

Formal and Informal Contracting in Interfirms Relationships

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Abstract: In this paper, using a large database concerning more than 3 400 strategic relationships in force between French firms in 2003, we study the way they govern their relationships. More precisely, we show that depending on the characteristics of their relationships observed governance structures features combined relational as well as formal elements. Those two dimensions might be complement or substitute depending on characteristics and expected results of the relationships as well as reputation of contracting partners. Our results thus suggest that competing theoretical frameworks focusing on informal agreements or on formal agreements might miss a part of the story. Our results, by showing how those dimensions might complete or substitute each other shed new light on previous empirical works on this issue.

JEL codes: L2

Keywords: Reputation, Hostage, Formal contract, Relational contract.

1. INTRODUCTION

Recent developments of the theories of the firm pointed out the fact that more than market vs. hierarchies dichotomy, many relationships appear to be hybrids, neither markets nor hierarchies but a mix of features characterizing both polar forms (Powell 1985; Baker-Gibbons-Murphy 2002; Ménard 2008). This theoretical evolution is concomitant with empirical facts. A huge majority of firms have relationships with others. Most of them are engaged in many relationships or belong to networks, blurring the frontiers between firms and markets (Baker-Gibbons-Murphy 2005).

When activities are not integrated, firms look for coordination devices to organize their activities. Such organization entails several dimensions such as the necessity to secure the relationships, especially when asset specificity is at stake (Williamson 1996) as well as promoting cooperation and learning and adaptation of the relationship (Gibbons 2005). Those two objectives might be antagonist (Crocker-Reynolds 1993, Saussier 2000) and might lead to vertical integration when a transaction clearly needs secure and adaptive mechanisms.

The transaction costs view emphasizes those difficulties to achieve those two dimensions of inter-firms relationships are related with contract incompleteness and unverifiable dimensions of transactions (Williamson 1985, Hart 1995). When what is expected from partners is not clearly contractible then rooms for opportunistic behaviors open, leading partners to have low level of trust in the success of their relationships. In contrast with this transaction costs view, advocates of relational exchange theory (Macneil 1980, Heide and John 1992, Uzzi 1997) emphasize trust as a critical determinant to foster and maintain value-enhancing relational exchange. Partners, by developing mutual understandings and confidence, will facilitate adaptation of the relationships. Those two contrasted positions lead scholars to believe that the stream of research in interfirm relationships continues to be guided by the polar viewpoints of the 'economic man' and 'heroic man' that may reflect extreme caricatures of human nature (Lado, Dant and Tekleab, 2008).

In this paper we took another path. Previous empirical studies clearly showed that exchange relationships are commonly characterized by trust and opportunism and

governed by a combination of formal and informal mechanisms (Poppo and Zenger 2002, Corts and Singh 2007, Ménard 2008). In other words, contractual incompleteness might be completed by relational elements. Or, and that is clearly different, relational element might be reinforced by contractual features. There are only few empirical studies on this aspect and they are, in most of cases, not conclusive (Lazzarini et al. 2004, Dyer and Singh 1998). Thus we address the following research questions: (1) Why and to what extent firms combine formal and informal devices to govern their interfirm relationships? (2) Are those two elements substitutes or complements?

We empirically test the interaction between formal and informal contracting using a large database concerning more than 3 450 strategic relationships in force between French firms in 2003 in trade and services relationships. We show that observed governance structures features combined relational as well as formal elements. We also find that those two dimensions might be complement or substitute depending on characteristics of the relationships. When the relationship does not entail any non-contractible cooperation or investments, formal mechanisms, mainly contract provisions might be efficient and not very costly to implement. But as soon as such investment and cooperation are involved, informal agreements, mainly through the use of reputation mechanism might be useful to secure and adapt the relationship. Furthermore, a combination of the two mechanisms might even appear useful depending on the reputation level of the two contracting parties and the need to equilibrate hazards. We stress the fact that reputation of the contracting parties reinforced their ability to implement relational coordinating devices. But when the reputation level is not the same for both parties, formal and informal elements might be combined advantageously.

Our results thus suggest (1) that for a better understanding of interfirms' relationships characteristics of the relationship as well as the participants appear to be crucial elements and (2) that formal processes cannot be understood without consideration of their associated informal agreements. Neglect of those two dimensions might explain contradictory results in previous empirical studies giving advantage to the economic man or heroic man view. Our analysis also provides a fresh view of the complement vs. substitute debate concerning the use of formal and informal devices to govern interfirms' relationships.

The paper is organized as follows. Section 2 presents theoretical framework and hypotheses and section 3 presents data and methods. Section 4 presents results and the last section discusses and suggests future issues on the research agenda.

2. THEORY AND HYPOTHESES

Contracts and Relational contracting

Formal Contracts

It has long been recognized that contracts play a crucial role in order to secure inter-firms relationships. Considered as agreements under which two parties make reciprocal commitments, their role is to frame and perpetuate firms' relationships providing rules and defining mutual obligations. They are also a mean to forecast possible hazards, to enforce agreements and to solve eventual conflicts. This enforcement ability is due to their sanctioning dimension. If one of the parties reneges, the other could react using enforcement mechanisms (enacting clause) or threatening to apply sanctions and penalties (penalty clauses).

Obviously, contracting is costly and difficult. To achieve properly its coordination and enforcement roles, contracts have to be precise enough, based on verifiable provisions (*i.e.* a formal contract must be specified *ex ante* in terms that can be verified *ex post* by third party). Nevertheless, anticipating contingencies and building up incentives to enforce agreements is not an easy task. Especially considering economic actors with bounded rationality. Because formal enforcement requires courts or third parties to verify that a breach has occurred (Chakravarty and MacLeod 2006), this could be also problematic if imperfections also exist outside of the contractual relationship (*i.e.* courts and third parties might have a bounded rationality or might be less informed than contracting parties – see Hart 1995). The bounded rationality assumption (Simon 1957, Williamson 1985) strengthens the cognitive limitations that make the contract incomplete. According to the transaction cost perspective, formal contract will be difficult to use in order to secure the relationship when this relationship entails non-

contractible dimensions. This is the classical hypothesis that may lead contracting parties to avoid formal contract and to integrate the transaction.

In its most general form, the decision to contract represents a standard discrete choice problem: Parties will choose to contract if the expected gains (net of transaction costs) from doing so are greater than those of organizing the transaction in some other way. It could be possible than in precise circumstances, economic actor would prefer to organize their relationship without any contract at all but without any integration too (Masten and Saussier 2000). In this perspective, relationships could be based on other instrument, more informal.

Relational contracting

Relational contracts between firms might help circumvent difficulties in formal contracting. Such contract can be based on outcomes that are observed by contracting parties only but not verifiable by third parties. A relational contract thus allows the parties to utilize their detailed knowledge of their specific situation and to adapt to new information as it becomes available (Baker & al 2002). Nevertheless, because third parties cannot enforce such contracts, it must be sustained by the value of the future relationships. This value must be sufficiently large for the parties not to renege and the contract to be self-enforced.

In such a view, trust between parties is “calculated” and is not coming from contractual provisions but instead from a rational calculus determining, depending of the value of future cooperation, if parties have incentive to renege or not. Relational contracting issues are usually addressed through game theory, considering a trigger strategy in which the parties begin by cooperating and then continue to cooperate unless one side defects, in which case they refuse to cooperate forever as « trust » disappear (*i.e.* they shift to a formal contract agreement considered as an outside option). The relationship is supposed infinitely repeated.¹ If we note X the value of the cooperation in the relationship, X_0 the best alternative for the firm in case of breach with

¹ The way the firm valorizes future can be reinterpreted so that the game is not infinitely repeated but instead concludes at an uncertain date. As pointed out by Baker & al 1994, you can suppose that after each period is played a coin is flipped, and that if heads occurs then the game end.

$X_o < X$, Z the value of reneging, C the cost incurred by reneging on the relational agreement and r the way firm valorizes the future (*i.e.* discount rate) with $0 \leq r \leq 1$ then a firm will cooperate and follow informal agreement if the value of the cooperation strategy ϕ_c is higher than the non-cooperation gains ϕ_{nc} with:

$$(1) \quad \phi_c = X + rX + r^2X \dots = X \left(\frac{1}{1-r} \right)$$

$$(2) \quad \phi_{nc} = Z - C + rX_o + r^2X_o + \dots = Z - C + \left(\frac{r}{1-r} \right) X_o$$

By normalizing outside option X_o to zero, it naturally comes that $\phi_c > \phi_{nc}$ depending of r and Z such as $\phi_c > \phi_{nc} \Leftrightarrow r > \frac{Z - X - C}{Z - C}$.

Hypothesis 1. Informal contract will be difficult to use in order to govern the relationship when the contracting parties do not valorize the future enough.

This is the classical hypothesis reached in a relational contracting perspective.

The sociological approach of relational contracting also underlines the fact that interorganizational repeated exchanges are embedded in social relationships. The enforcement of obligations, promises, and expectations occurs through social processes that promote norms of flexibility, solidarity and information exchange (Poppo and Zenger 2002). Thus, in the sociological view, the “trust” is noticeably different. It is no more “calculated” but considered as an intrinsic characteristics that becomes embedded in a particular relationship. But, in spite of the fact that sociological and economic approaches do not share the same vision of trust, both of them argue that repeated interactions enhance trust between parties. As a consequence, the final result of relationally-governed relationships is still the same; that is the promotion of cooperative behavior.

Formal and relational contracting mix

Previous studies

The question we are interested in is now to consider the possibility to use at the same time both formal and informal devices in order to govern the relationship. Formal and informal arrangements have been considered as substitute for a long time (*i.e.* the presence of one of these two governance modes makes the presence of the other useless). For example, Sullivan and Peterson (1982) argued that interpersonal ties between business leaders are to a large part substitute to the redaction of complex contracts and Granovetter (1985) notes that formal institutions “do not produce trust but instead are a functional substitute for it”. In the same spirit, Sobel (2006) concludes, in his theoretical study on the choice between formal and informal enforcement, that firm’s “loyalty” is inversely related to the effectiveness of formal enforcement. Such a substitution is due to the enforcement capacities of informal institutions. These later, defined as trust and social norm, are a way to enhance cooperative behavior without the costs and complexity associated with formal agreements (Dore 1983, Gulati 1995, Powell 1990, Uzzi 1997). In other words, if two partners mutually trust each other, the need to contractually specify reciprocal commitments and mutual obligations will decrease, and even disappear. So they do not need a contract to enforce their agreements. But if they have signed such a contract, trust is useless because they could rely on the first to prevent opportunistic behavior and to penalize contract renegeing.

Other authors emphasize a starker substitution perspective where the presence of the formal institutions [respectively the informal one] is not only useless but all the more dangerous for the final expected result, that is to say, the development of cooperative behavior (Macaulay 1963, Bernheim and Whinston 1998). Many contributions highlight the pernicious effect of formal institutions and formal controls on cooperation. According to this view, the intensive use of control mechanisms contractually provided tends to destroy trust between partners (Lorange and Roos 1992, Goshal and Moran 1996). Lazzarini, Poppo and Zenger (2001, 2004) refer to these two kinds of substitutability as, respectively, weak and strong substitution.

On the other hand, following the intuition of North², a recent and dynamic literature about the possible complementarities between formal and informal approach emerged. According to this literature, the use of one is compatible with the use of the

² “Formal rules can complement and increase the effectiveness of informal constraints. They may lower information, monitoring, and enforcement costs and hence make informal constraints possible solutions to more complex exchange” (North, 1990, pp. 46-47).

other. Even more, their combination can improve the overall performance of relationships (Poppo and Zenger, 2002). As Lazzarini et al. (2004) argue, exchanges are governed by a set of formal and informal institutions, which are deeply intertwined. Informal elements are legitimate by the existence of formal ones. According to such perspective, the foundation of the complementarities between relational and formal governance is the contractual incompleteness. If a contract could perfectly and clearly specify all future contingencies, there would be no need for informal agreements. Formal incentives could enforce any situations. From that perspective, the complementarities view invites us to reconsider the role of contracts in inter-firm relationships. More than pure incentive mechanisms, contracts have to be viewed as “means of establishing procedures for adapting exchange and resolving disputes” (Crocker and Masten, 1991, p.95); more than a complement, contract could be considered as a condition of relational governance and reputation to be effective (Lazzarini et al. 2007).³ As previously emphasized, a similar idea is defended by Baker, Gibbons and Murphy in their model of relational contracting (1994, 2002). According to them, the relational governance is made possible by the existence of the formal contract. This is because formal contract develops a long-term commitment between partners and, at the same time, because it provides clauses that specify punishments limiting the gains from opportunistic behaviour and, as a consequence, promoting cooperation in the long run.

In any case, defendants of substitutability or complementarities share the idea that the answer to this debate is still ambiguous (Corts and Singh 2004) and is to a certain extent, an empirical question. In fact, “the interaction between formal and informal institutions is too complex to accommodate a unique pattern” (Lazzarini et al. 2004). Nevertheless, the ambiguity of theoretical and empirical works reinforces the idea that the real question is not to determine *whether* formal and informal modes of governance structure are substitute or complement but indeed *when* they are substitute or complement (Corts and Singh 2004).

³ “The process of contracting may itself promote expectations of cooperation consistent with relational governance”, Lazzarini, Poppo and Zenger (2007, p. 16).

Our perspective

In our perspective, formal and relational contracting devices might be both used in order to govern the relationship. Furthermore, they can be substitutes or complements depending on the situation. The way parties might govern their relationship using formal agreement will impact on their ability to implement informal mechanism. This is clear looking at equation (2) defining the gain of renegeing informal agreement. X_o representing outside option for the firm is simply what it can achieve using only formal mechanisms for its future relationships with the same or with another partners. Thus, the more efficient formal mechanisms to govern the relationships, the more important the gain to renege (the gain of cooperation remains unchanged), the less easy it is to implement informal mechanisms. In other terms, if formal contracts are easy to implement and efficient, then there is only few gains to implement a relational governance structures. Those gains are not high enough to avoid renegeing strategies.

Hypothesis 2. Formal contract and relational contracting will be use conjointly only for certain values of parameters r , X_o and Z , making cooperation under relational contracting sufficiently attractive compared to formal contract.

Including other considerations, like reputation and the need to equilibrate hazards in the relationships might also explain the use of both mechanisms.

Reputation and Hazard Equilibration

Reputation

As often emphasized by literature, a degree of trust is a critical ingredient in every economic relationship (Bolton and Ockenfels 2006). According to the possible distinction between economic and sociological approaches previously tackled, we saw that this trust might be constructed by the way contractual provisions are chosen (*i.e.* “calculated” trust) or might pre-exist independently of the contract because of the reputation of the actors. In the same way that cooperation is the resultant behavior of relational contracting in the two approaches, they also share the same view of reputation. As Poppo and Zenger (2002, p. 710) note “...while the mechanism may differ slightly, both economists and sociologists emphasize that reputations for trustworthy

behavior are rewarded and reputations for untrustworthy behavior punished in the broader network of potential exchange partners.”

In other words, reputation encourages players not to defect and therefore reduces the threat of opportunistic behavior. As a consequence, a firm will be more confident with a reputed partner and, reciprocally, it will be trustworthy if it also has the reputation to be reliable.

The better way to acquire such a reputation for firm is to behave honestly, in order to conquest the confidence and the esteem of other firms.⁴ According to this view, its reputation depends on its past behavior. It will have a good reputation if other firms share the idea that it always respects agreements and never reneges on contracts.⁵ Reputation might be interpreted as a coordinating device sometimes more efficient than legal institutional mechanisms in the promotion of cooperative behavior (Bakos and Dellacorras 2003), especially because norms and reciprocal obligations supporting relational governance transcend contract provisions and economize on the cost to use legal system (Dore 1983). By opposition to contract, reputation embodies the informal dimension of interfirms’ relationships. Nevertheless, like contracts, reputation to be a perfect mechanism to govern interfirms’ relationships needs to evolve in an environment without any information imperfection. Reputation as a way to enforce (informal) contractual agreement is only one incomplete device. More precisely, reputation will impact on the cost of reneging an informal agreement, C , by reducing potential gains coming from other future interfirms agreements. In that sense, reputation can be analyzed as a “hostage” given by one party to secure the relational agreement. Following from the above arguments, we hypothesize:

Hypothesis 3. Relational contracting will be more easily implemented and sustainable when reputation is at stake as a hostage.

Nevertheless, as pointed out by transaction cost economics (Williamson 1983) giving a hostage to secure a relationship is just replacing one hazard by another one –

⁴ Remind that reputation is a question of esteem, not of fame. If the latter refers to short-term considerations, esteem is long and difficult to build.

⁵ In the same spirit, the relational contract theory emphasizes the fact that partners’ trust is based on past behaviours when the relationship is repeated through time (Hart and Holmström 1987, Baker, Gibbons and Murphy 1994, MacLeod 2007).

the party it was supposed to secure might steal hostage. Then we might expect the governance structure put in place to govern the relationship equilibrates hazards.

Equilibrating hazards

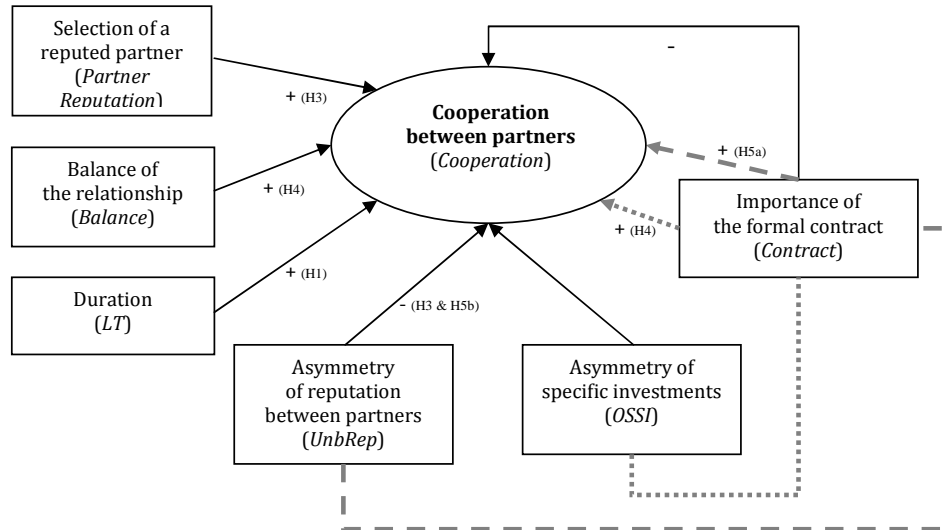
Transaction cost economists emphasizes the role of contract terms in preventing wasteful efforts to redistribute existing surplus (Masten-Saussier 2000). This form of opportunism includes efforts to evade performance or to force a renegotiation of a contract's terms by imposing costs on one's trading partner. Because the incentive to engage in such efforts is likely to be related to the *ex post* distribution of contractual surplus — parties greatly disadvantaged by the terms of a contract are more likely to evade or renegotiate a previous deal — contracting parties will seek to design contracts and more broadly governance structure such as to divide *ex post* rents «equitably» (Masten 1988), keep the relationship with the agreement's «self-enforcing range» (Klein 1992), or, equivalently, achieve what Oliver Williamson has called «hazard equilibration» (1985, p. 34). Considering this equilibration when one of contracting parties is reputed and clearly chosen as a partner because of its reputation, we might expect to see an equivalent hostage given by the other party. This might take the form of a partnership between two reputed partners. Equilibration then takes the form of an equivalent reputation hostage that is given by both partners. It can also, when only one party is reputed, take the form of an unbalanced formal contract at the advantage of the reputed partner for him to protect its reputation. This leads us to the following propositions:

Hypothesis 4. Relational contracting will be more easily implemented if hazards are equilibrated.

Hypothesis 4a. When only one of the contracting parties put its reputation as a hostage we expect the formal part of the governance structure to be unbalanced in favor of the reputed firm.

Hypothesis 4b. When both parties put their reputation as a hostage we expect the relationship to be governed through relational contracting mechanisms.

Figure 1. Schema of empirical model



DATA AND METHODS

Research Procedure and Sample

Data were obtained through a survey of strategic interfirms' relationships in force in France in 2003 named Survey of Interfirms Relationships (SIR)⁶. The survey was conducted by the National Institute of Statistics and Economics Studies of France over French firms that were randomly selected among the sample of another survey, larger and more frequent: the Annual Survey of Firms (ASF).⁷ This later focuses on firms having more than 20 employees and/or more than 5 millions of sales. It includes 22 000 firms. Finally, the sample of the SIR retains 5 220 firms responding to a compulsory questionnaire, covering 25% of the ASF sample. This explains a very satisfying rate of survey response, varying between 63 and 83% depending on the sector.⁸ Thus, the

⁶ "ERIE, Enquête sur les Relations Inter Entreprises", Institut National de la Statistique et des Etudes Economiques, 2003.

⁷ "EAE, Enquête Annuelle sur les Entreprises", Institut National de la Statistique et des Etudes Economiques.

⁸ Firms who do not answer the questionnaire preferred to pay the fine associated with the no response.

survey finally deals with 3 904 responses that can be used. Among those 3 904 respondent firms, only 1 492 were kept in our final sample: those 1 492 firms are the only ones to declare strategic relationships with other firms. This might be surprising knowing that 3 business firms over 4 have at least one relationship with other firms, representing 20% of sales and 50% of purchases incorporating in production processes. The explanation comes from the restriction imposed by the survey: firms have to describe only relationships that are considered as strategic. For this reason, all the simple spot agreements without any kind of specific investments were excluded.⁹ As a consequence, our data focus on a particular kind of interfirms' relationships that involve specific investments.

To test for a potential response bias, we compared the level of sales and strength obtained in the initial population (sample of ASF) and in our final kept sample. Results appear very similar. That is why we feel confident in the fact that our sample is not strongly biased. We also operate a change of the unit of analysis. Hence we obtain a database of 3 719 different interfirms relationships corresponding to the relationships in which our 1 492 respondent firms are engaged in.¹⁰

Measurement

Questionnaire was essentially qualitative. The questions asked emphasize several points such as the type of the relationships, the sector of the respondent, the reasons of the choice of a specific partner and its nature, the balance of the relationship and its essential characteristics. The questionnaire also contains some quantitative data such as the levels of sales and strength of the respondent, its number of relations and the share of its sales due to interfirms' relationships. Table 2 presents correlations of measures use in the econometrical analysis. More precise description of variables and descriptive statistics are presented in appendix 1.

⁹ Relationships excluded from the survey field: simple purchases and/or sales relationships, strictly financial relationships and relationships with temping agency.

¹⁰ Each firm can describe at most 12 strategic relationships.

Relational agreements and Cooperation

As previously said, whatever the reasons (calculated or pre-existing trust), the resultant behavior of relational-governed exchange is cooperation between partners. Nevertheless, cooperative behaviors cannot be contractualized. They rely on the willingness of the two partners. Moreover, the cooperation between partners is dependent on mutual understandings and norms which emerge during the relationships. Firms cannot decide *ex ante* to cooperate *ex post*. As a consequence, the level of cooperation that is emerging during the relationships is the consequence of previous choices and can be viewed as a measure of informal governance. In our study, we used variable *Cooperation* that is representing the fact that the respondent firm believe that cooperation is a crucial dimension of its relationship. This way to measure the relational dimension of interfirms agreements is consistent with previous measurements which all integrates cooperation in their empirical analysis (Macneil 1978, Anderson and Narus 1990, Poppo and Zenger 2002).

Formal Agreements and Contract

The more an agreement is formal, the more central the contract is. To take care of the formal dimension of contractual agreements we used variable *Contract* that is reflecting the fact that contract appears for the respondent firm a central element of its relationship. It is crucial to note immediately that the variables *Cooperation* and *Contract* are not perfectly correlated ($\rho = -0,11$). Responses, in the database, present the four cases imaginable: neither *Cooperation* nor *Contract* are considered as essential element of the relationship; only *Cooperation* is considered important; only *Contract* is considered important and *Contract* and *Cooperation* are both considered as essential. This means that our constructed variables are defined such that, formal and informal contracting are possibly complement or substitute. Table 1 shows the distribution of those four cases.

Table 1. Distribution between the four cases

	The relationship is characterized by an important cooperation between partners.	The relationship is not characterized by cooperation between partners.
The contract is a central element of the governance structure	338	1 328
The contract is not a central element of the governance structure	1 606	487

Balance

As we said in the theoretical framework, contracting parties will seek to design contracts and more broadly governance structure such as to divide ex post rents «equitably». The necessity to equilibrate hazard is a prerequisite to develop relational agreement. According to this argument, we logically expect to observe causality between a balanced situation and the development of closer ties between parties. Then it is critical to have the possibility to control the balance of the relationship. The questionnaire allows for this possibility by asking to respondents if they consider the relation balanced or unbalanced. The variable *Balance* is equal to 1 when respondent firm answered its relationships is balanced and 0 otherwise.

We used another variable to control the balance of the relationships in terms of risk sharing. *RiskSharing* is equal to one if the respondent firm answered its relationship is equitably sharing the risk; 0 otherwise.

Specific Investment

Transaction cost economics commonly emphasizes that specific investments are at the source of contractual hazard. In our data, every relationships described involve specific investments. It legitimates the fact that we will also focus on the reasons why a particular partner is selected. In fact, specific investment explains the critical

importance of parties' identities in a "world of neoclassical contracting" (Williamson 1991). As soon as a relationship needs specific asset, firms will be watchful to select reliable partner in order to develop closer ties. In fact, in such circumstances, the continuity of an exchange becomes vital to its effectiveness (Poppo and Zenger 2002). An interesting distinction is established in our data: respondent firms can precise if involved specific investments are symmetric or not. Hence we define a variable *OSSI*, for One-Side Specific Investment, equal to 1 when those investments are asymmetric and 0 otherwise.

Reputation

Relational contract theory emphasizes reputational concerns of the parties as a critical ingredient enhancing cooperation. Indeed, as we suggested in our theoretical part, reputation will impact on the cost of reneging on an informal agreement. To valorize the on-going relationship and in order to increase the possibility to develop new others, firms will behave cooperatively. Doing this, they will do their best to develop and keep a good reputation (that is to say a reputation of high reliability). The importance of reputation can also be emphasized using a transaction cost point of view. In fact, in order to equilibrate hazard, reputation can be used as a hostage. The failure of the relationship can vitiate the reputation of parties. So, when a reputed firm begins a new relationship, it puts its reputation as a hostage and does not want to lose it. A reputed firm will tend to protect itself by choosing a reputed partner as well or by contractually protect its reputation. For those reasons, the selection of a reputed partner could appear as insurance that will ease the implementation of relational ties. We are taking into account this possibility with our variable *Partner Reputation* taking value 1 if the partner is selected by the firm according to his reputation; 0 otherwise. It is important to note that empirical works on reputation are very difficult to pursue, for the most part because reputation stays difficult to assess. Banerjee and Duflo (2000) proposed to use three indicators that are the age of the firm, its certifications and its previous experience (principally with the same partners). As we mentioned in our theoretical part, characteristics of both parties are important to understand the implementation of relational agreements. That is why in order to assess the reputation of the respondent we created variables concerning their size, age and their number of

on-going relationships. On the basis of those variables, we built a variable dedicated to represent the reputation of the firm that is responding (*Respondent Reputation*). By crossing those two reputation variables, we also built a variable of the asymmetry of parties' reputation *UnbRep* (for Unbalanced Reputation) taking value 1 when only one of parties is reputed and 0 otherwise.

Duration

The time duration of the relationships is also a key ingredient to foster and maintain relational agreement. According to a relational exchange perspective, closer ties, norms and mutual understandings will be enhanced by long term agreement. In order to test this classical hypothesis, we use a duration variable (*LT*, for Long Term) equal to 1 when the duration of the relationship is superior to five years and equal to 0 otherwise.

Controls

A large part of the observe variance in the way interfirms agreements are shaped can be explained by differences in firms' and sectors' characteristics concerned by the relationships. In order to control those potential differences, we introduced several variables concerning the function (*function*), the activity sector (*sector*), the type of the transaction (*type*), the size of the respondent firm (*size*), its sales value (*sales*), its experience (*experience*) and its share of sales due to relationships (*share*).

Method

To assess the effects of the independent variables on the likelihood of a relationship to be characterized by a tight cooperation between partners, we used a probit model. Our empirical model requires observing the effects of several dimensions on the relational governance that is the selection of a reputed partner (*Partner Reputation*), the importance of the contract (*Contract*), the foreseeable duration of the relationship (*LT*) and the balance (*OSSI*, *Balance* and *UnbRep*). Results of this first

regression are presented in Model 1. In Model 2, we run the same regression by including some control variables. Thereafter, cross variables were added in Model 3 in order to refine the analysis. Remind here that we do not know *ex ante* if formal contract and relational governance are complements or substitutes (i.e. cooperation emerge or not *ex post*; contract is chosen *ex ante*), we choose to cross the variable *Contract* with variables embodying balancing problems. Then we study the effect of the interaction between the importance of a formal contract with one-side specific investment and with the asymmetry of reputation. In model 4, we added dummy variables for functions and sectors concerned with the relationships. The aim is to grasp eventual effects of generic situations where relationships are embedded in.

Thus, the specification of the general econometric model is:

$$\begin{aligned} Cooperation_i = & \alpha \cdot reputation_i + \beta \cdot Contract_i + \gamma \cdot LT_i + \delta \cdot Balance_i + \theta \cdot Ossi_i \\ & + \lambda \cdot Unbrep_i + \phi \cdot X_i + \varepsilon_i \end{aligned}$$

With i ($i = 1$ to 3 719) the relationship considered, X_i a vector of control variables and ε_i the error term.

Our data also conducted us to deal with endogenous variables problems. In fact, the weight of the contract in the relationship and the level of cooperation could be endogenously determined, as well as the balance of the relationship. Unless we consider the cooperation between partners as the last time of the sequence, the weight assigned to contract could be determined by the willingness to develop closer ties in the future. In the same idea, this willingness could explain efforts made by firms to equilibrate their relationships. To tackle this issue, it is necessary to identify possible endogenous variables and to instrument them by running two stage least square regressions. In order to identify endogenous variables, we used the methodology proposed by Nakamura and Nakamura (1998). The variables *Contract* and *Balance* are estimated in a first step, using exogenous variables of our models and instrumental variables. Residuals from the estimate are then incorporated into the *Cooperation* equation in a second step. The variable is supposed endogenous when the residuals from the first step estimate appear significant in the *Cooperation* equation, meaning that there is a link between the variable considered and the residuals of the *Cooperation* equation, suggesting the presence of endogenous variables. According to this test, only the variable *Contract*

appears endogenous. In Models 1a to 4a, we run the same regressions than in Models 1 to 4 by using a two stage least square analysis. The instrumented variable is the variable *Contract*. Table 4 presents models that use this method (and table 5 presents the equation of the estimation of the instrumented variable in Appendix 3).

Thus, the specification of the refined econometric model is such that:

$$\begin{cases} Cooperation_i = \alpha_1 \cdot reputation_i + \beta_1 \cdot Contract_i + \gamma_1 \cdot LT_i + \delta_1 \cdot Balance_i + \theta_1 \cdot Ossi_i + \lambda_1 \cdot Unbrep_i \\ \quad + \phi_1 \cdot X_i + \varepsilon_i \\ Contract_i = \alpha_2 \cdot reputation_i + \gamma_2 \cdot LT_i + \delta_2 \cdot Balance_i + \theta_2 \cdot Ossi_i + \lambda_2 \cdot Unbrep_i + \phi_2 \cdot X_i + \pi_{2i} \cdot Z \\ \quad + \varepsilon_{2i} \end{cases}$$

With Z a vector of instrumental variables.¹¹

RESULTS

Tables 3 and 4 present the results of our estimations. As previously said the first model only includes the main independent variables (Model 1), the second one incorporates control variables (Model 2), the third introduces cross-variables (Model 3) and the fourth and last takes into account the possible differences due to different functions and sectors (Model 4). Model 1a to 4a run the same regressions by previously instrumenting the variable *Contract* (identified as endogenous).

What factors encourage or discourage cooperation?

We begin by examining factors that could, according to our hypotheses, promote cooperation between parties. We thus observe the effect of the selection of a reputed partner (Hypothesis 3), the commitment on the long run (Hypotheses 1 and 2) and the balance of the relationship (Hypothesis 4). The results show strong support for all our hypotheses. Consistent with Hypothesis 1, parties seem to cooperate, that is to say to develop relational governance, when reputation is at stake as a hostage. This suggests that renegeing would be interpreted as a bad signal by other market participants and it would reduce the potential gains coming from other future agreements. If firms valorize the future enough, they will be watchful on their reputation. For this reason, as we noted

¹¹ To instrument the variable *Contract*, we used two other variables: *Long Term Contract* and *Exclusive Contract*. The variable *Long Term Contract* takes the value 1 when the respondent firm select a particular partner because it knows that they will redact a long term contract; 0 otherwise. The variable *Exclusive Contract* takes the value 1 if partners have signed an exclusive contract.

earlier, reputation can be analyzed as a hostage given by one party to secure the relationship. Here, results show us that the *ex ante* selection of a reputed partner will favor *ex post* cooperation. This result stays significant ($p < 0,001$) all over the successive estimations. This result is consistent with relational contract theory (Baker et al. 2002) and social theorists of the relational exchange theory (Gulati 1995, Uzzi 1997) emphasized in our theoretical part. The effect of duration also finds some support. Consistent with Hypothesis 1, firms committing on the long run are more likely to cooperate; our successive models confirm the link between the existence of relational contract and the duration of the relationship. The results concerning variables *Balance*, *OSSI* and *RiskSharing* suggest that the balance of the relationship is also an enhancing factor of relational governance. We find a positive effect for balanced situation and equitable sharing of risk on the ability of parties to cooperate. At the opposite, the presence of an asymmetric specific investment (embodied by the variable *OSSI*), which can involve an unbalanced situation, has a significant and negative impact on the likelihood of cooperation. This is consistent with our theoretical part. Cooperation tends to be easier when relationships are considered balanced by respondent firms. On the other hand, results show weak support for Hypothesis 5b. Considering that the relationship will be governed through relational contracting mechanisms when both parties put their reputation as a hostage, we expected to see a significant and negative effect of the variable embodying the asymmetry of reputation. If signs are effectively negative in every models, results are no significant.

It is interesting to note that the addition of dummy variables to take into account the different functions concerned by relationships (*Function*), as well as the different types of the relationships (*Type*) and sectors of the respondent firm (*Sector*) do not change the signs and significances of all coefficients. This consistency of results suggests that the link between our independent variables and the cooperation is weakly related to the more general environment of the concerned relationship. It is also providing some confidence that our findings are robust.

Substitutes or complements?

A way to give a partial¹² answer to the question of complementarity or substitutability of formal contract and relational governance is to look at the effect of contract on the cooperation. The direct and simple effect argues in favor of the substitutability view. In fact, we observe a negative coefficient for the contract variable suggesting that the more the contract is considered as the central element of parties' relationship, the less firms are likely to use relational governance.¹³ But, as we argued in our theoretical approach, this question needs to be qualified by taking into account characteristics of both firms and of their relationships. More precisely, we examined whether using formal contract may be in order to equilibrate hazard is accompanied by a better likelihood to develop relational-governed exchange between parties. To tackle this issue, we introduced cross-variables of formal contract and the asymmetry of specific investment and of formal contract and the asymmetry of reputation level. If our unbalanced reputation variable is still fruitless in our predictions, the cross variable of the latter and the contract variable is interestingly significant. The significant and positive sign appearing in Model 3 appears consistent with Hypothesis 5a. Results suggest that a contract considered as a reference point associated with an asymmetric reputation between partners allow them to develop cooperation. Such a result is essential in two aspects. First, it gives a possible explanation to numerous cases of firms (present in data), which declare to cooperate tightly while considering contract as a crucial reference for coordination – this might be explained by the fact that cooperation needs a balanced agreement and contract with secure provisions, leading partners to consider it as a central element is needed in order to equilibrate hazards and to develop cooperation. Second, it opens the way for considering formal and informal contracting as complement instead of substitute, depending on the fact that the relationship is balanced or not. In fact, it confirms our intuition of the possibility to use contract in order to equilibrate hazards due to initial unbalances between partners: when only one of the contracting parties put its reputation as a hostage we expected the formal part of the governance structure to be unbalanced in favor of the reputed firm in order for

¹² See Athey and Stern 2001 for a complete review of the conditions needed to test for two variables to be substitute or complement.

¹³ This is not an obvious result as previous works emphasized that the formal part of the relationship (the contract) might help the relational part to be applied, for example by specifying over performance contracts for defection to be costly (Iossa-Spagnolo 2008) or easily sanctioned (Masten 2000).

parties to cooperate and enter into a relational agreement. A same result is supported (significant and positive coefficient) and a same reasoning is possible (equilibrating hazards) for the cross variables between the formal contract and the presence of an asymmetric specific investment.

As we precised previously, the variable *Contract* is instrumented in Models 1a to 4a. Results are, here again, consistent with the major part of our hypotheses. The selection of a reputed partner continues to promote cooperation between parties as well as the commitment of parties on the long run. The effect of balance and the need to equilibrate hazards are also still significant. Therefore, we do not observe a loss in significance of the variable *Contract*.

DISCUSSION AND CONCLUSION

Discussions

When activities are not integrated, firms coordinate themselves to organize those activities, having the choice between formal and informal agreements. Our empirical results generally corroborate our preliminary intuitions concerning the role played by reputation in this choice. More precisely, our results suggest that reputation is crucial in implementing relational agreements. Not only because reputational concerns enhance firms to valorize the future but also because reputation can be used as a hostage to equilibrate hazards in the relationships. This is consistent with the previous work of Williamson (1985), considering reputation as a hostage provision used to facilitate credible commitments. This paper thus appears as a way to underline and reinforce the legitimacy of previous literature studying the role and the effects of firms' reputations in their relationships. Reputation of a firm does not only concern its relations with employees and customers but also with its partners. A good reputation will allow firms to improve enforcement mechanisms.

Our findings also invite us to reconsider the role of contracts in interfirms' relationships. We found a negative influence of the contract on the ability of firms to develop tight cooperation. Firms considering the formal contract as the cornerstone of their relationships to coordinate themselves are less likely to cooperate. Nevertheless,

as noted earlier, formal and informal contracting are not considered as antinomic for many respondent firms, reinforcing the idea of possible complementarities between those two kinds of coordination mechanisms. Our results suggest that a better way to address this issue is to consider that a formal contract could be used as a way to balance the relationship and to provide parties better possibilities to promote cooperation. As a consequence, contract has to be seen as a generic framework on which firms will build and develop relational mechanisms in order to secure and adapt their relationships. Such conclusion is consistent with the complementarities perspective of formal and informal mechanisms of governance structure (Crocker and Masten 1991, Poppo and Zenger 2002, Lazzarini et al. 2004).

Conclusion

This study has important limitations. In fact, there remain a number of questions that we did not address in this paper. First, the major weakness is that our data only offer a static view of interfirms' relationships. As a consequence, we did not have the opportunity to observe the frequency (and repetition) of relationships and his evolution over time. Repeated interactions could evidently have an influence on the arbitration between formal and informal contracting even if our theoretical framework suggests that future is more important than past (i.e. existing repeated relationships) to implement or not a relational agreement. The absence of dynamic vision is all the more injurious especially because the interaction between cooperation and contract clearly evolves in time. It is legitimate to think that the formal contract will play an important role during the first periods of the relationships and thereafter will decrease in significance as patterns of cooperative behavior and reputation emerge (Poppo and Zenger 2002).

Second, we only analyzed French firms in business activities, relatively homogeneous and benefiting of stable institutions. Obviously, the effectiveness of formal contract as a coordination device rests on the legal and institutional framework of a country. In the case where this framework is too weak to allow formal contract to clearly frame exchange relations, the question of complements or substitutes will fail in relevance. The use of informal device would not be the result of parties' choice but a direct consequence of the institutional and legal background. If our results cannot be generalized, an interesting direction for future research could be to examine interfirms'

relationships in other sectors or in other countries in order to study the influence of institutional framing.

These limitations to our research design provide us opportunities for future research avenues.

Table 2. Correlations

Variable Name	Variable Number												
	1	2	3	4	5	6	7	8	9	10	11	12	
1. Cooperation	1.0000												
2. Contract	-0.1140	1.0000											
3. Partner Reputation	0.0650	0.0384	1.0000										
4. LT	0.1189	-0.1559	-0.0158	1.0000									
5. OSSI	-0.0625	0.0257	-0.0041	-0.0304	1.0000								
6. Balance	0.0507	-0.0368	-0.0606	0.0565	-0.0736	1.0000							
7. Respondent Reputation	-0.0211	0.0131	-0.0019	-0.0401	-0.0040	0.0074	1.0000						
8. UnbRep	0.0182	0.0123	0.3538	-0.0170	-0.0041	-0.0270	0.7061	1.0000					
9. RiskSharing	0.0255	0.0400	0.0625	-0.0836	0.0628	0.0370	0.0286	0.0410	1.0000				
10. Experience	-0.0086	0.0291	0.0445	-0.0796	-0.0177	-0.0284	0.3118	0.2370	0.0583	1.0000			
11. Size	-0.0456	0.0546	-0.0337	-0.0371	0.0416	-0.0113	0.2034	0.1523	0.0132	0.0561	1.0000		
12. Share	0.0702	0.0105	0.0155	0.1208	-0.0054	-0.0585	0.0568	0.0584	-0.0313	0.3717	-0.0246	1.0000	

Table 3. Probit analysis of Cooperation

	Determinants of cooperation			
	Model 1	Model 2	Model 3	Model 4
Contract	-0.308*** (0.051)	-0.309*** (0.051)	-0.407*** (0.063)	-0.421*** (0.064)
Reputation	0.286*** (0.068)	0.270*** (0.069)	0.268*** (0.069)	0.271*** (0.070)
LT	0.276*** (0.044)	0.243*** (0.045)	0.246*** (0.045)	0.289*** (0.047)
OSSI	-0.310*** (0.092)	-0.309*** (0.092)	-0.470*** (0.106)	-0.496*** (0.108)
Balance	0.107* (0.043)	0.118** (0.043)	0.115** (0.043)	0.110* (0.044)
RiskSharing	0.157* (0.071)	0.172* (0.071)	0.169* (0.071)	0.155* (0.072)
Unbalanced Reputation	-0.013 (0.048)	0.012 (0.050)	-0.029 (0.056)	-0.018 (0.057)
Size		-0.799+ (0.420)	-0.843* (0.425)	-0.906* (0.449)
Share		0.002*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Experience		-0.029+ (0.017)	-0.027 (0.017)	-0.027 (0.018)
Contract X OSSI			0.621** (0.204)	0.615** (0.208)
Contract X UnbRep			0.182+ (0.107)	0.165 (0.107)
Constant	-0.159** (0.049)	-0.222*** (0.056)	-0.205*** (0.056)	-0.284* (0.112)
Functions & Sectors	No	No	No	Yes
chi2	129.424	153.468	166.605	218.331
N	3759	3759	3759	3758

One-tail t-test for hypothesized effects. + p < 0,10 ; * p < 0,05 ; ** p < 0,01 ; *** p < 0,001

Table 4. Two Stage Least Square Probit Analysis of Cooperation(instrumentation of variable *Contract*)

	Determinants of Cooperation			
	Model 1a	Model 2a	Model 3a	Model 4a
Contract	-1.027** (0.352)	-1.169*** (0.334)	-1.349** (0.463)	-0.952* (0.443)
Partner Reputation	0.301*** (0.071)	0.286*** (0.071)	0.266*** (0.070)	0.278*** (0.073)
LT	0.211** (0.074)	0.158* (0.073)	0.188** (0.071)	0.270*** (0.063)
OSSI	-0.379*** (0.101)	-0.369*** (0.101)	-0.627*** (0.118)	-0.605*** (0.129)
Balance	0.059 (0.045)	0.065 (0.045)	0.050 (0.047)	0.063 (0.047)
Risk Sharing	0.150* (0.076)	0.170* (0.076)	0.136 (0.074)	0.109 (0.075)
Unbalanced Reputation	-0.037 (0.049)	-0.020 (0.051)	-0.263* (0.115)	-0.164 (0.109)
Size		-0.594 (0.503)	-0.839 (0.481)	-1.709* (0.486)
Share		0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)
Experience		-0.023 (0.017)	-0.015 (0.018)	-0.020 (0.018)
Contract x OSSI			1.022** (0.381)	0.740 (0.379)
Contract x UnbRep			1.147* (0.458)	0.737 (0.429)
Functions & Sectors	No	No	No	Yes
Constant	0.065 (0.126)	0.034 (0.122)	0.049 (0.144)	-0.148 (0.167)
N	3 759	3 759	3 759	3 759

One-tail *t* test for hypothesized effect : + $p < 0,10$; * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$

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Appendix 1. Presentation of variables used in regressions

Variable name	Description	Distribution	Mean	Obs.
<i>Cooperation</i>	Based on the following question of the survey: "What are the main characteristics of the on-going relationship?" When firms answer that a tight cooperation between parties is considered as crucial, the variable <i>Cooperation</i> take the value 1; 0 otherwise.	0: 1 815 1: 1 944	0,517	3 759
<i>Partner Reputation</i>	Based on the following question of the survey: "What is the main reason to choose this particular partner?" When firm answer that his reputation is one of the main reasons, the variable <i>Partner Reputation</i> takes the value 1; 0 otherwise.	0: 3 059 1: 391	0,122	3 759
<i>Contract</i>	Based on the following question of the survey: "What are the main characteristics of the on-going relationship?" When firms answer that the existence of a formal contract is considered as crucial, the variable <i>Contract</i> takes the value 1; 0 otherwise.	0: 2 934 1: 825	0,219	3 759
<i>OSSI</i> (One Side Specific Investment)	Based on the following question of the survey: "What are the main characteristics of the on-going relationship?" When firms answer that a specific investment engaged by only one of parties is considered as central, the variable <i>OSSI</i> takes the value 1; 0 otherwise.	0: 3 546 1: 213	0,057	3 759
<i>Balance</i>	Based on the following question of the survey: "How you consider the balance of the relationship?" The variable <i>Balance</i> takes the value 1 when respondent firm considers the relationship as quite balanced; 0 otherwise.	0: 1 445 1: 2 314	0,615	3 759
<i>Respondant Reputation</i>	The variable <i>Respondant Reputation</i> takes the value 1 when the respondent firm could be considered as reputed; 0 otherwise. (See Appendix 2 for the construction)	0: 2 815 1: 944	0,251	3 759

<i>UnbRep</i> (Unbalanced Reputation)	The variable <i>UnbRep</i> takes the value 1 when one partner is reputed but not the other. When partners are both not reputed or both reputed, the variable takes the value 0. (See Appendix 2 for the construction)	0: 2 583 1: 1 176	0,313	3 759
LT (Duration)	Based on the following question of the survey: "What is the foreseeable duration of the relationship?" The variable <i>LT</i> takes the value 1 when the duration is more than five years; 0 when the duration is less than five years.	0: 1 364 1: 2 395	0,637	3 759
Risk Sharing	Based on the following question of the survey: "What are the main characteristics of the on-going relationship?" When firms answer that an equitable sharing of risk is considered as a main characteristic, the variable <i>Risk Sharing</i> takes the value 1; 0 otherwise.	0: 3 392 1: 367	0,297	3 759
Size	Size of the respondent firm, expressed in number of employees.	/	185 ($\sigma = 654$)	3 759
Share	Size of the turnover due to relationships, expressed in percent.	/	48,25 ($\sigma = 37,84$)	3 759
Experience	Experience of the respondent firm, expressed in number of current relationships (log).	/	1,3 ($\sigma = 1,3$)	3 759
Type	Relationships can take many forms. The survey precise five forms of relationships: 1. Pooling of resources; 2. Subcontracting (supplier); 3. Subcontracting (buyer); 4. Management of a common structure; 5. Exclusive contract; 6. Other.	1: 1 227 2: 345 3: 471 4: 312 5: 845 6: 559	/	3 759
Function	Relationships can concern four different functions: 1. Production; 2. Supplying; 3. Marketing; 4. Research and development.	1: 1 672 2: 1 567 3: 217 4: 303	/	3 759
Sector	Relationships take place in different sectors. The control variable of sector is based on the French activity nomenclature: 51. Wholesale trade; 52. Retailing; 72: Computing services; 74: Service industry.	51: 1 619 52: 427 72: 427 74: 1 122	/	3 759

Appendix 2. Construction of the Unbalanced Reputation variable through measurement of the respondents' reputation

According to previous literature, we can find many ways to measure reputation. In our data, three different solutions are available: the size of the firm, its number of on-going relationships and its age. It is legitimate to think that it will be easier for a reputed firm to develop numerous relationships (size, number of relationships) and to make durable its activity (age) than for a less reputed one. According to such an idea, we firstly define three dummy variables concerning age, size and number of relationships:

SD-Age. SD-Age is equal to 1 if the age of the responding firm is bigger than the ninth deciles of the distribution. 0 otherwise.

SD-NumberOfRelations. SD-NumberOfRelations is equal to 1 if the number of relations of the responding firm is bigger than the ninth decile of the distribution. 0 otherwise.

SD-Size. SD-Size is equal to 1 if the size of the responding firm is bigger than the ninth deciles of the distribution. 0 otherwise.

Secondly, we add those three variables and define a fourth variable:

$$SD_i = SD\text{-Age}_i + SD\text{-NumberOfRelations}_i + SD\text{-Size}_i$$

It follows $SD_i = \{0,1,2,3\}$

We thereafter simplify by considering the new variable Respondent Reputation equal to 0 when SD_i equal to 0 and Respondent Reputation equal to 1 when SD_i equal to 1, 2 or 3.

Our unbalanced reputation variable (*UnbRep*) is then simply the resulting cross variable between SD and the partner reputation variable.

Appendix 3.

Table 5. Estimation of *Contract* equation
(Two Stage Least Square Probit Analysis of Cooperation)

	Determinants of <i>Contract</i>			
	Model 1a	Model 2a	Model 3a	Model 4a
PartnerReputation	0.031 (0.023)	0.037 (0.024)	0.015 (0.014)	0.010 (0.015)
LT	-0.121*** (0.015)	-0.120*** (0.015)	-0.082*** (0.012)	-0.070*** (0.013)
OSSI	0.016 (0.031)	0.012 (0.031)	-0.158*** (0.011)	-0.165*** (0.012)
Balance	-0.016 (0.014)	-0.015 (0.014)	-0.029* (0.012)	-0.027* (0.011)
RiskSharing	0.047 (0.025)	0.050* (0.025)	0.012 (0.019)	-0.001 (0.019)
UnbRep	-0.005 (0.016)	-0.012 (0.017)	-0.212*** (0.010)	-0.205*** (0.010)
LongTermContract	0.135*** (0.032)	0.134*** (0.033)	0.139*** (0.030)	0.144*** (0.028)
Tcttexclu	0.090*** (0.017)	0.093*** (0.017)	0.052*** (0.013)	0.071*** (0.015)
Size		-0.551*** (0.144)	0.282* (0.110)	0.226 (0.139)
Share		0.000 (0.000)	0.000* (0.000)	0.000* (0.000)
Experience		-0.001 (0.006)	0.005 (0.005)	0.002 (0.005)
Contract x OSSI			0.674*** (0.049)	0.677*** (0.049)
Contract x UnbRep			0.949*** (0.008)	0.929*** (0.010)
Functions and Sectors	No	No	No	Yes
Constant	0.263*** (0.017)	0.250*** (0.019)	0.234*** (0.016)	0.218*** (0.030)
N	3 759	3 759	3 759	3 759

One-tail *t* test for hypothesized effect : + $p < 0,10$; * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$