Let's work it out (or we'll see you in court): litigation and private dispute resolution in vertical exchange relationships

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LET'S WORK IT OUT (OR WE'LL SEE YOU IN COURT…)
Litigation and Private Dispute Resolution in Vertical Exchange Relationships

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Abstract:
We examine how partners in vertical exchange relationships *actually* resolve disputes that are sufficiently serious to get lawyers involved. Reaching beyond the usual domain of organizational and management research we leverage findings from law and economics to offer a novel organizational perspective on litigation and private dispute resolution, and develop hypotheses about the likelihood of litigation in different exchange settings. Our empirical analysis generates three sets of new findings: First, counter to the received wisdom we see that the involvement of lawyers does not necessarily signal the bitter end of an exchange relationship, as firms frequently manage to avoid litigation and resolve their disputes privately, and do so in a manner that accords with our theoretical predictions. Second, we see that familiarity with exchange partners does not automatically lead to increased willingness to work things out: rather, our empirical results suggest that the impact of exchange duration on parties' willingness to resolve disputes privately is contingent on the development of norms of cooperation; in the event that such norms do not develop, the probability of a litigated outcome actually increases over time. Finally, we see that firms' willingness to work things out privately is also influenced positively by the shadow of the future. These findings are suggestive of a "discriminating alignment" between exchange characteristics and the choice of dispute resolution procedure, and thus inject important new evidence into ongoing discussions about the legal underpinnings of different governance forms.

Key words: contracts; dispute resolution; litigation.

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Introduction

The organizational and relational characteristics supporting the development of cooperative norms and commitment among exchange partners is a topic of enduring interest among organizational scholars. With few exceptions (notably Ariño and de la Torre 1998, Park and Ungson 2001) research to date has examined commitment and performance in ongoing stable exchange relationships (e.g., Gulati 1995, Dyer and Singh 1998, Poppo and Zenger 2002). But what happens when exchange relationships run into difficulty, disputes escalate, and lawyers get involved? Are such relationships inevitably headed towards litigation, as one might presume, or are firms still able to work things out among themselves? How does the likelihood of litigation vary with characteristics of the current exchange, historical relationship, or expected future exchange?

In this paper we employ a unique dataset containing detailed information on contract disputes handled by one European law firm to examine how partners in vertical exchange relationships *actually* resolve disputes that are sufficiently serious to get lawyers involved. This is an under-researched but important aspect of inter-firm governance: while much of the organizational literature on inter-firm exchange and alliances has the threat of litigation in the background, there is almost no empirical research investigating the circumstances leading to litigation. At the same time, as detailed in Williamson's (1991) seminal paper, differences in legal supports – particularly as they relate to dispute resolution – are believed to constitute an important distinguishing feature of alternative governance arrangements. Gaining a better understanding of how firms choose between litigation and private dispute resolution procedures (negotiation, mediation and arbitration) thus has the potential to contribute significantly to our understanding of the governance of vertical exchange relationships and other 'hybrid' organizations.

Our analysis focuses on several important dimensions of vertical exchange relationships identified in the management literature, including the technical complexity of the focal exchange, the firms' history of prior exchange, (the so-called "shadow of the past") and expectations about future exchange (the "shadow of the future"). In developing our hypotheses linking these characteristics to the likelihood of litigation we also draw on

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an established theoretical literature in law and economics on the settlement of contract disputes (Bebchuk 1984, Johnson et al. 2002, Richman 2004). This literature has been largely ignored by organizational researchers, perhaps because legal scholars have focused primarily on variation in litigation rates across broad classes of cases, and thus have not engaged the kinds of organizational or relational characteristics at the center of related studies in the management domain. By bringing these literatures together we offer a novel organizational perspective on litigation and private dispute resolution, and develop hypotheses about the likelihood of litigation in different exchange settings. Our research thus gives us a window on dispute resolution in exchange relationships that are under significant duress, something that represents an important extension of both organizational research and related research in law and economics.

The remainder of the paper is organized as follows: We first lay out the theoretical arguments in Section 1, focusing first on the basic attributes of different dispute resolution modes emphasized by legal scholars and then developing our own organizational perspective on litigation versus private dispute resolution. The empirical data and methods are introduced in Section 2; results follow in Section 3. Section 4 discusses our findings and concludes.

1. Litigation and Private Dispute Resolution

1.1. The law and economics view

Despite the best efforts of managers and lawyers to guard against future contingencies that could threaten cooperation, many inter-firm exchange relationships fall into dispute (Mohr and Spekman 1994). And while most such disputes are handled through informal discussions or routine procedures, in more serious cases advice may be sought from lawyers as managers explore ways to resolve the conflict, including possibly through litigation. It is important to note, however, that the involvement of lawyers does not automatically mean that a dispute will end up in court. Indeed, contrary to popular belief, lawyers often play an important role in facilitating private resolution of serious disputes in commercial settings (Riskin et al. 2009). Greater distance and objectivity means that lawyers are often able to uncover potential zones of agreement and thus enhance the

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probability that disputing parties can reach a negotiated settlement – either independently, or through mediation involving a neutral third party.

As emphasized in the law and economics literature, a significant reason why lawyers typically counsel their clients to pursue private dispute resolution is to avoid the large fixed costs associated with litigation – not only the direct costs of lawyers' and executives' time during the pre-trial discovery phase and the trial proceedings themselves, but also indirect costs stemming from the delays that are endemic to court proceedings (Bebchuk 1984). These fixed costs create a "bargaining surplus" that can be shared by the parties if a negotiated settlement is achieved and the dispute is terminated before it goes to trial (Gould 1973). Thus, for example, in a high-profile dispute between Ford Motors and Navistar (Ford's supplier of diesel engines for over thirty years) while lawyers got involved early in the dispute, and litigation was initiated, ongoing negotiations led to a private settlement well in advance of any potential court ruling, and at significant lower cost to the disputing parties (Simonin 2007).

In addition to cost savings, recent legal research has also highlighted other advantages of private dispute resolution procedures. Johnson et al. (2002, p. 229), for example, argue that negotiated or mediated dispute settlements are frequently superior to litigated outcomes because, *inter alia*, "…they can consider information that cannot be introduced in court, such as impressionistic evidence about business trends or judgments about the quality of items sold. They can base their decisions on a firm's behavior over time, on probabilistic patterns that would not be admissible evidence in court."

Given the dual features of greater nuance and lower cost associated with private dispute resolution procedures, one might well ask why a commercial dispute *ever* ends in litigation. Contemplating this apparent paradox, legal scholars have argued that litigation will only take place when a fundamental disagreement develops between the parties over who will likely prevail in a trial, and/or what judgment will be handed down, and this disparity effectively reduces the perceived bargaining surplus to zero. In theoretical models, reasons for such disagreements have typically been ascribed to information asymmetries between the exchange partners –

and thus uncertainty about the actual facts of a case – or uncertainty about the legal standards or decision rules that will be applied by the judge or jury (Bebchuk 1984, Priest and Klein 1984). In empirical investigations, legal scholars have primarily explored the effect of uncertain legal standards, comparing the proportion of lawsuits that are settled privately across broad classes of cases – torts, civil or prisoner rights, contracts, intellectual property, labor disputes, etc. (see Siegelman and Waldfogel 1999 for a summary of the evidence). These studies have found broad support for the notion that uncertainty about legal standards increases the number of cases filed with the court that actually go to trial; they unfortunately do little to illuminate the link between litigation and features of a particular inter-firm exchange relationship, the focus of our own inquiry and the issue of most interest to organizational scholars. For this we turn to the organizations literature on sources of information asymmetry and uncertainty in exchange relationships.

1.2. The organizational view – exchange and relational characteristics and the likelihood of litigation

Uncertainty has been a focal concept in theories of organization, at least since Knight (1921). And while researchers have explored a variety of sources and implications of uncertainty (Daft and Macintosh 1981, Carson et al. 2006), we restrict our attention here to two types of uncertainty that we believe are particularly relevant to firms' abilities to predict the likely outcome of litigation, which in turn impacts their willingness to negotiate a settlement "in the shadow of the court," as discussed above: these are 'technical uncertainty' related to the complexity of the focal exchange (Simon 1962) and 'behavioral uncertainty' related to actions and motivations of the exchange partner (Williamson 1985).[1] For behavioral uncertainty, we focus in particular on how firms' willingness to work things out privately changes as behavioral uncertainty evolves over the course of an exchange relationship.

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[1] Other sources of uncertainty identified in the organizations literature, such as volatility in the exchange environment (e.g., Carson et al. 2006) are more likely to impact the frequency of disputes then the ability to predict litigation outcomes (and thus the likelihood that a disputes is settled prior to going to court).

Prior research in organizational economics suggests that technical uncertainty, rooted in humans' limited understanding of nature (Slater and Spencer 2000) is increasing in the complexity of the technology involved in an exchange because technical "glitches" become more likely as complexity increases (Hoopes and Postrel 1999), and it becomes increasingly difficult to demonstrate causal links between exchange partners' efforts and observed outcomes (Monteverde and Teece 1982). Thus, starting from a baseline of technically simple transactions (such as supply contracts for simple standard parts requiring little customization), we should expect that as technical complexity increases, the likelihood of divergent expectations regarding litigation outcomes will also increase. As a result, while firms still have an incentive to settle disputes involving complex transactions privately to save the fixed costs of litigation, they and their lawyers are more likely to make mistakes in their assessments of what constitutes an appropriate settlement, thereby ending up in court with greater frequency. This implies that we will see a positive relationship between technical complexity and the likelihood of litigation.

One important caveat to the above argument, however – and indeed to the related research linking uncertainty to the likelihood of litigation in law and economics – is that it focuses exclusively on the challenges that *disputants* (managers and their lawyers) face in making attributions and estimating costs associated with particular operational failures. However, for highly complex transactions, even if the firms involved in the exchange have a reasonable understanding of the facts of the case, there may be significant limitations on the *verifiability* of these facts within the constraints of judicial proceedings (Grossman and Hart 1986). Williamson (1991, pp. 272–73) argues that under these circumstances, parties recognize the limits of court ordering and move towards a "neoclassical" contracting regime (Llewellyn 1931), where court ordering is explicitly rejected in favor of private dispute resolution – negotiation, mediation, or arbitration.

Together these arguments imply a non-linear relationship between technical uncertainty and the likelihood of litigation: for disputes involving technically very simple exchanges we should expect that litigation will be rare, as parties can reach agreement relatively easily and, by settling privately, can avoid the costs of

litigation; indeed at the limit we would expect managers to settle problems informally so that such cases would not to come to the attention of lawyers at all. With increasing technical uncertainty, misattributions and errors in managers' (and lawyers) predictions of likely litigation outcomes will occur with increasing frequency, undermining efforts to reach agreement and so landing the disputing parties in court. However, for transactions of *very* high technical complexity, we expect that litigation will again be rare: we should expect firms to recognize the limits of the court to handle highly technically-complex disputes – as well as the likelihood that they themselves may make misattributions and errors in predicting court outcomes – and will thus commit to private dispute resolution procedures that support the nuanced understanding required for settlement of these cases. It is in the middle range of complexity where litigation is likely to be more common then, as firms may underestimate the difficulties associated with private settlement and/or overestimate the ability of the court to handle the dispute. This combined argument thus leads to the following hypothesis:

H1: There is an inverted U-shaped relationship between the technical complexity of the exchange and the likelihood of litigation.

Behavioral uncertainty refers to uncertainty about others' future actions and motivations and thus the likelihood of cooperation versus opportunism within exchange relationships. Such uncertainty stems from the observation that "some individuals are opportunistic some of the time, and differential trustworthiness is rarely transparent *ex ante*" (Williamson 1985, p. 64). Economic models of repeated exchange focus on active selection of cooperative partners when new contracts are awarded or contracts are renewed. As long as exchange partners cooperate, exchange continues, contracts are renewed, etc.; if one partner deviates and acts opportunistically, exchange is terminated (Klein 1996). Based on this same idea, firms are sometimes advised to test new exchange partners in relatively simple short-term projects so that uncooperative partners can effectively be weeded out prior to making any longer-term or high-volume exchange commitments (Liker and Choi 2004).

If firms systematically condition contract renewal on the basis of cooperative behavior in prior interactions, then in a cross-section we should observe a positive correlation between the total elapsed duration of an exchange relationship and the average perceived level of cooperation between partners. This in turn should lead to fewer disputes emerging in exchange relationships of longer elapsed duration *and* a higher willingness to work things out in the event that a serious dispute does emerge.

A similar conclusion can be drawn from research that focuses not on weeding out of uncooperative exchange partners, but rather on inter-partner learning: it has been suggested that knowledge of an exchange partner's capabilities and constraints increases over time, as does understanding of the technical and exchange domain (Zollo et al. 2002, Argyres et al. 2007).[2] In this view, learning predictably decreases uncertainty and information asymmetries among exchange partners over time, reinforcing the positive selection effects emphasized by Klein (1996) and others. Thus we have two paths to the following hypothesis:

H2: The likelihood of litigation is decreasing in the elapsed duration of the exchange relationship at the time the dispute arises.

An alternative perspective on the emergence of cooperative norms in exchange relationships takes a less calculative view than that discussed above and instead emphasizes powerful cognitive and emotional human traits (Lewis and Weigert 1985). In this view repeated interactions over the course of exchange lead to the spontaneous emergence of "familiarity-based trust," as personal ties between members of the two organizations develop, leading to feelings of affiliation (Gulati 1995), "pressures for conformity to expectations" (Macaulay 1963, p. 63) and "fine-grained information transfer, and joint problem-solving" (Uzzi 1996, p. 677). These features are indicative of an increase in the willingness and ability of partners in repeated exchange to

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[2] We should note that learning is logically connected to the intensity or volume of the exchange as well as the duration of exchange. Unfortunately we do not have reliable measures of exchange volume in our data and so we focus solely on duration. However, based on prior evidence it is likely that duration and volume of exchanges are highly correlated (see, e.g., Vanneste and Puranam 2010).

work things out and maintain relationship stability, reinforcing the association between relationship duration and private dispute resolution discussed above.

An active recent literature has nonetheless begun to challenge the notion that a longer history of exchange *automatically* leads to the development of trust and cooperative norms (See, e.g., Anderson and Jap 2005, Poppo et al. 2008). Some writers on collaborative strategies have noted the existence of an initial "honeymoon period," where exchange partners may give each other the benefit of the doubt in the early stages of the relationship (Kanter 1994). In this view, it is only when the relationship inevitably faces its first significant 'shock' (e.g., due to changes in the environment or the strategic context) that attitudes towards the exchange partner – positive or negative – begin to solidify (Ariño and de la Torre 1998, Gulati and Sytch 2008). Similarly, Poppo et al. (2008, p. 1200) note the tentative nature of behavioral attributions in the early stages of an exchange relationship: "Trust, if it exists, likely is very fragile because little personal history provides a basis for it." This argument implies that the effect of elapsed duration on firms' willingness to work things out will be significantly muted *until and unless* norms of cooperation develop in the exchange relationship. However, subsequent to the development of such norms we would expect that the likelihood of litigation will continue to decrease over time as firms continue to learn from each other, so reducing information asymmetries between the parties, decreasing uncertainty over litigation outcomes, and facilitating negotiation and private dispute resolution. Thus we suggest:

H3: The negative effect of elapsed duration on the likelihood of litigation is weakened if cooperative norms are absent from the exchange relationship.

In addition to the impact of the *history* of exchange on dispute resolution, prior research also suggests that dispute resolution is shaped by the "shadow of the future" – when firms have the expectation of continued profitable exchange into the future, their incentives to resolve disputes to preserve the exchange relationship are predictably increased. This proposition is derived from well-established economic models of repeated exchange (Axelrod 1984) and is closely related to the selection models discussed above (e.g., Klein 1996): in

these models it is precisely the threat of contract termination (or non-renewal), and loss of future rents, that brings discipline into an exchange relationship and supports the development of cooperative norms among exchange partners. Moreover, the longer the expected time horizon over which future benefits are expected to accrue, the higher are the benefits of continued cooperation.

One implication of this logic is that firms are less likely to act opportunistically when the shadow of the future is long – a proposition that has found significant support in prior empirical studies of inter-organizational relationships (e.g., Heide and Miner 1992). An additional implication, however, is that when the shadow of the future is long firms may be loathe to forego the expected gains from future cooperation *even if they suspect that their exchange partner may have acted opportunistically* (Farrell and Maskin 1989). Dispute resolution in this context becomes more complex as firms seek to balance the need to preserve discipline within the exchange (by punishing defection) with the desire to maintain the relationship and reap the benefits of continued exchange. As discussed earlier, courts are particularly ill-suited to making the kinds of nuanced judgments that are tailored to the needs of the parties in such particular circumstances; as such, we would expect firms to eschew litigation and instead opt for private dispute resolution in these cases. This reasoning thus leads to our final hypothesis:

H4: The likelihood of litigation is decreasing in the expected future duration of the exchange relationship at the time the dispute arises.

2. Empirical Data and Methods

2.1. Empirical Context and Sample Description

Our empirical study employs a sample of contract disputes arising in vertical exchange relationships. The first author was granted access by a French law firm to all legal files concerning contract disputes handled by the

firm between 1991 and 2005.[3] Data collection took place over a four-month period during which time the

researcher was able to gain insights into the legal context and the practices and routines of the law firm through

daily informal conversations with lawyers and administrative staff. Additional interviews were conducted with

lawyers unrelated to this law firm, and with law professors specialized in contract law. The data collection

process yielded information on disputes related to 102 vertical exchange contracts involving 178 unique firms.

Data obtained from the legal files include all documents issued by each party to the contract and

exchanged during the dispute resolution process, as well as additional information requested by the lawyers

from the client, such as the initial context of the contracting relationship, the origin of the conflict, and its

evolution prior to the law firm getting involved. Due to the highly confidential nature of the data the researchers

were not able to speak directly to the firms involved in the disputes, nor is it possible to identify the companies

in the sample by name.

While we believe that we are the first management scholars to collect dispute data from lawyers' notes,

our use of third-party notes as a source of data in management research is far from unique (see, e.g., Klein

Woolthuis et al. 2005, Bouwens and van Lent 2006). Lawyers' notes have some attractive features as a data

source for a study of dispute resolution as they provide a near-real time record of firms' perceptions and

intentions as the dispute emerged and progressed. Lawyers' notes are usually compiled during initial meetings

between the lawyer assigned to the case and the client – typically the CEO in a small firm, or the mid-level

manager responsible for the exchange relationship in a larger firm. Moreover, because it is important for

lawyers to obtain an accurate picture of past events and future intentions, they use a variety of interviewing

strategies to get to the facts and to minimize exaggeration and obfuscation by managers who may be

emotionally involved and otherwise apt to portray their firm in an overly positive light (Tractenberg 1984). These

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[3] Discussions with lawyers at the firm indicated that they consider their firm to be quite representative of mid-size generalist corporate law firms in France. The firm's generalist status is also reflected in the wide variety of clients represented in terms of size and industry focus.

interviews are confidential, and views expressed are not subject to legal disclosure, nor are they shared with lawyers representing the other firm. All in all, it seems reasonable to expect that many of the problems of over-simplification, faulty post hoc attributions and other retrospective biases or simple lapses of memory that plague first-person retrospective accounts may be reduced in these third-party notes (Golden 1992).

A significant limitation of our data source, however, is that we only observe disputes when lawyers become involved and disputes resolved prior to lawyer involvement will be missing entirely from our data set. This may introduce problematic selection bias into our empirical analysis; we therefore explore possible selection effects in the robustness section following presentation of the main results. At the same time, we also note that our data set is much *less* restrictive than those used in previous empirical studies of settlement and litigation in the law and economics literatures, which rely almost exclusively on samples of cases actually filed with the court (see, e.g., Siegelman and Waldfogel 1999).

Our empirical setting, focusing on vertical exchange relationships at a single law firm, effectively eliminates several other potential sources of unobserved heterogeneity (and possible selection bias) such as those associated with differences in legal standards, lawyer preferences or reputation. Moreover, the likelihood of litigation of the disputes in our sample is not significantly related to whether the law firm represented the plaintiff or the defendant (48 and 54 cases respectively), whether the firm had its own internal legal department (true in 15 cases), the nationality of the firms involved, or whether the dispute involved disagreement about the intended scope of the agreement versus alleged failure to meet contract terms such as payment or delivery schedules (33 and 69 cases respectively).[4]

The contracts included in our study encompass a variety of vertical exchange relationships and involve firms in a broad range of industries. The majority of the firms in the sample (53%) are in the manufacturing sector, with industrial and commercial machinery being the most frequently-represented industry at the 2-digit

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[4] Adding control variables for these different features produces no material change in our empirical results.

SIC level (SIC 35: 14%); 12% are in chemicals and allied products (SIC 28); and 9% in Electronic & Electrical

Equipment & Components (SIC 36); no other single 2-digit manufacturing industry accounts for more than 5% of

the total sample. Retail firms are also well-represented (14%), as are other service firms (33%).

Table 1 provides details of the dispute resolution mode observed in each case in the sample and gives a

breakdown across four types of exchange relationships: distribution agreements, plus three types of supply

agreements: (i) intermediate products and components used in production, (ii) information technology,

software development and implementation; (iii) other services, primarily consulting. Perhaps not surprisingly,

given the involvement of lawyers, many of the disputes do end in litigation. However, close to half of the cases –

41 out of 102 – are settled via private dispute resolution processes: 13 through arbitration, 5 in mediation, and

23 through negotiated settlement. This reinforces the notion that there are strong incentives to settle even

quite serious disputes via private dispute resolution processes.

[Table 1 about here]

Our theoretical arguments regarding the relative attractiveness of private dispute resolution versus

litigation are based in part on the assumption that private dispute resolution procedures are more likely to

uncover zones of hidden agreement between the partners, generate more nuanced settlements, and preserve

the exchange relationship beyond the dispute – in other words that they reflect partner firms' efforts to "work it

out" when a serious dispute emerges. To probe this assumption directly we examined the terms of the

settlements / judgments recorded in the legal files for each of the disputes, coding them according to the

presence or absence of several features that we believe capture the flexibility and forward-looking aspects (or

lack thereof) of the dispute resolution outcomes. Table 2 displays frequency statistics for the presence of each

of these different terms in cases resolved under each of the different dispute resolution modes in our sample.

[Table 2 about here]

These statistics are quite consistent with our assumption: when compared with each of the private

dispute settlement modes, a judgment resulting from litigation is *more* likely to include an award of monetary

damages to one of the parties but *less* likely to specify contract modifications to support completion of the

contracted activities, or a commitment to continue performance under the terms of the existing contract. In

addition, in about 50% of the privately-resolved cases the firms indicated their intent to continue with the

exchange into the future, while for those cases that ended in a litigated judgment, only 12% of the parties

indicated a willingness to continue with the relationship.[5] Thus private dispute resolution processes indeed

appear to be associated with more nuanced settlements tailored to the changing needs of the contracting

parties, and with greater continuity in exchange relationships.

2.2. Dependent Variable: Dispute Resolution Modes

In keeping with our focus on the choice between litigation and private dispute resolution, in our

empirical estimations we collapse arbitration, mediation, and negotiation into a single category and use a

binomial probit model to estimate the probability of a litigated outcome versus private dispute resolution. Our

dependent variable in the empirical analysis is thus an indicator variable, ***Litigation*** which takes the value of 1

where a dispute resulted in litigation and a court-rendered judgment; 0 if the dispute was settled by private

negotiation, mediation or arbitration.[6]

2.3. Independent Variables

From the legal files and other archival sources, we construct a variety of explanatory and control

variables for our empirical analysis. To test hypothesis H1, we require a measure that captures the technical

complexity of the exchange transaction under dispute. Since we are unable to directly observe the technical

details of the products or services being exchanged in the focal relationship, we rely instead on the extent of the

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[5] See Malhotra and Lumineau (2011) for further discussion of circumstances affecting the likelihood of continued collaboration.

[6] Multinomial logit regressions, which allow for separate categories for litigation, negotiation/mediation, and arbitration, (results not shown, available from the authors on request) support the dichotomous treatment and produce estimates consistent with our reported results. Note also that, consistent with prior research (Siegelman and Waldfogel 1999), the dispute resolution modes shown in Table 1 are reflective of the *final* outcome of dispute resolution; in a few cases settlement occurred after litigation had been initiated. Further analysis of the available data (also not shown) did not reveal any significant differences related to the timing of settlement.

technical specifications attached to the contract governing the exchange.[7] **Technical Complexity** is equal to the number of pages of technical specifications and we include both the main effect and a square term for *Technical Complexity* to capture the hypothesized non-linear relationship between the technical complexity of the exchange and the likelihood of litigation.

For relationship duration measures related to past and future exchange, we searched the legal files to establish the following dates: (i) the start date of the first contract linking the exchange partners involved in the dispute (for first-time transactors this is the current contract); (ii) the date that the dispute arose, as indicated by the date of the first communication between the firms related to the dispute and recorded in the case file – usually either an e-mail or a letter from a manager at one of the firms to his/her counterpart at the other firm; (iii) the projected termination date of the current contract – i.e. the date at which completion of the work was expected at the time the parties entered the contract, and/or the date at which the agreement was scheduled to terminate. These dates were then used to construct the following variables:

Pre-Dispute Relationship Duration is equal to the elapsed time (in days) between the beginning of the exchange relationship and the date at which the dispute arose (as defined above).[8] **Time Remaining** is equal to the number of days remaining in the existing contract at the time that the dispute arose.[9] Since this latter variable is only defined for contracts with a specified duration, we also include a dummy variable, **Open,** which is equal to one for those contracts that are open-ended and have no recorded end date.[10]

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[7] This measure resonates with Simon's (1962, p. 468) definition of complex systems as systems "made up of a large number of parts that interact in a non-simple way." The relationship between the extent of technical detail included in the contract and more direct indicators of the underlying technical complexity of the transaction has been demonstrated empirically in prior work, for example by Argyres et al. (2007) and Vanneste and Puranam (2010).

[8] There was one contract in the sample for which we could not find a start date; we set pre-dispute relationship duration to the sample mean value of 627 days; our results are insensitive to the exclusion of this observation.

[9] *Time Remaining* may understate the parties' expectations regarding future exchange, in the event that they anticipate contract renewal and/or the initiation of additional contracts. This represents a limitation of the current study and an opportunity for future work (see p. 25, below).

[10] Note that the construction of these variables means that for a given observation it can never be the case that both *Time Remaining* **and** *Open* take on a positive value: Open-ended relationships take a value 1 on *Open* and a value 0 on *Time Remaining*; Time-bound contracts take a value of 0 on *Open* and a value between 0 and 2575 days on *Time Remaining*,

To evaluate the presence of cooperative norms in the exchange relationship prior to the dispute we applied content analysis and, following prior research (Heide and John 1990; Jap and Ganesan 2000), coded all descriptions of the exchange relationship in lawyers' notes from their initial meetings with managers of the client firm.[11] Based on this coding we developed a dichotomous measure: ***Cooperative Norms*** = 1 if the file contains explicit references to flexibility, participation, and/or solidarity in prior interactions between the partners; 0 otherwise.

We also include a range of control variables that, based on prior research, we anticipate may influence the likelihood of private dispute resolution. Transaction cost economics for example, suggests that exchange relationships vary in the extent of specific investments – i.e. investments whose value would be lost or degraded should the relationship be terminated (Williamson 1991). The build-up of such investments may increase firms' preference for private dispute resolution procedures in order to preserve the exchange relationship. Although we are unable to obtain direct measures of specific investments, we again used content analysis of the legal files and coded for references to relationship-specific assets in the following categories: (a) human assets, i.e. knowledge specialized to a particular buyer or supplier's products, or time and effort dedicated to learning about a buyer's specific requirements; (b) physical assets, i.e., specialized production equipment and systems linking buyer and supplier production and scheduling activities; (c) site specificity , i.e. investments in dedicated facilities specific to this relationship. Given the coarse grain of this categorical data, we follow prior research in this domain (David and Han 2004, p. 47) and use a simple dichotomous variable, ***High Asset Specificity*** = 1 if there are indications of specific investments in two or more categories; 0 otherwise.[12]

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based on the number of days left in the current contract. This construction facilitates interpretation: a negative coefficient on *Open* gives an indication of the reduced likelihood of litigation for open-ended contracts relative to time-bound contracts with zero time remaining; the negative coefficient on *Time Remaining* gives an indication of the reduced likelihood of litigation associated with additional days remaining on time-bound contracts.

[11] See Malhotra and Lumineau (2011) for details of the content analysis used in the construction of this variable.

[12] The information in the files is not sufficiently nuanced to develop measures of the intensity of investments in each category; we are more confident that we are able to capture the presence or absence of specific investments of the

Given the substantial fixed costs of litigation, prior research suggests that private settlement may also be more likely for disputes involving contracts of relatively low monetary value (Priest and Klein 1984), where neither firm has a large stake in the outcome. We thus include a control variable, **Contract Value**, defined as the log of the total value of the contract under dispute, in thousands of inflation-adjusted Euros.[13] To also account for the possibility that larger firms are more able to absorb the costs of litigation we include **Total Size**, the combined size of the two firms, measured as the sum of the total assets (data obtained from Bureau van Dijk's ORBIS database). Similarly, to capture asymmetry in the parties' stakes in the dispute or the potential impact of a judgment on their financial health (controlling for contract value), we include an additional variable, **Asymmetry**, defined as the log of the absolute value of the difference in revenues of the firms involved.

Finally, a continuous time trend variable, **Time Trend,** captures possible changes in litigation practices over the sample period, and dummy variables indicating agreement types (corresponding to those shown in Table 1) and industry affiliation of the exchange partners are also included. Table 3 shows descriptive statistics for all of these variables, plus supplementary variables used in robustness tests (described below, following presentation of the empirical results).

[Table 3 about here]

3. Empirical Results

Our first estimation results, relating to hypothesis H1, are shown in Table 4, Model 1. The dependent variable in this binomial probit regression is the dichotomous variable, *Litigation* and a positive coefficient indicates an increased likelihood of a litigated outcome relative to private dispute resolution.

[Table 4 about here]

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different types, but we cannot rule out the possibility that intense investment in some categories dominates the effect of lower investments in other categories.

[13] Ideally we would like to measure each party's direct stake in the dispute, i.e. the dollar value of that part of the contract that is under dispute (which may be different than the total contract value). However, because lawsuits sometimes include non-monetary claims it is not possible to subscribe a direct monetary value to each firm's stake in the dispute, and contract value represents the closest available approximation.

Looking at the results for *Technical Complexity*, we see the main effect is positive and the square term is negative; calculation of the net effect of changes in *Technical Complexity* and *(Technical Complexity)²* on the probability of litigation (with all other independent variables held at their sample means) reveals an inflexion point quite low in the observed data range, consistent with the hypothesized inverted-U shape. Figure 1 displays this relationship graphically. As predicted, we see a relatively low predicted likelihood of litigation for the technically simplest exchanges (less than 50% for exchanges with zero or very few pages of the contract devoted to technical specifications), but this rises quite rapidly as complexity increases, to a high in excess of 80%; beyond the inflexion point the probability of litigation approaches zero for the most technically complex transactions. This is consistent with the argument that exchanges involving a high degree of technical complexity predictably tax judges' ability to reach an efficient resolution of the dispute; recognizing this, partners in such exchanges eschew the court in favor of private dispute resolution via negotiation or arbitration.[14]

[Figure 1]

Very few of the control variables in the regression specifications in Table 4 yield significant coefficients. Among the industry dummies (coefficients suppressed for space considerations), disputes involving firms in machinery and in "other manufacturing" are significantly less likely to be settled privately relative to the baseline category, other services; none of the other industry dummies or indicators of agreement type carry significant coefficients.

The results of regressions examining how dispute resolution mode varies with the elapsed duration of the exchange relationship are presented in Models 2-4, also in Table 4. In the simplest specification (Model 2)

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[14] In supplementary analysis (results not shown; available from the authors on request) we relaxed the functional form restriction imposed by the quadratic formulation, replacing the count variables with a series of piece-wise dummy variables based on quintiles in the distribution of Technical Complexity, and running a regression equivalent to that in Model 1 (without a square term). The results are quite consistent with those derived from the quadratic specification, yielding significant negative coefficients on the first and fifth quintiles; coefficients in the three middle quintiles are insignificantly different from each other. These results thus indicate that litigation is significantly less likely at the two extremes of the distribution of technical complexity, consistent with H1.

the coefficient on *Pre-Dispute Relationship Duration* is very small in magnitude and statistically insignificant.

Thus we do not find support for the simple effect of elapsed duration on exchange partners' willingness to work

things out predicted in hypothesis H2. In Model 3 we add the indicator variable *Cooperative Norms* and see that

disputes arising in exchange relationships characterized by cooperative norms are indeed less likely to be

litigated and tend to be resolved via private dispute resolution procedures, as one would expect. Thus the

development of cooperative norms over the course of exchange appears to significantly tip the balance in favor

of private dispute resolution, allowing firms to avoid costly litigation. Model 4 probes this result further,

interacting *Cooperative Norms* with *Pre-Dispute Relationship Duration*. This estimation reveals an interesting

pattern: the main effect of *Pre-Dispute Relationship* duration is now significant and ***positive***, while *Cooperative*

Norms interacts negatively with duration, supporting hypothesis H3.[15] This result suggests that the impact of

exchange duration on parties' willingness to work things out when disputes arise is contingent on the

development of norms of cooperation; in the event that such norms do not develop, the probability of a

litigated outcome is actually increased. One possible explanation for this result is that parties foresee little

prospect of successful negotiation or effective compromise within the context of private dispute settlement

procedures when they have failed to develop cooperative norms over the course of an extended exchange

relationship.

<center>[Table 5 about here]</center>

      Our next set of results explores the impact of the shadow of the future on firms' willingness to work

things out. In Table 5, the first regression (Model 5) adds *Time Remaining* and *Open* to the basic Model 1

specification. Consistent with hypothesis H4, the coefficients on both *Time Remaining* and *Open* are significant

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[15] We also calculated and graphed the magnitude and significance of the interaction term across all observations using the "inteff" command in Stata (Norton et al. 2004). These results (available on request) confirmed that the sign of the interaction effect is indeed negative across the entire range of the data and the effect is significant for observations across approximately 80% of the data range – as one would expect, the significance of the interaction term is lowest at the extremes of the data range.

and negative indicating that firms are less likely to litigate disputes when the shadow of the future is long.

Models 6 and 7 reintroduce the variables related to pre-dispute duration. The significant effects for the variables associated with the shadow of the future are robust to the inclusion of these additional variables and again we see that the impact of prior exchange on the likelihood of litigation is only significant when cooperative norms have developed over the course of an extended exchange relationship.

4. Robustness Tests

The empirical results reported above suggest that the likelihood that exchange partners end up in court when they get into a dispute changes significantly depending on their past exchange relationship and expectations re future exchange as well as on the complexity of the underlying transaction. In this section we probe the robustness of these results and test some of the underlying assumptions in our analysis.

The primary target of our robustness tests is the implied *ceteris paribus* condition in each of our hypotheses. As mentioned earlier, a particularly salient concern in our empirical setting is the inherent selection bias in our sample. This stems from the fact that we do not observe a disputed exchange until the point at which lawyers become involved in dispute resolution. This implies that we are only observing a portion of the distribution of exchanges that are "at risk" of litigation. Since there may be sources of unobserved heterogeneity in the underlying exchanges that are correlated with our measured attributes as well as with the likelihood of litigation, the resulting selection bias could interfere with our ability to draw valid empirical inferences from the analysis (Hamilton and Nickerson 2003). In an ideal world, we would identify a series of instruments that are not correlated with the likelihood of litigation versus private dispute resolution except indirectly through the endogenous exchange and relationship constructs of interest (e.g., Technical Complexity, Cooperative Norms). Unfortunately, as in many other exchange contexts, identifying valid instruments in our setting is infeasible, given that we observe no relevant exogenous shocks during the sample period.

Even in the absence of valid instruments, we are nonetheless able to address some of the most likely effects of problematic bias in our sample, at least indirectly. Take, for example, the impact of *Pre-Dispute*

Relationship Duration on the likelihood of litigation and, in particular, the observed *positive* association between the likelihood of litigation and the length of prior exchange when cooperative norms have not developed (i.e. when *Cooperative Norms* = 0). An alternative explanation for this observation is that lawyers may not become involved as early in the process in conflicts between repeated exchange partners and, since we only observe disputes once lawyers do get involved, the disputes between partners with a longer history of exchange in our sample may be on average more "serious" (in a way that is unobservable to us) than those involving first-time or recent exchange partners. To assess this possibility we coded an additional variable, **Time to Lawyer**, equal to the number of days separating the first communication between the firms themselves regarding the dispute, and the first meeting between the lawyer and the client firm about the dispute. Table 6 shows relevant summary statistics for disputes between firms with different relational histories.

[Table 6 about here]

These statistics are quite illuminating: for the sample as a whole, there is little difference in the mean value of *Time to Lawyer* between exchange relationships where *Cooperative Norms* have developed and those where they have not (161 versus 145 days; not a significant difference, given the sample variance). However, for firms that have been in an exchange relationship for a long time (>800 days, the 75th percentile in our sample) the difference in *Time to Lawyer* for exchange relationships with cooperative norms versus those without is dramatic: 236 days versus 36 days. This strongly reinforces our inference that partners with a long history of cooperation in an exchange relationship have a higher willingness to "work it out" to avoid litigation than do either new exchange partners or those with a troubled exchange history: Partners with a long history of cooperative exchange try to work things out between themselves for a much longer period before involving lawyers; moreover, once lawyers do get involved, these long-time exchange partners are *still* more likely to eschew litigation and resolve the dispute privately. For partners with an extended negative experience of exchange (i.e., where cooperative norms have failed to develop) this process is completely reversed: lawyers

become involved very early in the process – much earlier even than is the case for new exchange partners – and litigation is the more likely outcome in this case.

Another possible source of unobserved heterogeneity (and problematic endogeneity bias) in our sample is differential contracting capability, wherein some exchange partners are better-able to accurately foresee potential sources of conflict, and address these by adding appropriate additional clauses to the contract governing the exchange. This possibility is particularly problematic to the extent that there is "learning by contracting," as suggested in some prior research (e.g., Mayer and Argyres 2004); in this case one might observe a spurious negative correlation between *Pre-Dispute Relationship Duration* and the likelihood of litigation. To probe for this possibility we examined the contracts used to govern the exchanges in our sample and created a count variable based on the presence or absence of nine particular clauses in the contract, similar to those used in prior research (e.g., Parkhe 1993, Lumineau and Malhotra 2011).[16] The index variable, ***Contractual Sophistication*** is defined as: $\sum C_i$; where $C_i=1$ if provision i exists; $C_i=0$ otherwise. This is an integer variable ranging from zero to nine.

Some contracts in our sample also include an explicit dispute resolution provision. Inclusion of such a provision may itself reflect an increased commitment to 'working it out' in the event of a dispute, although as legal scholars emphasize, it by no means rules out the possibility of litigation (or any other dispute resolution mode): "Even if parties have contractually agreed to use one [dispute resolution] method, they may switch to another if they feel that the latter is more appropriate for a given dispute" Mattli (2001, p. 920). We should nonetheless ensure that our results regarding final dispute resolution outcomes are robust to the inclusion of

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[16] The contract clauses included in the measure are: 1. Right to audit/inspection; 2. Safeguard system; 3. Control by a third party; 4. Penalty clause; 5. Resolution clause; 6. Assignment of roles and responsibilities; 7. Indication of duration and conditions of renewal; 8. Organizational coordination (ability to reassign tasks among participants without altering the goal of the contractual arrangement); and 9. Strategic coordination (process set up to redefine the objective of the relationship). Initial coding of the contracts was undertaken with input from a law professor and three practicing lawyers specializing in contract law (with no connection to the disputes or to the law firm providing the data); measures were further validated by six other contract law specialists.

this clause, and thus introduce a dummy variable **Dispute Resolution Clause** indicating the presence of such a

clause in the contract. Regression results incorporating these contract-based measures are shown in Table 7. As

these results indicate, both the inclusion of a dispute resolution clause and increases in contractual

sophistication are associated with decreased likelihood of litigation (in most specifications), but inclusion of

these terms does not materially change the main results noted earlier.

[Table 7 about here]

5. Discussion and Conclusion

The empirical analysis presented in this paper brings together previously disparate literatures in law and

economics, organizational economics and relational exchange to provide a first empirical examination of dispute

resolution under the imminent threat of litigation in vertical exchange relationships. Our unique data allow us to

observe the results of firms' attempts to "work it out" when serious contract disputes arise and to explore the

choice of dispute resolution procedures under different exchange conditions. The picture that emerges from our

analysis is consistent with prior literature on the governance of inter-firm exchange; our study also extends this

prior literature and contributes to broader debates on firm boundaries and inter-organizational exchange.

First, our study serves to counter the received wisdom that the involvement of lawyers necessarily

signals the bitter end of an exchange relationship. We see that even in the event that quite serious disputes

emerge and lawyers get involved, firms manage to avoid litigation and resolve their disputes privately in many

cases. This is particularly true for technically very simple exchanges, where private settlement is relatively

straightforward and avoids the fixed costs and delays associated with litigation; it is also true for the most

complex of exchanges where firms appear to eschew the courts altogether because they realize that court

proceedings are ill-equipped to handle the nuances involved with technically-complex disputes, and firms

instead choose a private forum for dispute resolution.

Second, our study contributes to ongoing debates about the impact of relational history on exchange

partners' behavior. Here we see that a longer history of exchange does not automatically lead to an increased

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willingness to work things out when serious disputes arise (even allowing for the possibility that fewer such disputes reach the stage where lawyers get involved). Longer pre-dispute duration has little impact on the likelihood of litigation in itself; only when cooperative norms develop is litigation less likely, and this effect is strongest when such norms build up over the course of extended exchange. In addition to this link between dispute resolution and the "shadow of the past," we also observe that the "shadow of the future" has a significant effect on the likelihood of litigation, suggesting that firms are indeed forward-looking in their assessments of the costs and consequences of different dispute resolution procedures. As this last point indicates, the results of our study are suggestive of a "discriminating alignment" between exchange characteristics and the choice of dispute resolution procedure, in keeping with the spirit of Williamson's (1991) arguments about the legal underpinnings of different forms of governance.

Our study of course has limitations, the most important being the selection bias inherent in our sample since we do not observe conflicts between exchange partners unless they escalate to the point where lawyers become involved. However, as our supplementary analysis of the timing of lawyer involvement suggests, the most likely bias only strengthens our inference that partners in long-standing cooperative exchange relationships are indeed more able to work things out in private dispute resolution procedures. We also provide evidence that, while the contracts governing the exchange relationships found in our sample are consistent with efforts to reduce the likelihood of litigation through the inclusion of additional contract terms, this does not substitute for the effect of past or anticipated future exchange.

Another limitation of our study relates to its setting in the French civil law system: although a significant fraction of the firms involved in the contracts in our sample are from outside France all of the contracts are subject to French contract law, and litigation, when it occurs, takes place in French courts. Discussions with legal experts lead us to believe that, for the purposes of our research, there are no material differences in the legal rules governing contracts or dispute resolution in the French civil law system from those in the US common law system (Deffains and Kirat 2001). However, accounts of some differences in the propensity to enter mediation

and in the costs and delays associated with litigation suggest that the incentives to settle disputes privately may be even higher in the US system than is the case in our setting (Yelpaala et al. 1986). Thus, although we believe that our results are not dependent on idiosyncratic features of the French legal system, it would be very interesting to replicate the study in a different legal context. Indeed, comparing dispute resolution processes across institutional contexts represents an intriguing avenue for future research; a multidisciplinary approach to this line of research could be particularly worthwhile, as the most insightful results are likely to emerge from studies that engage both the legal and institutional rules that guide dispute resolution, *and* the organizational and cultural contexts in which the disputed exchange relationships take place.

There are also several additional data items that could facilitate refinement and further extension of our study. With more direct measures of the scope and complexity of the actual products and services exchanged, one could avoid a significant simplification in the current analysis, which equates technically-complex contracts with complexity in the products and services being exchanged. Similarly, our measure of asset specificity is quite crude and imprecise – a fact which may account for the general lack of significance of this variable in our empirical analysis. Our view of the 'shadow of the future' is also limited to the time horizon associated with the current contract; we cannot observe the extent to which firms foresee additional exchange opportunities in the future. Better measures would likely strengthen our observed association between the length of the shadow of the future and the likelihood of private dispute resolution.

In sum, while we do not believe that data limitations significantly undermine the contributions of our study, we are conservative in the empirical inferences that we draw and, in particular, stop short of claiming any *causal* link between exchange features and dispute resolution outcomes. Further disentangling of the relationships among exchange content, relational context, contractual governance and dispute resolution mode represents an important avenue for continuing research, albeit one that poses significant data challenges. A research program along these lines holds the potential to provide answers to questions that continue to generate interest and disagreement among organizational and legal scholars, such as: what are the critical

organizational and institutional supports for relational governance? To what extent does relational governance

operate "in the shadow of the law" in inter-firm exchange relationships? What does it *really* mean for exchange

partners to adopt the concept of "contract as framework" (Llewellyn 1931)? How do competitive dynamics

within an industry impact firms' legal strategies (including contract dispute resolution), and how do these legal

strategies, in turn, shape other organizational choices? While we are a long way from establishing definitive

answers to these questions, we believe that our study injects important new evidence into the debates.

In reaching outside of the usual domain of organizational and management research to leverage findings

from law and economics we believe that, not only have we introduced a new perspective on dispute resolution

in exchange relationships, but also highlighted the potential for further collaboration between these disciplines.

We invite others to explore opportunities in multidisciplinary research to illuminate different aspects of

organization and exchange.

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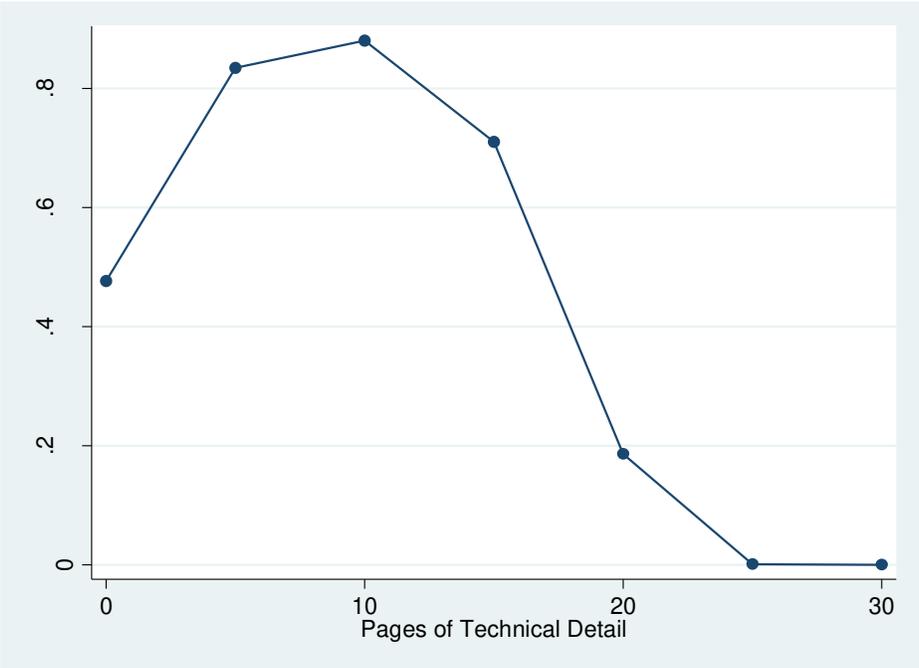
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Figure 1 – Change in Probability of Litigation with Increasing Technical Complexity

Table 1 – Agreement Types and Dispute Resolution Modes

	Number of Cases Ending in…				
	Litigated outcome	Arbitration	Mediation	Negotiated settlement	*Total*
Distribution agreement	22	3	2	9	36
Supply agreement – intermediate products	13	8	1	8	30
Supply agreement – IT	19	1	2	5	27
Supply agreement – other services	7	1	0	1	9
Total	61	13	5	23	102

Table 2 – Settlement/Judgment Terms in Different Dispute Resolution Modes

	Litigated Outcome	Arbitration	Mediation	Negotiated settlement	*Total*
Monetary damages	52 (85.2%)	9 (69.2%)	2 (40%)	15 (65.2%)	78 (76.5%)
Specific performance based on terms of existing contract	12 (19.6%)	8 (61.5%)	4 (80%)	17 (73.9%)	41 (40.2%)
Adjustment of contract terms	4 (6.5%)	4 (30.7%)	2 (40%)	8 (34.7%)	18 (17.6%)
Stated intention to continue exchange	7 (11.4%)	6 (46.1%)	3 (60%)	13 (56.5%)	29 (28.4%)
Total # of disputes in sample (n)	61	13	5	23	102

Notes:
1. Numbers in columns do not add up to 100%: a settlement or judgment typically includes multiple terms, and each cell indicates the frequency of observation of each term in settlements or judgments associated with each dispute resolution mode.
2. Differences of means tests indicate significant differences between litigated judgments and each of the three private dispute resolution modes on all dimensions, and no significant differences among arbitration, mediation and negotiation except for monetary damages, which are more likely with arbitration.

Table 3 – Descriptive Statistics

Variables	Mean	S.D	Range	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Litigation	0.59	0.49	0-1													
2 Technical complexity	9.20	18.63	1-122	-0.25*												
3 Pre-dispute relationship duration	627.4	946.2	0-5771	0.03	-0.03											
4 Time remaining	245.0	551.5	0-2575	-0.52*	0.24*	-0.09										
5 Open	0.34	0.47	0-1	0.00	0.06	0.18	-0.32*									
6 Cooperative norms	0.54	0.50	0-1	-0.38*	0.15	0.06	0.38*	0.11								
7 High asset specificity	0.35	0.48	0-1	0.01	0.33*	-0.07	0.00	-0.18	-0.07							
8 Contract value	2.42	0.66	0.70-4.33	0.09	-0.15	-0.22*	0.06	-0.10	-0.09	0.23*						
9 Total size	7.90	0.83	5.85-10.31	-0.11	0.12	-0.06	-0.02	0.05	-0.02	-0.03	-0.07					
10 Asymmetry	7.66	0.96	5.16-10.28	-0.14	0.14	-0.11	0.01	0.02	-0.01	-0.00	0.00	0.95*				
11 Time trend	8.79	3.42	0-14	-0.20*	0.07	-0.26*	0.18	-0.08	0.21*	0.12	0.13	-0.01	0.03			
12 Time to lawyer	154.0	158.4	0-854	-0.13	-0.00	0.18	-0.09	0.19*	0.04	-0.16	-0.27*	0.06	-0.03	-0.21*		
13 Dispute resolution clause	0.48	0.50	0-1	-0.25*	0.09	-0.16	-0.04	0.29*	0.04	0.35*	0.15	0.02	0.01	0.19	-0.06	
14 Contractual sophistication	4.87	1.75	0-9	-0.12	0.42*	-0.23*	0.26*	-0.35*	0.08	0.64*	0.28*	0.00	0.06	0.18	-0.16	0.20*

* $p < 0.05$

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Table 4 – Litigation and the Shadow of the Past

	Model 1	Model 2	Model 3	Model 4
Technical complexity	0.274 **	0.256 **	0.259 **	0.389 ***
	(0.108)	(0.103)	(0.110)	(0.134)
(Technical complexity)^2	-0.016 ***	-0.015 ***	-0.016 ***	-0.023 ***
	(0.006)	(0.005)	(0.006)	(0.007)
Pre-dispute relationship duration		-0.000	-0.000	0.004 ***
		(0.000)	(0.000)	(0.001)
Cooperative norms			-1.363 ***	-0.166
			(0.367)	(0.468)
Pre-dispute relationship duration * Cooperative norms				-0.005 ***
				(0.001)
High asset specificity	0.327	0.352	0.216	0.343
	(0.322)	(0.322)	(0.340)	(0.362)
Contract value	0.227	0.179	0.152	0.210
	(0.256)	(0.256)	(0.314)	(0.337)
Total size	0.522	0.634	0.957	0.850
	(0.628)	(0.661)	(0.660)	(0.740)
Asymmetry	-0.562	-0.698	-1.050	-1.185
	(0.559)	(0.590)	(0.623)	(0.732)
Time trend	-0.090 *	-0.101 *	-0.078	-0.093
	(0.048)	(0.051)	(0.052)	(0.058)
Constant	1.149	1.674	2.174	3.261
	(1.841)	(1.792)	(1.785)	(2.144)
Agreement Types	Yes	Yes	Yes	Yes
Industry Affiliations	Yes	Yes	Yes	Yes
Wald Chi2	37.06 ***	40.46 ***	44.16 ***	43.21 ***
Pseudo R2	0.308	0.313	0.418	0.509

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; $N = 102$

Table 5 – Litigation and the Shadow of the Future

	Model 5		Model 6		Model 7	
Technical complexity	0.262	**	0.256	**	0.362	**
	(0.116)		(0.110)		(0.121)	
(Technical complexity)^2	-0.014	***	-0.014	***	-0.020	***
	(0.005)		(0.005)		(0.006)	
Time remaining	-0.035	***	-0.036	***	-0.038	***
	(0.009)		(0.010)		(0.012)	
Open	-1.558	***	-1.553	***	-1.588	***
	(0.399)		(0.404)		(0.431)	
Pre-dispute relationship duration			-0.000		0.004	**
			(0.000)		(0.001)	
Cooperative norms					0.824	
					(0.672)	
Pre-dispute relationship duration * Cooperative norms					-0.004	**
					(0.002)	
High asset specificity	0.247		0.303		0.605	
	(0.511)		(0.487)		(0.651)	
Contract value	0.307		0.241		0.214	
	(0.383)		(0.411)		(0.454)	
Total size	-0.055		-0.001		0.007	
	(0.595)		(0.590)		(0.665)	
Asymmetry	0.078		0.027		0.061	
	(0.531)		(0.521)		(0.612)	
Time trend	-0.022		-0.028		-0.033	
	(0.056)		(0.057)		(0.066)	
Constant	0.648		0.914		-0.115	
	(1.783)		(1.812)		(2.115)	
Agreement Types	Yes		Yes		Yes	
Industry Affiliations	Yes		Yes		Yes	
Wald Chi2	48.82	***	47.32	***	39.88	***
Pseudo R2	0.600		0.603		0.646	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; $N = 102$

Table 6 – "Time to Lawyer"

Number of days from first communication between the firms themselves regarding the dispute, and the first meeting between the lawyer and the client firm:

	Mean	Std Dev	Range
Full Sample	160	158	2-854
Cooperative norms=1	161	151	0-854
Cooperative norms=0	145	167	0-786
"Positive" pre-dispute relationship duration > 800 days	236	203	8-854
"Negative" pre-dispute relationship duration > 800 days	36	30	0-98

Table 7 – Robustness Tests: Controlling for Contractual Sophistication

	Model 8		Model 9		Model 10	
Technical complexity	0.391	***	0.576	***	4.540	***
	(0.116)		(0.166)		(1.389)	
(Technical complexity)^2	-0.021	***	-0.031	***	-0.224	***
	(0.006)		(0.008)		(0.066)	
Contractual sophistication	-0.279	**	-0.415	**	-0.589	
	(0.127)		(0.185)		(0.561)	
Dispute resolution clause	-1.230	***	-1.680	***	-18.80	***
	(0.408)		(0.549)		(5.470)	
Time remaining					-0.199	***
					(0.054)	
Open					-6.025	***
					(2.034)	
Pre-dispute relationship duration			0.005	***		
			(0.001)			
Cooperative norms			-0.034			
			(0.439)			
Pre-dispute relationship duration * Cooperative norms			-0.006	***		
			(0.001)			
High asset specificity	1.152	**	1.362	**	6.327	***
	(0.445)		(0.549)		(1.721)	
Contract value	0.600	**	0.770		3.545	*
	(0.283)		(0.356)		(1.907)	
Total size	0.288		0.761		0.710	
	(0.609)		(0.805)		(1.601)	
Asymmetry	-0.294		-1.386	*	3.150	*
	(0.534)		(0.733)		(1.540)	
Time trend	-0.075	*	-0.083		-0.119	
	(0.047)		(0.058)		(0.148)	
Constant	1.431		6.781	**	-21.35	**
	(2.086)		(2.425)		(6.293)	
Agreement Types	Yes		Yes		Yes	
Industry Affiliations	Yes		Yes		Yes	
Wald Chi2	53.29	***	48.67	**	32.12	***
Pseudo R2	0.402		0.619		0.836	

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$; N = 102