

Reputation, Contracts and Governance Structure in Inter-firm Relationships

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Abstract: In this paper, using a large database concerning more than 4 900 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 and on what should be achieved according firms, 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. Our results thus suggest that competing theoretical frameworks focusing on informal agreements or on formal agreements might miss a part of the story. We suggest how those dimensions might complete or substitute each other highlighting previous empirical results on this issue.

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 (Powel 1985; Gibbons 2005; Ménard 2007). This theoretical evolution is concomitant with empirical facts. A huge majority of firms have relationships with other firms. Most of them are engaged in many relationships or belong to networks, blurring the frontiers between firms and markets (Baker-Gibbons-Murphy 2005). Even more, all firms are identically concerns by such evolutions and we can talk about firms' relationships without distinction of size, sector or production object. The importance and the interest of such relationships is a key element to understand the huge growth of practical and theoretical works in economics about the firms and their interactions with environment.

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 adaptation of the relationship (Gibbons 2005). Those two objectives might be antagonist (Crocker-Reynolds 1993, Saussier 2000) and lead to vertical integration when a transaction clearly needs secure and adaptive mechanism. Nevertheless, recent theoretical developments pointed out the fact that those two objectives might be achieved by the combination of formal and informal mechanisms that might be analyzed as substitutes or complements (Baker-Gibbons-Murphy 2005, Corts and Singh 2007). Empirical studies are not conclusive on this aspect (Lazzarini et al. 2004).

In this paper, we argue that relationships between firms differ in their needs and their goals to be achieved. More precisely, we defend the idea that formal and informal mechanisms are indeed complements but differ in their efficiency and implementation costs. In fact, 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 is involved, informal agreements, mainly through the use of reputation mechanism might be useful to secure and adapt the relationship. A combination of the two mechanisms, costly to implement, might even appear in very strategic and important relationships.

In this paper, using a large database concerning more than 4 700 strategic relationships in force between French firms in 2003, we study the way they govern their relationships. We show that depending on the characteristics of their relationships and on what should be achieved according firms, 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. Our results thus suggest that competing theoretical frameworks focusing on informal agreements or on formal agreements might miss a part of the story. We suggest how those dimensions might complete or substitute each other highlighting previous empirical results on this issue.

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. Theoretical framework

Contracts and Reputation

Contracts

Contracts play a crucial role in interorganizational relationships. Considered as agreements under which two parties make reciprocal commitments in terms of behavior to coordinate (Brousseau and Glachand 2002), their role is to frame and perpetuate firms' relationships providing rules and explicating mutual obligations. They also are a mean to enforce agreements in the last resort and to solve possible conflicts in front of courts. 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 (penalty clauses). Obviously, contracting involve several costs to parties. Assumed costless during a long time, contracts are in reality fundamentally costly and costs are due to

the redaction and the will to be exhaustive (Dye 1985). All stakes is to be complete anticipating contingencies and building up incentives to enforce agreements, notably because formal enforcement requires the courts to verify that a breach has occurred (Chakravarty and MacLeod 2006). The bounded rationality assumption (Simon 1957, Williamson 1985) strengthens the cognitive limitations that make the contract incomplete. Indeed, there are costs, more or less important, to gathering, analyzing and using information. To preempt North's terminology, bounded rationality obviates agents to correctly "decipher the environment" (North, 1990). This contract incompleteness is recognized as the general case since the classic contribution of Grossman and Hart (1988) and Hart and Moore (1990). Being visible and concrete, contracts will refer to the formal dimension of inter-firms' relationships for the rest of the paper.

Reputation

Reputation is generally considered as an essential asset, socially built, providing to firm a sustainable competitive advantage. At first, because she is the base of trust and trustworthiness development necessary to exchanges. As often emphasized by literature, a degree of trust is a critical ingredient in virtually all economic relationships (Bolton and Ockenfels, 2006). In fact, concerns about reputation encourage players to not defect and therefore to reduce the threat of opportunistic behavior. A firm will be more confident with a reputed partner and, reciprocally, she will be more trustworthy if she 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 firms¹. According to this view, her reputation depends on her past behavior. She will have a good reputation if other firms share the idea that she always respects agreements and never reneges on contracts. Different theoretical and empirical works recently highlight that reputation is an important mean to facilitate exchanges and enhance the development of inter-firm relationships. More precisely, several authors argue that reputation mechanisms are more efficient than legal institutional mechanisms in the promotion of cooperative behavior (Bakos and Dellacoras, 2003), especially because norms and reciprocal obligations supporting relational governance transcend contract clauses and economize on the cost to

¹ 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.

use legal system (Dore, 1983). In the same category, relational contract theory tells us that reputational concerns will play an important role to induce cooperation between firms. In fact, the theory emphasizes duration and concern for reputation as a way to tackle the enforcement issues. In order to perpetuate the relationship and to create value, firms behave cooperatively and continue to do it if her partners behave cooperatively as well. The firm will choose to renege will face a loss in reputation and she will reduce her chance to implement new relationships for the future. The cost of renegeing on an implicit contract may be sufficiently high to discourage unfriendly behavior (Hart and Holmstrom 1987, Baker, Gibbons and Murphy 1994, MacLeod 2007). By opposition to contract, reputation embodies the informal dimension of inter-firms' relationships

Relational and formal elements of governance structure

Complementarity or/and substitutability of formal and informal agreements

The question of complementarity or substitutability of formal and informal institutions is a burning debate, led by old and recent literature. Such a debate can be stressed by referring to reputation and contract which can respectively be compared to informal and formal enforcement.

Formal and informal arrangements have been considered as substitute for a long time. It means that the presence of one of these two governance modes makes the presence of the other useless. Sullivan and Peterson (1982) argue that interpersonal ties between business leaders are a large substitute to the redaction of complex contracts. This idea of a possible substitution was generalized by Granovetter (1985) when he précised that formal institutions "do not produce trust but instead are a functional substitute for it"². Sobel (2007) also concludes, in his theoretical study of the choice between formal and informal enforcement, that firm's "loyalty" is inversely related to the effectiveness of formal enforcement, i.e. that "relational contracts provide a substitute for 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 1996). In other words, if two partners mutually trust each other, they don't need

² Granovetter (1985), quoted by Lazzarini, Poppo and Zenger (2004)

a contract to enforce their agreements. At contrary, if they have signed a contract, trust is useless because they could rely on the first to prevent opportunistic behavior and to penalize contract renegeing. Some 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 cooperation (Macaulay, 1963). 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. Yet, the specification of complex contract is uncalled-for (Lorange and Roos 1992, Goshal and Moran 1996). In their very good overview of the question, Lazzarini et al. (2001, 2004) refer to these two kinds of substitutability as, respectively, weak and strong substitution.

But recently, following the intuition of North³, a new and dynamic literature about the possible complementarity between formal and informal approach emerged. According to this literature, the use of one is compatible with the use of the other. Even more, their combination can improve the overall performance of relationships. Benefits from the complementarity justify the fact that informal institutions also play in important role in market contexts. As Lazzarini et al. (2004) argue, “exchanges are governed by a set of formal and informal institutions which are deeply intertwined”. In our case contract ensure a long-run relationship and could be a way to allow the development of trust. In the inverse direction, the existence of trust could be a prerequisite to imagine and redact efficient contracts all while reducing costs associated with. Insofar, informal elements are legitimate by the existence of formal ones. This argument of a possible complementarity finds an echo among economic literature. For example, Baker, Gibbons and Murphy (1994, 2002) have shown that formal contract allow, on the one hand, to extend the expected duration of the relationship and, on the other hand, to reduce the gains from deviations from cooperative behavior in the short term (, 1994, 1997). According to such perspective, the soul of the complementarity between relational and formal governance is the character intrinsically incomplete of contracts. If contract could perfectly and clearly specify all future

³ “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).

contingencies, there would have been no need for informal agreements. Formal incentives could enforced any situations. From that perspective, the complementarity 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 (Lazzarini et al. 2007)⁴.

In any case, defendants of substitutability or complementarity share the idea that the answer to this debate still ambiguous (Corts and Singh 2004). In fact, “the interaction between formal and informal institutions is too complex to accommodate a unique pattern” (Lazzarini et al. 2004). Yet, the trade-off between the use of formal and informal agreements vary among inter-firm relationships and the mix of them will depend to the choice of governance structure made by firms in order to frame their relationships.

Choices of governance structure

Relationships are a mean to increase the benefits of firms. They commit themselves in order to obtain higher productivity and competitiveness. To reach such objectives, firms have to secure the relationships all while promoting cooperation and adaptation. Yet, the purpose is to enhance cooperation and to reduce opportunism. This goal is all the more crucial than possibilities of conflict are pervasive in inter-firms’ relationships. In fact, partners have interest to collaborate and behave cooperatively to create value, they also have incentives to defect and try to capture a larger party of the relationship benefits, especially considering a short term horizon (Williamson 1985, Silverman 2007). All the point is to align incentives in order to ensure the success of the relationship. This could be achieve by making converge the interest of the two parties in the long term and reducing the gains of short term reneging in an appropriate governance structure.

Knowing that governance is a mode of organizing transactions, we can define the governance structure as a set of formal and informal coordination devices destined to organize a transaction and to avoid opportunistic behavior that might arise because of

⁴ “the process of contracting may itself promote expectations of cooperation consistent with relational governance”, Lazzarini, Poppo and Zenger (2007, p. 16).

incomplete contract. Each type of governance structure is characterized by a cost and properties that fit well or not with the characteristics of the transactions and the goals of contracting parties. Thus, the good governance structure is the one which minimize monitoring and enforcement costs. Before commit themselves into new relationships, firms have to frame the best governance structure feasible. According to the question of complementarity or substitutability of formal and informal enforcement previously addressed, we know that such objective could rest on formal or informal mechanisms.

We analyze interfirms' relationships according to contract and reputation which refer to the formal and the informal dimension of the governance structure. More precisely, we do not focus on the existence but more on the importance attached to them, precisely because their existence is not a fit measure of their role. In fact, for practically all of them, firms sign contracts and they are sensitive to their reputation and to their partners' ones. However, reputation and contracts could be more or less central in their mind and, consequently, in their choice in terms of relationships. For this reason, we observe the appreciation by firms of their importance when they frame governance structure. It means that if a firm values more contracts than the reputation of their partners, she is more attracted by a formal governance structure. At the opposite, if she gives more value to the reputation than to the contract, she prefers informal aspect of governance. Obviously, she also can give value to both or any aspect simultaneously. This arbitration is due to the fact that contract and reputation could play similar roles at different costs. Contract presents the interest to secure the relationships but it could be a source of rigidity. At contrary, reputation promotes flexibility but offers less security than contract. Combine them could be a tentative to take advantage of both. Furthermore, different governance structures have different costs. Contracts are evidently costly, especially when they have to frame complex transactions. On the other hand, reputation is also costly. At first because there is cost to find and to select a reputed partner, and because reputation of one of the party implies, most of the time, a premium price for the other (Shapiro 1983). For those reasons, the governance structure which combines the two elements is more costly than the one which only rests on one of them (or neither of them).

As we previously said, preferences of firms for informal and/or formal mechanisms will be determine by the objectives of their relationships. In other words, arbitrations

between reputation and contract differ in function of the needs and the goals to be achieved. We can emphasize such needs and goals looking at the strategic intensity of relationships, the expected level of cooperation or the existence of asset specificity necessary to implement.

At first, we can suppose that firms will prefer complete, and costly, governance structure when relationship is strategic. Because, on the one hand, firms' survival directly depends on her capacity to ensure the good working order of this kind of relationships. But, on the other hand, a high level of strategic intensity involves more Incentive problems and more conflicts of interest. Appropriability hazard and hold up temptation are particularly meaningful (Oxley 1997). For those reasons, strategic relationships are very often associated with important uncertainty. This high level of uncertainty and the absolute necessity to secure those relationships can explain the will to choose complex governance structure, involving the complementarity of formal and relational approach.

On the basis of this argument, the following hypothesis is proposed:

H1: More strategic the relationship, the more complex the governance structure.

Choices of firms will also differ in the needs for asset specificity and the possibility to contractualize them. As Incomplete Contract Theory (ICT) emphasizes it, the will to redact exhaustive contract is inevitably bounded. And more contracts are complex, more it is difficult to unforeseen all contingencies. Whatever are origins of incompleteness, the result is the need for other way to enforce unforeseen contingencies. In fact, when contracts are incomplete, some informal understandings are necessary to manage not anticipated contingencies and thus to substitute or complete the formal part of the governance structure. Reputation could be one of these informal elements. In many contributions, contract incompleteness is considered as the origins of reputational concerns of firms. It means that the inability or the cost to sign comprehensive contract compose the starting point to explain the importance of reputational concerns (MaCaulay, 1963; Williamson, 1975; Kreps, 1984 and Kremer, 1986). The necessity of relational agreements becomes all the more inevitable than elements of the relationships are non-contractual. To enforce such agreements concerning non-contractual asset specificity, firms have no other choice to rely

upon informal mechanisms. Latter could be used alone or in complement of formal mechanisms of governance.

Consequently, we hypothesize that:

H2: The presence of non-contractual asset specificity requires relational governance mechanisms.

If contracts are a mean to govern cooperative relationships; through the convergence of collective interests in the long run and the suppression of incentives for opportunism (opportunism will be at cost of sanctions); they also still to be an incomplete process and they cannot be a sufficient condition to promote cooperation. According to the defenders of the complementarity view, firms ready and willing to built cooperative relations are going to choose more complex governance structure, combining formal and informal agreements. At least, following the defenders of the substitutability approach, the governance structure only based on contract will be the less appropriate to promote cooperation. More than by formal contract, cooperation needs to be supported by a set of norms and mutual understandings characterizing relational governance.

Therefore, it is expected that:

H3: Cooperation rests on relational mechanisms.

As opposite, some relationships do not require implementing costly governance structure. If inter-firms' relationships do involve neither high strategic intensity nor non-contractual asset specificity and if firms do not need to closely cooperate, they will choose more simple form of governance structure, preferring only one of the two dimensions or any of them in particular. Thus, we also have to focus on those firms which do not give value neither to the contract nor to the reputation of their partner (which are plentiful in our sample). A way to explain such cases is to remind us that a large part of inter-firms' relationships still quite simple, notably because they are easy to define and, by consequence, to organize. Parties commit to cooperate but it's not particularly difficult for them to switch of partner. In such case, firms are only concerned by a bilateral reputation effect where the punishment of a non-cooperative behavior will correspond to the stop of the relationships. This kind of long-term and open ended relationships limits the scope for unreliable behavior.

Banerjee and Duflo (2000), in their study of the Indian software industry, view this kind of relationship as a substitute for reputation. For that reason, relationships which do not involve a need to tight cooperation allow firms to commit on the long run without giving particular value to contract or partners' reputations.

3. Data and methods

Data

Data are provided by a large survey of inter-firm relationships conducted by the National Institute for Statistics and Economic Studies of France in 2003. The supervised sample account 1 462 enterprises engaged in relationships with other firms in the sectors of trade and services⁵. During the statistical survey, each firm was asked to describe at most three relationships involving collaboration with another firm or another group of firms, whether they are contractual or not. Practically all firms have more than three relationships, so they had the instructions to only describe the three more strategic relationships. At the end, it means that a maximum of twelve descriptions of relations by firm is fixed in our sample. Compiling answers provide us a database of 4 755 different strategic interfirms' relationships. The interesting point is that the database deals with firms which want to collaborate with others. It means that those firms already know that they need relationships and all the questions provide us understanding elements about why they expect of the relationships and how they make the choice to organize the relationships governance structure. Furthermore, these data lead us to focus on a particular kind of interfirms' organization: interfirms' relationships. The focus on those particular relationships is interesting. At first, because those relationships do not involve transfer of asset property. Firms stay distinct entities all over the relation and the absence of transfer of property rights do not provide incentives to firm to well behave. In other words, all our relations concern arm's length transactions⁶.

⁵ Firms was random selected among the 22 000 French firms which have more than 20 employees or more than 5 million Euros of sales and which have an industrial principal activity.

⁶ Relationships studied in this paper are analogous to what Baker et al. (2002) call "alliances".

Empirical approach and measures

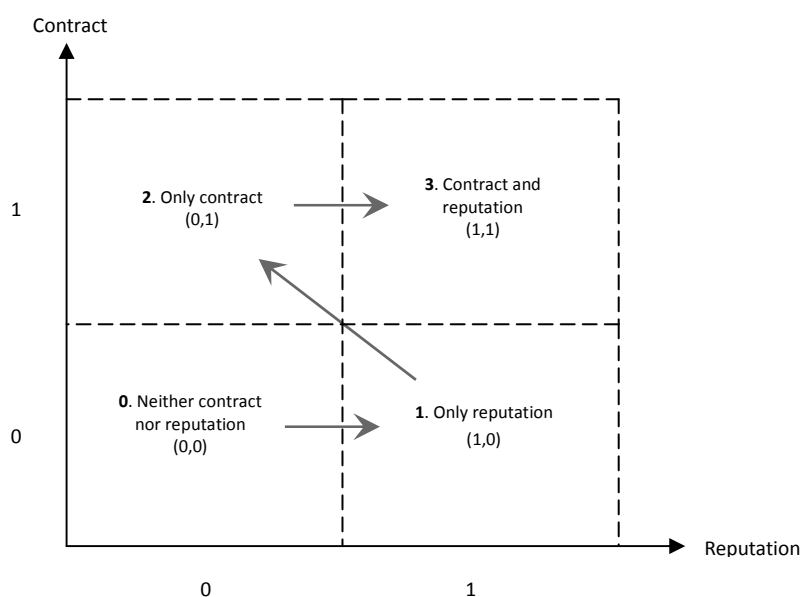
Dependent variable: a governance structure typology

Our dependant variable (GovernanceStructure, GS) is obtained by construction of other variables. As we note it earlier, the central focus of this study is on the interaction between the formal and the informal aspects of governance, respectively represented by contract (Contract, C) and reputational concern (Reputation, R). The analysis begins by building a typology of inter-firms' relationships governance structure based on these two key variables. Starting from the answers provided by firms' in the questionnaire, we succeed in classify relationships in four different type of governance structure, ordered to the more simple to the more complex; to the less to the most costly. We obtain the variable GS (Governance Structure)⁷. Figure 1 illustrates the four different categories of Governance Structure according to the importance of Reputation and Contract⁸.

$$GS = (R, C) \text{ with } R = C = \{0, 1\}$$

$$GS = \{(0,0); (0,1); (1,0); (1,1)\}$$

Figure 1 : Choice of governance structure



⁷ Note that the variables Contract (Ctt) and Reputation (R) are also the mergers of four others: Guarantee of Contract (GC) and Formal Contract (FC) for Contract and Notoriety (N) and Labels (L) for Reputation.

⁸ A theoretical example of these four categories is providing in appendix C.

Case 0: light governance structure

The first case (0,0) refers to firms receiving 0 to Contract and 0 to Reputation. In other words, it group together firms choosing light governance structure. It does not mean that those firms use neither contract nor reputation to organize their current relationships; it simply tells us that the selection of a partner is no function of the possibility to redact a contract and no function of his reputation. This case refers to simple inter-firms' relationships, characterized by open-ended horizon. In such situation, firms commit themselves on a long-term basis. Unlike next cases, those relationships do involve neither asset specificity nor strategic dimension and they do not need a high level of cooperation. If one party reneges on her commitment, the sanction will be the sudden stop of the relationships and the change of partner.

Case 1: relational governance structure

The second case (1,0) refers to firms receiving 0 to Contract and 1 to Reputation. This governance structure is more costly than the first because firms have to find a reputed partner. And even though she finds this reputed partner⁹, latter would certainly receive more propositions than others and will be in position to demand premium price, increasing automatically the cost of the relational governance structure. Just like the first case, receiving 0 to Contract does not mean that there is no contract framing the current relationships. Simply, the contract is not perceive as a reference point and firms rest their relationship on informal mechanisms of governance. If one of the parties does not respect her word, the sanction will be a loss in reputation, and, consequently, more difficulties for her to built new future relationships.

Case 2: contractual governance structure

The third case (0,1) refers to firms receiving 1 to Contract and 0 to Reputation. This contractual governance structure represents a superior level of cost because we assume that

⁹ In our analysis, the importance attached to reputation in the relationship is measured by the reasons advanced by firms to explain the selection of their partners. Firms which select their partners according to notoriety and/or his exterior sign of quality and confidence (guarantees and quality labels) are considered to be sensitive to Reputation.

costs associated with the redaction and the monitoring of contracts are more important than the cost associated with a reputed partner. Here, firms are not necessarily insensitive to reputation but they do not select their partner regarding to his notoriety or his labels. They judge the contract sufficient to frame the relationship and enforce agreements. The sanction will consist on the application of clauses unforeseen by contracts (penalty clauses, etc.).

Case 3: complex governance structure

The last and fourth case (1,1) refers to firms receiving 1 to Contract and 1 to Reputation. Thus, firms of this category attach importance to reputation and contract at the same time. Trying to combine the advantages of the relational and the contractual governance structures (and, at the same time, the ways to sanction opportunistic behaviors), this complex governance structure is also the most costly.

Independent variables

Data allow us to look at the objectives that firms want to achieve during their relationships. The level of strategic intensity embodied by each relationship is synthesized by the variable SI (Strategic Intensity). This dummy variable receives the value 1 when the described relation is considered as crucial to the firms' development and 0 otherwise. The dummy variable NCAS (Non-Contractual Asset Specificity) precise the existence or not of asset specificity that cannot be contractualize. In our sample, several firms want to develop a special mode of communication dedicated to their relationship. Such implementation allows us to observe the effect of non-contractual asset specificity on the firms' preferences for formal and/or informal governance structure mechanisms. It is also relevant to take into account the will to put in place a real cooperation. Some relationships require more closed ties than others. This necessity could influence the choices of firms in terms of governance structure. The dummy variable C (Cooperation) is a way to explore the effect of such necessity. Finally, willingness to commit will also depend on the duration of the relationships. Some relations require short period while others require committing on the

long run. The dummy variable OE (Open-Ended) allow us to differentiate relationships with finite¹⁰ (0) or open-ended (1) horizons.

Control variables

Firms' purposes could also drive them to design their activities in different ways. Regarding the characteristics of the transaction, they are going to implement different types of relationships associated with different levels of commitment. Yet, firms can choose to engage themselves to always exchange with the same partner and sign an exclusive contract (EC - ExclusiveContract), or they can set up subcontracting relationships (SC - Subcontracting) in order to reinforce and adapt exchanges (in terms of delays and product attributes). If they want to cooperate more closely, they also can decide to pool resources, technical and/or human (PR – Pooling of Resources) or to jointly manage a common structure (CS – Common Structure).

We also incorporate in our empirical analysis, in order to stress the robustness of results, some other variables concerning each firm and their current relationships. Thus we add variables relative to the size of firms (S – Size), their experience (NR – Number of Relations), the domain of firms activities (FAN – French Activity Nomenclature), the concerned functions (F – Function) and the geographical localization of their partners (G – Geography).

Appendix A and appendix B report the descriptive statistics of dependent, independent and control variables.

4. Results

In order to identify the parameters influencing the choice of governance structure, we test our hypothesis by using Multinomial Logit Regression analysis. The aim is to highlight the reasons which determine the interfirms' relationships belonging of different cases defined in the previous section.

Table 1 reports the pairwise correlations among the variables used in the analysis.

¹⁰ According to Transaction Cost Theory, we know that a finished temporal horizon enhance opportunistic behavior of defection and significantly lower the possibility to promote cooperation.

Insert Table 1 about here

Each new model proposes improves previous ones by adding more independent and control variables. As we can see in Table 2, we do not observe a loss in robustness results by adding more control variables. Results appear stable, independently of size, sector and function of firms and independently of type of relationships.

The results for models are presented in Table 2.

Insert Table 2 about here

As it was expected, the strategic intensity of inter-firms' relationships conduct to more complex governance structure, combining the role of the reputation and the contract (Hypotheses 1). More surprisingly, it appears that such relationships also tend to be frame by relational governance. This result tells us that firms will prefer to have a reputed partner and develop relational ties when relationships are critical for firms. Tests also confirm our hypotheses concerning the effect of the presence of non-contractual asset specificity (NCAS). Embodied by the implementation of a specific mode of communication between partners, our variable NCAS leads firms to prefer governance structure incorporating relational dimension.

Results are supported for hypotheses 3. In fact, a need to closely cooperate conducts firms to favor relational governance structure. Results argue that relational mechanisms are the more appropriate to govern this kind of relationships. More precisely, we can note that complex structure are not used in such case, confirming the intuition that firms who really want to cooperate do not need to redact contract. They instead have to credibly commit themselves on the basis of relational agreements. Cooperation argues in favor of relational governance structure used alone and, consequently, in favor of the complementarity perspective.

The time variable (OE – Open-Ended) presents significant and interesting results. According to her, the light governance structure seems to be the more appropriate to frame open-ended relationships. At contrary, firms will tend to choose more complex structure from the point that relationships are timely bounded.

Results remain essentially unchanged across the different models and, as we said, the significance of coefficients still stable all over successive estimations. However, the additions of control variables make appear other consequences. At first, we observe that distance makes governance structure more complex. In fact, the distance increase the risk for hold up temptations all while reducing the ability to put in place relational agreements. For those reasons, the variable Geography (G) indicates that firms will prefer to combine contractual and relational mechanisms with distant partners. Secondly, the control variables referring to the type of the relationships appears consistent to basic intuitions: contractual governance structure is the more appropriate for subcontracting and exclusive contract. Finally, it is also interesting to underline the tendency of inter-firms' relationships concerning the research and development function to be govern by complex structure combining formal and informal mechanisms. This result reinforces the preliminary verification of our hypotheses 1 about the effect of a high level of strategic intensity.

The variable PAE (Principal Activity Exercised), which is similar but more detailed information than the FAN (French Activity Nomenclature) is not fulfilled in the results presentation in order to avoid a lack of clarity¹¹. Simply note that her addition increases the explicative strength of the model without modifying previous results.

5. Discussions and future research

Discussions

The objective of this paper was to determine how firms coordinate themselves to organize their activities when those activities are not integrated, all while emphasizing the choice between relational and contractual approach. Yet, we argued that the choice of

¹¹ In our sample, the distinction in terms of PAE account more than 70 different activities. FAN only 5.

governance structure is determined by the will of firms to combine formal and informal mechanisms, according to the goals of the relationships. Our empirical results generally approve our preliminary intuitions concerning the link between the different features of the relationships and the mode of governance. Some tests found support to classic theory. For example, the fact that the presence of non-contractual asset specificity conduct firms to complement their contractual ties with a “relational contract” is consistent with the previous work of Baker-Gibbons-Murphy (2002, 2005). Moreover, we obtain other interesting results, particularly concerning the way to govern favor by firms when they need to closely collaborate. As we can observe, cooperation rests, above all, on relational mechanisms.

Our findings also invite us to reconsider the role of contracts in inter-firm relationships. The more importance attached to reputation than to contract when relationships are strategic and require tight cooperation prove that contract are not sufficient to perfectly enforce “difficult relations”. They are contested in their ability to provide all the incentives necessary to enforce agreements. For those reasons, contracts have to be seen as a generic framework. On this basis, firms build and develop relational mechanisms in order to secure and adapt their relationships. Such conclusion is consistent with the complementarity perspective of formal and informal mechanisms of governance structure (Crocker and Masten 1991, Lazzarini et al. 2004). But, as we emphasize it, contracts could be sufficient in certain case to frame relationships. For example when relationships are quite simple and implicitly imply the use of contract (exclusive contract, subcontracting).

Finally, the paper does not provide a conclusive answer to the debate of formal and/or informal modes of governance. Nevertheless, it allows us to characterize the case when firms are going to favor complementarity or substitutability approaches, confirming the fact that the real question is not to determine *whether* formal and informal modes of governance structure are substitute or complement but better *when* they are substitute or complement (Corts and Singh 2001, Lumineau 2007).

This paper also is 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 her relations with employees and customers but

also with her partners. And a good reputation would appear as a way to improve enforcement mechanisms.

Limitation and future research

There remain a number of questions that we have not addressed in this paper. These limitations to our research design provide us opportunities for future research. At first, analysis is limited by the absence of certain key data. If latter are very interesting in order to observe the interaction between goals of firms and choice in terms of governance structure, they only offer a static view of inter-firms' relationships. As a consequence, we did not have the opportunity to observe two crucial elements: the frequency and repetition of same relationships and the governance performance of those relationships. In fact, the existence of repeated interaction could evidently have an influence on the arbitration between contractual and relational approach. On other hand, measures of governance performance could be a way to legitimate previous choices of firms. Trying to incorporate those two dimensions will be helpful in order to improve the relevancy of our paper.

Secondly, we only focus on inter-firms' relationships which do not imply any transfer of property right. If it was interesting to analyze the interaction of formal and informal governance structure in this specific case, it could be now interesting to widen the scope of this analysis all while keeping the theoretical framework proposed in the paper. Moreover such reasoning will allow us to eliminate eventual bias due to the form of the relationships.

Finally, we only analyze choices of French industrial firms, relatively homogeneous and benefiting of stable institutions. An interesting direction for future research could be to examine inter-firms' relationships in other sectors or in other countries in order to study the influence of institutional framing.

Table 1 – Pairwise correlations

		GS	SI	NCAS	C	OE	F	G	SC	CS	EC	PR	S	NR
GS	Governance Structure	1,000												
SI	Strategic Intensity	0,032	1,000											
NCAS	Non-Contractual AS	0,022	0,004	1,000										
C	Cooperation	-0,056	-0,133	-0,029	1,000									
OE	Open-Ended	-0,141	0,050	0,030	0,108	1,000								
F	Function	0,037	0,070	-0,023	0,029	-0,106	1,000							
G	Geography	0,065	0,103	-0,013	-0,002	0,033	0,041	1,000						
SC	Subcontracting	0,111	-0,019	-0,055	-0,009	-0,200	-0,018	-0,066	1,000					
CS	Common Structure	-0,044	0,012	0,006	-0,021	0,087	0,076	0,001	-0,147	1,000				
EC	Exclusive Contract	0,070	-0,021	0,051	-0,030	0,073	-0,135	0,122	-0,260	-0,150	1,000			
PR	Pooling of Resources	-0,119	0,057	0,043	0,067	0,108	-0,110	-0,086	-0,366	-0,212	-0,374	1,000		
S	Size	0,003	0,049	-0,001	-0,023	-0,050	0,086	-0,039	0,092	0,033	-0,116	-0,012	1,000	
NR	Number of Relations	0,061	-0,029	0,000	0,009	-0,096	0,025	0,032	0,006	0,008	0,058	-0,053	0,003	1,000

Table 2: Multinomial Logit Regressions (1/2)

	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
SI	0.240** (0.089)	-0.101 (0.080)	0.550*** (0.125)										0.298*** (0.090)	-0.127 (0.085)	0.613*** (0.127)	0.299** (0.092)	-0.156+ (0.085)	0.607*** (0.131)
NCAS				0.404*** (0.120)	-0.156 (0.122)	0.522** (0.164)							0.434*** (0.121)	-0.157 (0.126)	0.570*** (0.164)	0.459*** (0.122)	-0.159 (0.126)	0.597*** (0.163)
C							0.215* (0.087)	-0.461*** (0.075)	-0.005 (0.124)				0.298*** (0.088)	-0.420*** (0.079)	0.159 (0.127)	0.291** (0.089)	-0.424*** (0.080)	0.167 (0.128)
OE										-0.297*** (0.088)	-0.667*** (0.076)	-0.703*** (0.124)	-0.355*** (0.089)	-0.614*** (0.076)	-0.769*** (0.127)	-0.338*** (0.091)	-0.603*** (0.077)	-0.780*** (0.128)
G																0.120** (0.039)	0.092** (0.035)	0.243*** (0.055)
S																-0.139*** (0.038)	0.081* (0.034)	-0.137** (0.050)
NR																0.127*** (0.030)	0.043 (0.028)	0.116** (0.040)
EC																		
SC																		
PR																		
CS																		
_IF_2																		
_IF_3																		
_IF_4																		
_INAF_52																		
_INAF_72																		
_INAF_74																		
Constant	-1.529*** (0.054)	-1.041*** (0.045)	-2.498*** (0.083)	-1.499*** (0.047)	-1.056*** (0.039)	-2.358*** (0.068)	-1.564*** (0.066)	-0.855*** (0.050)	-2.279*** (0.090)	-1.258*** (0.068)	-0.687*** (0.056)	-1.878*** (0.088)	-1.555*** (0.088)	-0.461*** (0.074)	-2.249*** (0.127)	-1.570*** (0.215)	-1.130*** (0.199)	-2.576*** (0.301)
Chi2	29.892			24.567			52.868			96.637			194.612			292.439		
Pseudo R2	0.0029			0.0023			0.0052			0.0095			0.0202			0.0286		
N	4755			4755			4755			4755			4755			4755		

+ p<0,5; * p<0,1; ** p<0,01; *** p<0,001

Table 2: Multinomial Logit Regressions (2/2)

	Model 7			Model 8			Model 9			Model 10			Model 11		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
SI	0.331*** (0.092)	-0.129 (0.086)	0.647*** (0.132)	0.323*** (0.094)	-0.127 (0.087)	0.582*** (0.133)	0.318*** (0.093)	-0.153+ (0.087)	0.622*** (0.132)	0.297** (0.094)	-0.136 (0.088)	0.558*** (0.134)	0.299** (0.098)	-0.173+ (0.090)	0.570*** (0.138)
NCAS	0.470*** (0.123)	-0.133 (0.129)	0.623*** (0.165)	0.475*** (0.123)	-0.133 (0.129)	0.612*** (0.166)	0.448*** (0.122)	-0.139 (0.130)	0.631*** (0.165)	0.439*** (0.123)	-0.132 (0.130)	0.611*** (0.167)	0.464*** (0.128)	-0.154 (0.134)	0.590*** (0.177)
C	0.322*** (0.090)	-0.414*** (0.080)	0.180 (0.129)	0.312*** (0.091)	-0.414*** (0.080)	0.149 (0.131)	0.325*** (0.091)	-0.414*** (0.081)	0.184 (0.129)	0.311*** (0.091)	-0.407*** (0.081)	0.160 (0.131)	0.317*** (0.095)	-0.433*** (0.083)	0.085 (0.135)
OE	-0.351*** (0.093)	-0.509*** (0.079)	-0.715*** (0.133)	-0.336*** (0.093)	-0.504*** (0.080)	-0.650*** (0.135)	-0.401*** (0.095)	-0.431*** (0.082)	-0.665*** (0.140)	-0.398*** (0.095)	-0.436*** (0.082)	-0.646*** (0.141)	-0.416*** (0.100)	-0.470*** (0.087)	-0.663*** (0.151)
G	0.094* (0.040)	0.086* (0.036)	0.217*** (0.056)	0.090* (0.040)	0.089* (0.036)	0.210*** (0.056)	0.105* (0.041)	0.108** (0.038)	0.218*** (0.057)	0.092* (0.041)	0.113** (0.038)	0.196*** (0.057)	0.098* (0.045)	0.117** (0.040)	0.230*** (0.062)
S	-0.129*** (0.039)	0.081* (0.035)	-0.128* (0.052)	-0.134*** (0.039)	0.079* (0.035)	-0.150** (0.053)	-0.174*** (0.044)	0.020 (0.040)	-0.111+ (0.060)	-0.171*** (0.044)	0.020 (0.040)	-0.112+ (0.060)	-0.160** (0.052)	0.061 (0.044)	-0.072 (0.074)
NR	0.122*** (0.030)	0.036 (0.029)	0.110** (0.040)	0.122*** (0.030)	0.036 (0.028)	0.108** (0.041)	0.120*** (0.030)	0.033 (0.029)	0.107** (0.041)	0.120*** (0.030)	0.035 (0.029)	0.103* (0.041)	0.133*** (0.034)	-0.011 (0.031)	0.086+ (0.048)
EC	-0.079 (0.136)	0.545*** (0.131)	0.318 (0.196)	-0.006 (0.141)	0.515*** (0.139)	0.561** (0.214)	-0.123 (0.143)	0.686*** (0.137)	0.372+ (0.201)	-0.109 (0.151)	0.676*** (0.145)	0.512* (0.224)	-0.148 (0.154)	0.691*** (0.152)	0.488* (0.234)
SC	-0.510*** (0.152)	0.796*** (0.127)	0.166 (0.201)	-0.432** (0.155)	0.801*** (0.130)	0.296 (0.205)	-0.478** (0.154)	0.749*** (0.129)	0.164 (0.204)	-0.324* (0.160)	0.702*** (0.134)	0.352+ (0.212)	-0.358* (0.169)	0.688*** (0.140)	0.345 (0.217)
PR	-0.452*** (0.126)	-0.077 (0.126)	-0.424* (0.191)	-0.396** (0.133)	-0.108 (0.133)	-0.187 (0.209)	-0.476*** (0.129)	-0.025 (0.127)	-0.403* (0.189)	-0.442** (0.136)	-0.055 (0.133)	-0.209 (0.210)	-0.459** (0.141)	-0.064 (0.140)	-0.167 (0.221)
CS	-0.248 (0.181)	0.107 (0.173)	-0.885* (0.364)	-0.227 (0.182)	0.084 (0.175)	-0.790* (0.366)	-0.242 (0.183)	0.158 (0.175)	-0.839* (0.363)	-0.259 (0.186)	0.159 (0.177)	-0.783* (0.365)	-0.307 (0.192)	0.115 (0.181)	-0.760* (0.377)
_IF_2				0.177+ (0.098)	-0.066 (0.088)	0.105 (0.148)				0.086 (0.104)	-0.002 (0.089)	0.094 (0.157)	0.137 (0.105)	0.003 (0.092)	0.086 (0.157)
_IF_3				0.022 (0.208)	-0.121 (0.180)	0.831*** (0.251)				0.167 (0.216)	-0.196 (0.181)	0.902*** (0.260)	0.173 (0.220)	-0.163 (0.187)	0.981*** (0.272)
_IF_4				0.458** (0.155)	0.068 (0.152)	0.508* (0.224)				0.686*** (0.181)	-0.173 (0.163)	0.627* (0.254)	0.730*** (0.192)	-0.128 (0.170)	0.692* (0.270)
_INAF_52							0.425** (0.148)	0.297* (0.136)	-0.244 (0.252)	0.405** (0.148)	0.303* (0.137)	-0.261 (0.252)	APE APE	APE APE	APE APE
_INAF_72							-0.076 (0.159)	0.623*** (0.132)	0.185 (0.222)	-0.336+ (0.188)	0.688*** (0.141)	-0.127 (0.269)	APE APE	APE APE	APE APE
_INAF_74							-0.014 (0.125)	0.320** (0.113)	0.011 (0.184)	-0.209 (0.147)	0.386** (0.124)	-0.283 (0.213)	APE APE	APE APE	APE APE
Constant	-1.277*** (0.234)	-1.464*** (0.225)	-2.510*** (0.319)	-1.414*** (0.247)	-1.424*** (0.235)	-2.720*** (0.337)	-1.111*** (0.241)	-1.577*** (0.238)	-2.623*** (0.329)	-1.137*** (0.260)	-1.582*** (0.250)	-2.696*** (0.355)	-0.357 (0.348)	-1.718*** (0.440)	-2.811*** (0.600)
Chi2	419.100			449.788			434.081			471.718			.		
Pseudo R2	0.0424			0.0449			0.0456			0.0490			0.0964		
N	4755			4755			4755			4755			4755		

+ p<0,5 ; * p<0,1 ; ** p<0,01 ; *** p<0,001

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Appendix A: Frequency distribution of variables

Variable Name	Description	Frequency
Dependent variable		
GS – Governance Structure	0: light governance structure	2 830 (59.52)
	1: relational governance structure	668 (14.05)
	2: contractual governance structure	968 (20.36)
	3: complex governance structure	289 (6.08)
Independent Variables		
SI –Strategic Intensity	1: The relationship is considered as highly strategic by firm	1,621 (34.09)
	0: otherwise	3,134 (65.91)
NCAS – Non-Contractual Asset Specificity	1: a special mode of communication dedicated to the relationship is developed and implemented	584 (12.28)
	0: otherwise	4,171 (87.72)
C – Cooperation	1: the relationship need a tight cooperation between partner	2,448 (51.48)
	0: otherwise	2,307 (48.52)
OE – Open-Ended	1: open-ended horizon of the relationship	2,877 (60.50)
	2: finite horizon of the relationship (minus than 5 years)	1,878 (39.50)
Control Variables		
EC – Exclusive Contract	1: firms have signed an exclusive contract	998 (20.99)
	0: otherwise	3,757 (79.01)
SC – Subcontracting	1: firms have put in place a subcontracting relationship	958 (20.15)
	0: otherwise	3,797 (79.85)
PR – Pooling of Resources	1: firms have pooled some resources together	1,651 (34.72)
	0: otherwise	3,104 (65.28)
CS – Common Structure	1: firms are sharing a common structure	374 (7.87)
	0: otherwise	4,381 (92.13)
Function	1: production	2,120 (44.58)
	2: provision	1,929 (40.57)
	3: research and development	291 (6.12)
	4: commercialization	415 (8.73)
Geography	1: local level	776 (16.32)
	2: regional level	1,469 (30.89)
	3: national level	1,475 (31.02)
	4: European level	825 (17.35)

	5: world level	210 (4.42)
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Appendix B: Descriptive statistics of variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
GS – Governance Structure	4755	0,73	0,98	0	3
SI – Strategic Intensity	4755	0,34	0,47	0	1
NCAS – Non-Contractual Asset Specificity	4755	0,12	0,35	0	1
C - Cooperation	4755	0,51	0,50	0	1
OE – Open-Ended	4755	0,60	0,49	0	1
G – Geography	4755	2,63	1,08	1	5
F – Function	4755	1,79	0,90	1	4
SC – Subcontracting	4755	0,20	0,40	0	1
CS – Common Structure	4755	0,08	0,27	0	1
EC – Exclusive Contract	4755	0,21	0,41	0	1
PR – Pooling of Resources	4755	0,35	0,48	0	1
S - Size	4755	4,26	1,16	0	9,42
NR – Number of Relations	4755	2,03	1,40	0	8,55

Appendix C: The example of subcontracting relationships

We can imagine a theoretical example in order to illustrate and clarify the typology used during the analysis. This example is also important because it is a way to highlight that the choice of governance structure are not only function of the type of the relationships. Yet, in our example, we emphasize a subcontracting relationship between firm X and another firm. Let us suppose that firm X does not have the knowhow¹² sufficient to produce an intermediate good necessary to her production. She is going to buy it to another firm on the market, having the choice between a large numbers of other firms.

Light Governance Structure: X can decide to buy the service to Y, without particular reason to better select Y than Z. In such case, we assume that the relationship is still quite simple and that X could change of subcontractor if conflicts occur.

Relational Governance Structure: X can try to select the more reputed partner. If the intermediate good that she needs concerns crucial activity or if it is necessary to partially adapt the intermediate good to the need of X, she is going to look at the reputation of her

¹² Or the time, or the financial mean, and so on.

future partner. That is a mean for her to secure her relationships with a partner reputed to be trustworthy and reliable. Of course, X will have to find this partner and face the high probability to pay a premium price to trade with him.

Contractual Governance Structure: X can frame her relationships with a contract. Unlike to rest on the reputation of her partner, the firm, in this case, prefers to unforeseen contingencies and redacts a contract in order to enforce agreements. Since she will redact a contract, firm X does not still sensitive to partner reputation. Of course, there are important costs associated with contracts.

Complex Governance Structure: X can choose to combine the use of reputation and contract. If she judges the contract insufficient to frame her relationships with her subcontractor, she will try to select a reputed partner in order to govern the non-contractual elements.