212**	10.191**	9.150+	9.143+	9.118+
	(2.253)	(2.253)	(2.253)	(5.386)	(5.385)	(5.384)
Post-ODR × Eligible Case Type	4.983+	3.581	3.582	14.040*	12.229+	12.775*
	(2.979)	(2.991)	(2.991)	(6.371)	(6.385)	(6.368)
Used ODR (0 = No, 1 = Yes)		25.437**	48.059**		21.013**	49.932**
		(8.007)	(11.745)		(7.649)	(10.553)
Agreement through ODR (0 = No, 1 = Yes)			−38.186*			−48.806**
			(15.289)			(14.012)
Constant	100.692**	100.754**	100.757**	104.377**	104.375**	104.365**
	(2.650)	(2.649)	(2.651)	(5.777)	(5.777)	(5.778)
Controls						
Gender	✓	✓	✓	✓	✓	✓
Neighborhood Income Level	✓	✓	✓	✓	✓	✓
Defendant Type (Business/Individual)	✓	✓	✓	✓	✓	✓
Filed Year and Month Dummies				✓	✓	✓
Eligibility-Status Linear and Squared Time Trends				✓	✓	✓
No. of Observations	7,243	7,243	7,243	7,243	7,243	7,243

Notes: The table reports results from OLS regressions in which the outcome variable is the time (in days) between the case's filing and disposition dates. Heteroskedasticity-robust standard errors are reported in parentheses. This analysis only includes closed cases (with dispositions). +, *, ** represent significance at the 10%, 5%, and 1% level, respectively.

and average case duration being negatively correlated. A reduction in costs can induce a defendant to initiate negotiation or mediation or to appear to defend a case—which is usually socially valuable. In fact, when default is common, reform that improves access to justice seems likely to increase duration, at least in the kinds of disputes in which engagement cannot resolve a case any faster than a case can end in default. By contrast, Prescott (2017) finds that platform-based online case resolution technology reduces the duration of cases involving civil infractions alleged by the government, which, critically, are disputes that can be actively resolved before default would otherwise occur.

In columns (5) and (6) of Table 2.5, we probe the data to develop hypotheses to account for the increase in duration for eligible cases post-ODR implementation. ODR use and arriving at an agreement are intermediate outcomes in themselves and therefore endogenous, so these correlations ought to be interpreted descriptively. When we include an indicator for whether a case actually involved ODR as a regressor, we learn that cases negotiated through the platform took even longer to resolve—about 21 days longer.[47] While this difference could be explained by selection, it may also indicate that defendants use the platform to engage with plaintiffs rather than default by choosing to ignore a complaint. If this hypothesis is true, one would expect longer durations for eligible cases after ODR implementation. If we further cut the data by whether the case is resolved by an online agreement (i.e., using the negotiation space), we find that ODR use leading to an agreement is associated with much *shorter* durations relative to ODR cases that are resolved without an online agreement, perhaps because litigation continues in some cases to formal adjudication. In other words, defendants who *actively* access the platform but do not settle seem more likely to litigate rather than default on their cases relative to litigants who do not use ODR tools.[48]

[47] In column (5) of Table 2.5, the point estimate and statistical significance of the *post* × *eligible* estimate drop somewhat relative to column (4), indicating that ODR users account for a larger-than-average share of the increase in case duration for the post-ODR-eligible cases.

[48] In unreported work, we also examine the patterns in the distribution of duration changes across different disposition categories (e.g., agreed judgment entry, dismissal, and judgment for the plaintiff). The results point to further complexity. The availability of ODR may reduce marginal litigation costs via online negotiation, and court-assisted ODR may extend the length of small claims cases on average. But there may be a good deal of variance around this average. Duration may drop if an agreement occurs quickly or may increase by a good deal if negotiation occurs before (and ultimately simply delays) adjudication. In our regressions that include (endogenous) regressors for disposition type, if we look solely at eligible cases involving defendants who choose not to use ODR to negotiate their dispute (this group may not be representative, and so this correlation is just suggestive), we detect

We present OLS analysis in Table 2.5 because the estimates are easy to interpret and because it is straightforward to control for time effects and eligibility status-specific time trends in such a framework. However, there are two significant concerns with this approach that require further investigation. First, the sample we analyze above includes only disposed cases, which may generate an important selection bias if the composition of disposed versus undisposed cases changes following ODR implementation.[49] Second, the use of OLS itself is less than ideal when analyzing duration as an outcome because, among other issues, time-to-disposition measures are unlikely to satisfy OLS's normality assumption and OLS is not well-suited to deal with the censoring of disposition dates.

We address these concerns in two ways. First, we test the robustness of our general conclusion that lower litigation costs increase duration (presumably by reducing default and increasing engagement) by rerunning modified OLS models designed to account for undisposed cases—or at least detect if they might explain our findings.[50] In general, our OLS findings in Table 2.5 on the average increase in duration do not appear to be particularly robust when we try to account for undisposed cases in our analysis. But one of our robustness checks suggests that this shift may be because the reduction in litigation costs produces heterogeneous offsetting duration effects on different types of cases.

We start by treating undisposed cases as if they had closed on the last day of the sample, including an additional indicator control for whether the case was actually undisposed. In unreported results, we find a point estimate that is almost as large (9.2-day increase versus 14.4-day increase), but no longer statistically significant.[51] To investigate this further, we redefine our outcome

no reliable evidence that the availability of ODR tools alone affects case duration. Changes in case duration appear to be channeled through cases that actually use the platform (i.e., when litigants take advantage of the technology to reduce litigation costs), generally resulting in a longer time to disposition. These results are difficult to interpret, and alone do not point in any reliable way to easier or more efficient litigation.

[49] For example, if using ODR tools reduces only the duration of relatively protracted cases, our estimate of the coefficient on the interaction between *post* and *eligible* might be positive. The reduction in duration would manifest only as long-lived *undisposed* cases that transform into somewhat less-long-lived *disposed* cases, increasing the average duration of disposed cases, even though the overall duration of eligible cases drops as a result of ODR implementation.

[50] For space reasons, we do not report these and many other robustness results. We also do not explicitly discuss some of our many sensitivity checks—for example, ensuring that our OLS duration estimates are robust to the exclusion of weekend days.

[51] Specifically, we assume all undisposed cases in our sample are disposed on the data collection date (i.e., November 9, 2017) and include them in our OLS analysis. If we also include an indicator variable that accounts for ODR use (to match column (5) in

measure for all cases (i.e., both disposed and undisposed) as indicators for whether a case closes within 3 months, between 3 months and 6 months, between 6 months and 9 months, and between 9 months and 12 months of when it is filed. Linear probability models produce (unreported) evidence consistent with offsetting changes in the duration distribution. Specifically, we detect increasing duration at the left end of the distribution (i.e., relatively short cases get longer) but evidence of the opposite change at the other end of the distribution.[52] This exploratory analysis hints that duration may increase (in our OLS estimates) primarily through the lengthening of relatively short-lived cases and that ODR tools might actually reduce the duration of long-lived cases but not by enough to compensate for the larger share of now more protracted but initially very short-lived cases. These findings point to there being a complicated relationship between litigation costs and case duration.

Our second strategy to address the potential selection bias of excluding undisposed cases in our duration work is to employ survival analysis, specifically, a Cox proportional hazards model, which requires a proportional hazards assumption but is robust to non-informative right-hand censoring (i.e., undisposed cases). The disposition hazard function represents the disposition rate for a particular case as a function of time in days and a matrix of time-dependent and time-independent controls. As before, we use a difference-in-differences approach, and we include defendant gender as a covariate and stratify the model on defendant type and average neighborhood income level.[53]

Table 2.6 presents the results from our Cox analysis, displayed as exponentiated coefficients, or hazard ratios,[54] with values greater than one

Table 2.5), we find that accessing the negotiation platform is associated with a statistically significant (at the 5 percent level) increase in duration of more than 11 days. If we further add a variable that accounts for reaching an agreement through the platform, we find that an online agreement is associated with a statistically significant (at the 10 percent level) decrease of nearly 18 days.

[52] This evidence is consistent with a higher likelihood of post-ODR-eligible cases resolving within between 6 and 9 months of their filing but a lower or unchanged likelihood of cases resolving during other months (e.g., between 0 and 3 months after filing).

[53] We use stratification for the defendant type and income information rather than include them as covariates because, as controls, they violate the proportional hazards assumption for Cox models. We tested the proportionality assumption for all variables in this analysis using both Schoenfeld residuals and Kaplan-Meier curves.

[54] As before, the exponentiated coefficient of the *post* × *eligible* interaction is actually a ratio of hazard ratios.

Table 2.6 *Case duration: Cox proportional hazards results*

	(1)	(2)	(3)	(4)	(5)	(6)
Post-ODR (0 = No, 1 = Yes)	0.937^{+}	0.937^{+}	0.937^{+}	0.906**	0.906**	0.906**
	(0.032)	(0.032)	(0.032)	(0.028)	(0.028)	(0.028)
ODR-Eligible Case Type (0 = No, 1 = Yes)	0.929*	0.929*	0.929*	0.452**	0.457**	0.457**
	(0.029)	(0.029)	(0.029)	(0.025)	(0.025)	(0.025)
Post-ODR × Eligible Case Type	0.906*	0.931	0.931	0.968	0.996	0.996
	(0.041)	(0.043)	(0.043)	(0.046)	(0.048)	(0.048)
Used ODR (0 = No, 1 = Yes)		0.662**	0.432**		0.386**	0.113**
		(0.062)	(0.056)		(0.105)	(0.051)
Agreement through ODR (0 = No, 1 = Yes)			2.457**			9.563**
			(0.450)			(5.301)
Eligible Case Type × Analysis Time				1.008**	1.008**	1.008**
				(0.001)	(0.001)	(0.001)
Used ODR × Analysis Time					1.005**	1.012**
					(0.002)	(0.003)
Agreement through ODR × Analysis Time						0.988**
						(0.004)
Controls						
Gender	✓	✓	✓	✓	✓	✓
Neighborhood Income Level	✓	✓	✓	✓	✓	✓
Defendant Type (Business/Individual)	✓	✓	✓	✓	✓	✓
No. of Observations	8,497	8,497	8,497	8,497	8,497	8,497

Notes: The table reports results from the (extended) Cox proportional hazards model with "failure" occurring when a case is disposed. Estimates are shown as hazard ratios (i.e., exponentiated coefficients of the Cox regression) for all but the interaction terms, for which the table presents ratios of hazard ratios. Heteroskedasticity-robust standard errors are reported in parentheses. This analysis includes all cases (disposed and undisposed). $^{+}$, *, ** represent significance at the 10%, 5%, and 1% level, respectively.

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indicating a higher rate of case disposition. In column (1), the estimate on our interaction term is 0.91 (which is statistically significant at the 5 percent level). This estimate tells us that once we account for changes in disposition rates experienced by both ineligible and eligible cases (i.e., changes not directly attributable to ODR implementation), the availability of the negotiation platform reduces the disposition rate on any particular day by approximately 9 percent on average, which equates to a longer duration period between filing and disposition.[55] Column (2) adds a variable for a defendant's use of the negotiation platform. Use is associated with a statistically significant hazard ratio of 0.66, indicating that eligible cases filed after ODR implementation experience a further reduction in their disposition rate when defendants use the platform. By contrast, column (3) shows that when negotiation over the platform ends in an agreement, cases resolve relatively quickly.

Columns (1) through (3) of Table 2.6 follow the specification choices of our previous analyses; however, some of our key independent variables may violate the proportional hazards assumption.[56] To account for this, we add three additional specifications with new regressors: linear interactions with analysis time for each variable that violates this assumption. We present these results in columns (4) through (6). Column (4) reports estimates from our base difference-in-differences specification with time

[55] We do not control for time effects or time trends in Table 2.6 for the practical reason that there are computational limits to the number of stratification dimensions one can use. To help in assessing the likely consequences of this exclusion, columns (1) through (3) in Table 2.5 report OLS results from specifications that also omit these controls. In the OLS context, the inclusion of time controls and trends strengthens our results, so their absence in the survival setting may be considered conservative. To explore the robustness of our approach in Table 2.6 for controlling for potential confounders, we run a series of Cox models in which we stratify on varying subsets of our controls (other than gender, which satisfies the proportional hazards assumption and so is included in all models as a control variable). The resulting point estimates on our *post* × *eligible* interaction are usually lower than 0.91 in magnitude (i.e., the longer duration effect is even stronger) but are less precise—in most cases, the interaction estimate is not statistically significantly different from one at conventional levels.

[56] Failing to satisfy the proportional hazards assumption indicates that the relative hazard may not be constant over time. Although some of the variables we use in our analysis that we report in columns (1) through (3) of Table 2.6 appear to violate the proportional hazards assumption for Cox models, Allison (2010) argues that the relative hazards can nevertheless be interpreted as an "average effect" over the relevant time period and are therefore not necessarily incorrect. Interacting these problematic variables with a measure of time—as we do in the specifications corresponding to columns (4) through (6) in Table 2.6—is sufficient to correct for the problem, but the estimates this approach produces are more complicated to interpret (as the relative hazard ratios are now functions of time).

interactions for the *eligible* variable. In general, the variables without time interactions describe a similar effect to the first iteration of this model: introducing ODR tools decreases the disposition rate for eligible cases filed after ODR implementation (i.e., ODR increases case duration). However, the hazard ratio for *eligible* is now dependent on time (in this case, days). The time-dependent relative hazard ratio for eligible cases is 1.008*t*, meaning that each additional day a case is undisposed results in a disposition rate that is 0.8 percent higher. Thus, although ODR-eligible cases are initially associated with lower disposition rates (and, therefore, longer case durations), this effect diminishes over time.[57]

2.5 Possible Mechanisms

Our analysis so far has stressed the effects of ODR access and use on case dispositions and duration. We have contended that access to an online negotiation platform has made it easier for people to resolve their disputes, lowering litigation costs and reducing barriers to using courts, and thereby increasing parties' willingness to pursue litigation. When pursuing a meritorious small claim is rational, parties are more likely to negotiate in the shadow of substantive law, and the outcomes of disputes will be more efficient. But does court-assisted ODR actually reduce litigation costs? How has it worked on the ground? In this part, we present additional data suggesting that access to ODR tools has resulted, in the main, in more effective communication between parties and has made courts more responsive and accessible by eliminating the need to go to court physically during regular business hours. These additional pieces of evidence dovetail well with the major thesis of this chapter that difficult, frustrating, and inaccessible court procedures (i.e., high litigation costs) are more likely to end with default in low-stakes cases, reducing the accuracy of courts and law generally.

In Table 2.7, we present supplementary information on the content of actual negotiations occurring over FCMC's Small Claims Division's ODR

[57] Similar conclusions follow from the estimates we present in columns (5) and (6) in Table 2.6. The indicators for eligibility status, ODR platform use, and whether an agreement was reached on the ODR platform are associated with higher hazard rates as analysis time increases. While eligible cases and cases in which parties made use of the court's ODR tools have much lower disposition rates initially than ineligible cases or cases that are not negotiated over the platform, the disposition rates of the former increase linearly with time, suggesting that after a certain period, they become more likely to be disposed on any given day than their counterpart cases that remain undisposed.

Table 2.7 *ODR content statistics*

	Eligible Pre-ODR	Eligible Post-ODR	Ineligible Pre-ODR	Ineligible Post-ODR	All Groups
All ODR Cases					
Total No. of Cases	4	132	4	21	161
Mean No. of Negotiations	1.25	1.10	1.50	1.00	1.10
Mean No. of Exchanges					
Both Parties Total	10.75	11.30	2.25	1.95	9.84
Sent by Defendant	6.25	5.96	1.50	1.24	5.24
Sent by Plaintiff	4.00	4.92	0.00	0.14	4.15
Disposed ODR Cases					
Number of Cases	4	89	4	17	114
Mean No. of Negotiations	1.25	1.10	1.50	1.00	1.11
Mean No. of Exchanges					
Both Parties Total	10.75	11.70	2.25	1.76	9.85
Sent by Defendant	6.25	5.92	1.50	1.12	5.06
Sent by Plaintiff	4.00	5.16	0.00	0.18	4.19
Disposed ODR Cases w/ Agreement					
Total No. of Cases	2	51	0	5	58
Mean No. of Negotiations	1.00	1.16	–	1.00	1.14
Mean No. of Exchanges					
Both Parties Total	16.50	13.27	–	2.00	12.41
Sent by Defendant	9.50	6.27	–	1.00	5.93
Sent by Plaintiff	6.00	6.02	–	0.00	5.50

Notes: Pre-ODR and post-ODR classifications are determined by a case's filing date in relation to the online dispute resolution (ODR) platform implementation date (i.e., October 21, 2016). Eligibility is determined by the plaintiff's identity (eligible if the City of Columbus Income Tax Division is the plaintiff). An "ODR case" indicates a case in which the defendant accessed the Small Claims Division's ODR platform. The total number of cases reported is 161 (as opposed to 163, as reported in Table 2.2) because two cases represent two distinct matters, and it is impossible in our data to distinguish which negotiations and exchanges are associated with each case in these two pairs.

platform. In particular, we calculate the average number of communications between the parties in all ODR cases, in disposed ODR cases, and in ODR cases ending in agreements. Negotiations producing online agreements involved relatively few exchanges (on average between 13 and 14 for post-ODR-eligible cases), meaning that negotiations were not protracted and were not strategically used as a dilatory tactic to extend the life of cases. Whether negotiations resulted in short- or long-term arrangements, each party received the benefit of avoiding costs associated with scheduling calls or meetings or appearing in court. Importantly, decision-maker intervention was avoided when the parties came to agreement using the ODR platform, allowing court staff to focus resources elsewhere—a spillover benefit that may have led to more effective case processing for parties not opting for ODR. Even when exchanges by the parties over the platform do not result in an agreement, these communications may still amount to quick, efficient discovery—reducing confusion and clarifying issues—and therefore may reduce the psychological and financial costs of resolving the underlying dispute, especially because communication between the parties can occur asynchronously.

ODR-platform technology also responds to the public's demand for choice and on-demand service (reducing litigation costs of a particular sort). For instance, FCMC's court-assisted ODR enhances access to justice by allowing parties to participate in negotiations at a time of day of their choice (and they do not need to agree with each other on a particular time).[58] Under the traditional litigation model, a trial is scheduled for a particular date and time. In FCMC's Small Claims Division, small claims cases were held Mondays through Thursdays at 1:30 p.m. or 2:00 p.m. during the period of this study. Rescheduling is costly and results in delays. By contrast, the ODR platform is accessible 24/7, and rescheduling is never necessary. The communication behavior of our sample of ODR-using defendants reveals that the traditional time for small claims trials is not ideal for a large majority of litigants. In Figure 2.1, we show when defendants initiated negotiation for the first time and when each defendant message was sent by the hour of the day.

[58] FCMC's platform is designed to place parties in control of not only *when* they address their case but how they approach that task as well. A traditional trial is costly in part because it requires parties to surrender self-determination in exchange for a decision that is guided by rules of procedure and substantive case law. Court-connected negotiation, in contrast, allows parties to retain self-determination at an early stage with the knowledge that they may proceed to court if their negotiations are unsuccessful.

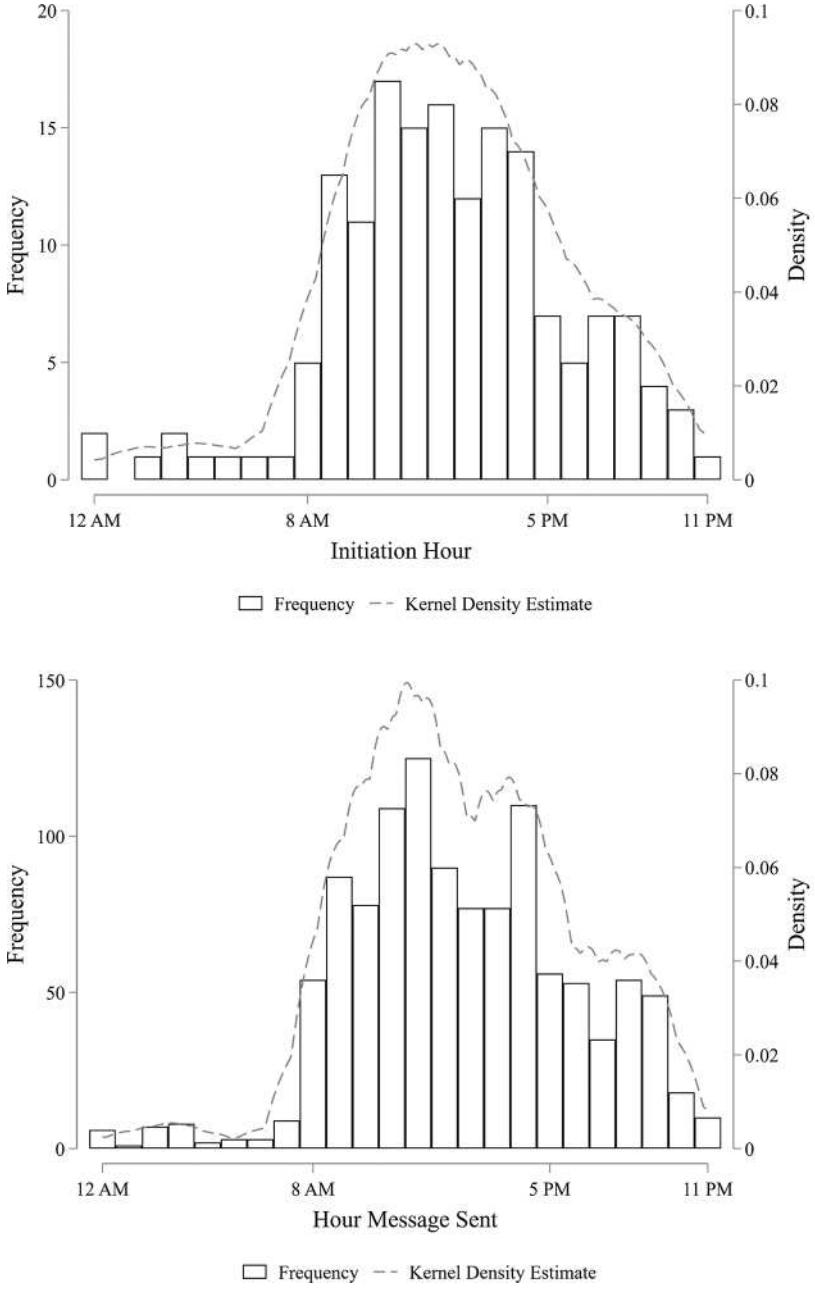

Figure 2.1 ODR exchange timing.

We can draw a couple of conclusions from these data. First, there is great heterogeneity in when defendants *choose* to engage with the court's tools and with the plaintiff. Second, many defendants prefer to "litigate" their case outside of traditional business hours. Leaving aside the financial costs of travel and missing work and the confusion that accompanies going to a courthouse, the traditional one-"time"-fits-all approach is clearly costly in and of itself for defendants.

Our data also allow us to study individual negotiations that took place on FCMC's platform. The exchanges are enlightening, as they regularly reveal the source of the dispute (often confusion or miscommunication), how parties try to resolve their dispute using the platform, and how the availability of the platform allows defendants to engage in a way likely to reduce default and improve the accuracy of the final disposition. In one case, although the defendant had two jobs and would have been unable to come to court either to negotiate with the CITD or for any in-court adjudication, the parties resolved the dispute online in about three hours. In another case, the complaint had its source in a misunderstanding between the defendant and plaintiff and was resolved quickly online. In a third dispute, the defendant was out of the country when he received notice of the small claims suit against him, yet he was easily able to communicate with the plaintiff online and resolve the case. A fourth example involves a quick online agreement for a defendant who, because of family obligations to three special-needs children, would have been unable to appear in court without great difficulty. In the negotiations themselves, defendants sometimes express gratitude for the availability of FCMC's platform. These data points are anecdotes, but they do provide meat to the claim that adopting court-assisted ODR tools can reduce the financial and psychological costs of litigation.[59]

2.6 Conclusion

This chapter has sought to examine how litigation costs can distort case outcomes, particularly in low-stakes cases. In these cases, even modest litigation costs can induce parties to choose "optimally" to default. When litigation costs are fixed, default may be privately and socially optimal,

[59] From the court's perspective, the availability of the online negotiation platform has allowed parties to leverage civil procedure to generate positive substantive outcomes that would not have been possible otherwise.

even if substantively inaccurate. However, when courts are in a position to use technology or other innovations to reduce parties' litigation costs, the outcomes of disputes may improve, tracking on-the-books law more closely. In our empirical work, we study the consequences of a large court's experiment with court-assisted ODR, which takes the cost-reducing aspirations of small claims courts one step further by making an online negotiation space available to litigants, facilitating access to the court and easing communication between the parties. Our conclusions regarding case outcomes are straightforward. The availability of ODR-platform technology reduces the likelihood that a typical defendant's case ends in a default judgment, particularly when the defendant in question actually employs the technology to negotiate and resolve the case. We estimate complicated and at best tentative effects on case duration. Even so, they at least hint that although total litigation costs may not have gone down, the payoff of investing in a case may have increased, making parties more willing to use the courts. In light of this evidence, reform focused on reducing litigation costs in small-stakes cases may not only improve litigant satisfaction with using the court system but may also lead to more accurate case outcomes.

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