

JOINT VENTURE GOVERNANCE: A DISSECTION OF AGREEMENTS AND THEIR ANATOMY

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ABSTRACT OF THE DISSERTATION

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Joint venture (JV) success greatly depends on governance mechanisms such as contracts, equity shares and boards of directors. Unlike some other types of alliances, JVs are always governed by detailed legal contracts that describe how the relationships are to be structured and governed. Using a unique database of 626 JV contracts, this dissertation expands our knowledge on JV governance through three interrelated empirical studies.

The first study examines JV contracts and the institutional determinants of their complexity by drawing on institutional theory and transaction cost economics (TCE). Results indicate that contractual complexity is greater for international JVs than for domestic JVs. In addition, contractual complexity is also related to institutional variables based on the country in which the contract is enforced. For example, complexity is higher in countries with a civil law system in comparison to common law, in countries with inefficient court systems, and in countries where corruption levels are low.

The second study addresses another crucial governance mechanism in JVs: The board of directors. A board is often used to help partner firms monitor and manage the JV, align the interests of the partners and address possible conflicts (Contractor & Reuer, 2014; Cuypers, Ertug, Reuer, & Bensaou, 2017). However, little is known about what determines whether a JV board is actually established. By analyzing the contracts and by drawing on TCE and agency theories, results show that JV boards serve as complements

to JV contracts rather than substitutes. Boards are also more likely to be created for JVs which have multiple safeguards, for JVs that perform research and development, and for international JVs and JVs hosted in countries with lower quality of intellectual property rights protection.

The last study explores the relationship between equity shareholding and board participation, two important JV governance mechanisms that are presumed to be correlated. Results confirm that this correlation is strong (0.58) but not extremely high. Drawing on TCE and resource dependency theories, this chapter examines why certain joint ventures present a deviation between the percentages of board representation share versus the equity shareholding of each partner. Results indicate that board representation in international JVs tends to have a greater deviation, while JVs with deadlock clauses, large boards, and JVs hosted in stable countries deviate less.

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1. INTRODUCTION

1.1. Study motivation and background

*“...conducting alliance research was akin to practicing
medicine without dissection”
(Contractor and Reuer, 2014)*

More than fifty years of research in corporate strategic alliances has resulted in hundreds of studies ranging from higher order studies on alliance networks and contextual factors, to studies that examine more specific aspects of alliances such as purpose and scope (e.g. why firms cooperate), alliance formation (e.g. partner selection), ownership, management and governance, and success factors (Beamish & Lupton, 2016). However, only recently, researchers have begun to empirically analyze micro level details of the agreements to better understand their structure and the interaction between governance mechanisms (Contractor & Reuer, 2014; Reuer & Devarakonda, 2016).

Most alliances are governed by a contract, a legal document, which is the framework of the cooperation relationship and articulates how the alliance is structured and defined (Young & Bradford, 1977). Contract design has interested researchers because of factors such as information asymmetry, uncertainty and bounded rationality (Hart & Moore, 1988), yet empirical understanding on how these agreements work, and how they are crafted and designed, is limited. This may be due to the complexity of the agreements and the difficulty in accessing complete alliance contracts (Schepker, Oh, Martynov, & Poppo, 2014).

According to transaction cost economics (TCE), contracts help mitigate exchange hazards by setting the rules of the game in terms of scope, responsibilities of the parties,

rights, obligations, dispute resolution, duration, termination, etc. (Harrigan, 1988; Williamson, 1985). The inclusion or not of these different types of clauses affects the complexity and cost of the contract (Reuer & Ariño, 2007). Thus, the costs of crafting a contract as a governance mechanism that aligns the interests of the parties and mitigates moral hazards, are only worth if returns are expected to be higher (Argyres, Bercovitz, & Mayer, 2007).

A joint venture is formed when two or more companies combine resources to create an independent but jointly owned entity with a specific purpose and in which risks and profits are shared (Beamish & Lupton, 2009). They are a special type of alliance in which firms share equity. Sharing equity causes firms to commit more strongly to the partnership and therefore moral hazards are also higher, as well as the need to establish clear coordination and governance mechanisms (Contractor, Woodley, & Piepenbrink, 2011; Reuer & Devarakonda, 2016). Studying the micro foundations of joint ventures by using actual contract agreements allows a better understanding of alliance design and governance. This is because the contract is where the parties specify the control and coordination mechanisms that will govern the alliance (Harrigan, 1988). However, contracts are by nature incomplete since there is no way that parties can anticipate all future contingencies of their relationship (Hart & Moore, 1988), therefore the contract itself is the mechanism through which other substitutive -or complementary- governance mechanisms such as the board of directors are established. These additional governance mechanisms are more flexible during the alliance execution than the contract itself and therefore could act as its substitutes or complements.

For this dissertation, I will focus on dissecting joint venture contracts to advance research on strategic alliance governance. When an alliance's structural governance is aligned with its objectives, value is added to the alliance (Sampson, 2004), therefore studying joint venture design through a dissection of contracts and displaying their anatomy can improve the understanding of how managers can deploy better governance structures that maximize joint venture value creation. Additionally, since joint ventures require great preparation and negotiations, identifying and understanding key areas where to focus negotiation efforts may help increase JV success.

The dissertation has seven chapters. This introductory chapter describes its motivations and dives right into describing the anatomy of joint ventures by identifying the most important clauses of the joint venture contract. The second chapter is a broad account of the literature in alliance and joint venture governance. Chapter three, describes the process of collecting 626 joint venture contracts from the securities exchange commission and also provides guidelines for future data collection efforts from this enormous information repository. Chapters four, five and six are interrelated empirical studies on joint venture alliance governance. Finally, chapter seven concludes and provides applications and avenues for future research.

1.2. Research questions and objectives

Joint venture contracts allow researchers to answer previously unanswered questions, especially in terms of governance design. The contract itself is an important governance mechanism, and while transactional characteristics that affect the complexity of these contracts are known, little attention has been paid to the *choice of law* clause of alliance contracts and how country level and institutional factors of the chosen legal system

influence the complexity of a joint venture contract. Therefore, the first empirical study, in Chapter 4, explores country level determinants of joint venture contractual complexity.

Another important governance mechanism is the board of directors or management committee. Similar to what occurs in firms, the board is an important mechanism that minimizes agency problems. However, a great number of joint ventures do not formally establish boards. Why is a board of directors not always part of the initial structure of the joint venture? What determines whether or not a joint venture creates a management committee? These questions will be answered in the second empirical study (Chapter 5).

Broad generalizations have classified joint ventures based on equity distribution, either majority owned or fifty-fifty joint ventures. This distribution has been assumed to be equal to the decision power each partner has in the venture; however, new studies have shown that there are other sources of power such as percentage of participation in the board of directors. There is a high correlation between equity distribution and board participation (Cuypers et al., 2017), however some joint ventures deviate from this correlation. Therefore, what are the characteristics of joint ventures in which the representation on the board is not correlated with the equity distribution? This will be explored in the last empirical study (Chapter 6).

By analyzing the actual legal documents, namely the contracts, it is possible to open the black box of joint venture governance structure since it is often assumed that joint ventures are homogeneous. Moreover, it is often assumed that the contractual complexity of alliances is a continuum. For example, it is assumed that license

agreements are less complex than joint ventures while there could be joint ventures that are much simpler than most license agreements.

Finally, while most of the literature shows that administrative controls are stronger in equity alliances (Ebers & Oerlemans, 2016) and that they always have a board and so on, I gain insight into different kinds administrative controls within joint ventures and how they interact. In sum, this dissertation deepens our understanding of joint venture governance design by focusing on widely used types of governance mechanisms in joint ventures - namely the contract, the board and equity share- and how they interact. Additionally, I demonstrate a thorough method to find joint venture contracts that practitioners and researchers can use to further advance alliance research through a contractual lens. The next section describes the joint venture contract and its most important clauses. This anatomical perspective will be the foundation of this dissertation.

1.3. Anatomy of a Joint Venture

1.3.1. The joint venture contract

A joint venture (JV) is a form of cooperation between two firms in which they combine resources for a common purpose while keeping their economic independence (Kogut, 1988). More so than any other kind of alliance, joint ventures tend to require specific technical and legal instructions, and a high level of commitment from the parties; therefore, JV procedures and rules must be specified in a written contract. A written contract is a legally binding document signed between two or more parties that creates obligations between them (Barnett, 2010; Macneil, 1974). The contract is key to the formation and success of the joint venture because it defines the structure of the cooperation (Luo, 2002). The contract sets the rules, defines the scope of the alliance,

establishes the contributions, responsibilities, rights and obligations of the parties, helps manage the venture, increases coordination, protects the interests of the partners and guarantees that the parties have a common understanding of the venture (Young & Bradford, 1977). Additionally, the contract mitigates opportunism because it helps anticipate and plan for any management and legal issues, with the latter being key to solving problems in a court (Sanga, 2014).

The contract is also a key aspect of successful mutual understanding, and it should be clear and concise in order to avoid misinterpretations. While contracts differ, there are common elements in all joint venture contracts such as formation, scope, management, safeguards, participation share and operation of the venture (Harrigan, 1988; Lima, 2008; Young & Bradford, 1977). The next section describes the anatomy of joint venture contracts by describing their clauses.

1.3.2. Joint venture contract provisions

A worldwide survey from the International Trade Centre (ITC) found that joint venture contracts are the second most important type of trade contracts after sales and purchase contracts (International Trade Centre UNCTAD/WTO, 2004). Therefore, a committee of over 100 lawyers and practitioners with experience in JVs from all over the world created joint venture agreement models for contractual joint ventures and incorporated joint ventures (International Trade Centre UNCTAD/WTO, 2005). Using these model agreements, along with models created by the American Bar Association (American Bar Association, 2006) and by Glover and Wasserman (2003), I create a list of fundamental provisions that all joint venture contracts should have, and classify them in six broad categories (see table 1.1.).

Table 1.1. Joint venture provisions

Formation Clauses	Preamble or Recitals
	Contractual definitions
	Description of the parties
	Form of joint venture
	Name of the joint venture
	Location
	Objectives and scope of the Joint Venture
	Equity share
	Contributions of the Parties
	Parties duties tasks and responsibilities
Management clauses	Organization and management
	Appointment of key personnel
	Right to recruit and dismiss personnel
	Information access
	Actions requiring consent (vetoes)
	Change in control of a party
	Replacement of a party
	Call options
	Put options
	Management committee (board of directors)
	Voting rights
	Meetings
	Time deadlines
	Performance-production mandates
Financial planning clauses	Distribution in profits and losses
	Tax considerations
	Accounting and auditing rights
Facilities and operation clauses	Products to be produced
	Exclusivity
	Sales territory
	Intangible assets, know-how and IPR
	Research and development
Legal clauses	Duration of the Joint Venture
	Termination of the Joint Venture
	Hardship
	Force Majeure
	Confidentiality
	Liability
	Breach of obligations
	Non-compete/non -solicitation
	Deadlock
	Applicable law
	Resolution of disputes
	Arbitration/mediation
Miscellaneous clauses	Miscellaneous clauses
	Appendixes
	Extra license agreement
	Ancillary agreements

1. Formation

Preamble or recitals: The preamble establishes the context of the agreement. A joint venture contract usually has a brief introduction which states the date and the names of the parties entering into the agreement. It may also have a short description of the venture and its objective (International Trade Centre UNCTAD/WTO, 2004).

While recitals are not mandatory, they provide a general description of the agreement, that can actually be useful for interpretation and resolution of disputes in case of conflict (Lima, 2008).

Contractual definitions: A thorough contract has a contractual definitions section in which highly specific terms of the contract are defined. It includes keywords and their definitions to avoid misinterpretation of the concepts within the contract. Precise definition of all terms creates uniformity and avoids ambiguity. Contractual definitions are common practice in international contracting to avoid misunderstandings, since a term in one country may have a different meaning in another. The higher the complexity of the contract the higher the likelihood that it will have a definitions section. In a nuanced contract, even the definition of a common word such as *day* is important because it can either be working or calendar day. Therefore, the more specific the definitions, the better (Lima, 2008)

The parties: The agreement should have a clear identification and description of the parties, their legal name and status and address/location (International Trade Centre UNCTAD/WTO, 2004). This section is important because it identifies the bearer of the legal rights and obligations of the contract (American Bar Association, 2006; Lima, 2008).

Form of joint venture: The form of joint venture should be specified in the contract since different types have different consequences (Levinson & Lawlor, 1988). Parties can create a separate legal entity (incorporated joint venture) or form a contractual joint venture (Lima, 2008).

Name of the joint venture: Joint ventures usually have a name in order to function commercially, especially in incorporated joint ventures since a new company (with a new name) is created (Lima, 2008).

Location: The location of the venture should be specified in the contract. This has important legal, financial and operational considerations (Lima, 2008).

Objectives, purpose and scope of the joint venture: Usually seen as an extension of the preamble, this clause focuses on the objectives of the joint venture. It clearly defines the purpose of the joint venture and the activities that belong to the venture and to each party (American Bar Association, 2006; Levinson & Lawlor, 1988). This is important since the scope is often used by courts when solving a dispute. The scope of operation may also broadly define the joint venture duration, business activities, products and geographic coverage (Levinson & Lawlor, 1988; Lima, 2008).

Contributions of the parties, equity share: Parties should determine the value of their contributions and establish their participation share in the joint venture. These contributions can be in cash, in kind (assets) and non-cash contributions such as know-how or intellectual property. The nature and value of the contribution should be indicated in the contract (Young & Bradford, 1977). The valuation of non-cash contributions is especially difficult to measure and can actually diverge from what was initially negotiated in the formation phase (Contractor & Reuer, 2014). The laws of the

country in which the contract is enforced, namely applicable law, can enforce monitoring on these valuations, which are agreed upon the parties and are usually aligned as much as possible with market prices. Ideally, the contract should specify how and when these contributions will be made and the accounting procedures that will be used for the joint venture (Lima, 2008).

Parties, duties, tasks and responsibilities: The contract should specify the duties and responsibilities of the joint venture and each individual party during the formation and implementation stages. Ideally it should include a schedule of the implementation stages of the joint venture (Hooton, 1993; Lima, 2008), as well as the technical and commercial commitments of the parties.

2. Management (governance)

Organization and management: The contract should specify details of the joint venture's management, e.g., a single party or a combination of parties. In cases where there is an independent manager, the contract must specify which party appoints the manager and his/her term duration (American Bar Association, 2006).

Appointment of key personnel: The JV agreement should specify who will appoint other key officers or directors such as CFO and board members. Additionally, it is important to describe the selection process for key personnel (Guterman, 2002).

Right to recruit and dismiss personnel: The JV contract should include aspects related to human resources, specifically in terms of recruiting, training and dismissal by assigning specific roles in which parties have the right to hire personnel and clarifying under which conditions (Lima, 2008).

Information access: While the parties' access to the information of the JV is a right, the contract should specify whether the co-venturers have limited access to specific information of the JV that might be sensitive to one of the partners such as books and other records (American Bar Association, 2006). Sometimes, restrictions to access of information are determined by the governing laws of the contract (International Trade Centre UNCTAD/WTO, 2004).

Actions requiring consent (vetoes): In order to determine the level of autonomy of the joint venture, it can be specified in the contract which actions undertaken by the JV need the approval of the parties or management committee. These may include actions such as name change, ownership interests transfer, acquisitions, investments, establishment of subsidiaries, among others (American Bar Association, 2006). Veto power on these actions should be specified in the contract (Young & Bradford, 1977).

Changes in control: The parties should anticipate in the agreement possible changes in control of a party over the JV. Additionally, they can specify how changes in control could happen and should happen. (International Trade Centre UNCTAD/WTO, 2004)

Replacement of a party: To anticipate any changes in the composition of the ownership of the JV, the contract should include provisions with instructions for the transfer or sale of shares between partners or to third parties (International Trade Centre UNCTAD/WTO, 2004). Sometimes the option to be the first to offer is given to the other partner and specified contract (Young & Bradford, 1977).

Call options: A call is the right of a party to buy the shares of the co-venturer at a predetermined price formula. It can be a *simple call*, when any party is allowed to call for the coventurer's shares at a predetermined price formula; a *call with put offer*, when a

party can call the shares of its coventurer at any price but must also put its shares at the same price; and a *call or liquidate*, when the venture has to be liquidated if a party refuses to put the shares of the co-venturer (Young & Bradford, 1977).

Put options: A put is the right of a party to sell its shares first to the co-venturer at a predetermined price formula. It can be a simple put, when any party can put its shares for the coventurer at a predetermined price formula; a put with call offer, when a party sets the price of its put but must also take a call of the coventurer's shares at the same price; and put to or liquidate, when the venture has to be liquidated if a party refuses to buy the shares of the coventurer (Young & Bradford, 1977).

Management committee or board of directors: The parties decide whether the management of the joint venture includes a board of directors and specify in the contract its size, composition, functions and responsibilities, as well as the number of members each party nominates for the board and how the members will be elected and replaced (Glover & Wasserman, 2003; International Trade Centre UNCTAD/WTO, 2005).

Voting rights: In addition to equity share, it is important to define the voting rights of the parties. Usually voting rights are equal to equity share, but sometimes there are different classes of shares each with a different number of votes. This means that even when a joint venture has an unequal number of equity shares, the shares can be assigned different numbers of votes so the voting rights of the JV are equal. Voting rights can easily change the control and power of the joint venture. Finally, voting rights can also be indirectly assigned through boards or management committees (Glover & Wasserman, 2003).

Meetings: A detailed contract includes information about regular meetings of the parties or board of directors, including location, frequency, duration, notice requirements and

quorum (Guttermann, 2002), as well as the details regarding calling special meetings. In order to give the board the ability to act on short notice, the contract may include details on alternative forms of meetings like teleconferences or on providing written consent (Glover & Wasserman, 2003).

Performance/production mandates: Different types of quotas can be implemented in the agreement according to the type of collaboration and its scope. For example, if the scope of the joint venture allows each partner to market the joint venture's products, sales targets could be implemented to guarantee the best efforts from each of the parties. On the other hand, if one of the partners is responsible for production or sales, the coventurer should also establish a minimum quota or target for specific periods of time (Glover & Wasserman, 2003).

3. Financial planning.

Distribution of profits and losses: The contract should specify if profits (or dividends) will be distributed or reinvested in the venture. Also, it should specify the percentage of the share in profits or dividends each partner has the right to and if these profits are tied to the equity ownership percentage of each partner or if they follow a predetermined formula (American Bar Association, 2006; International Trade Centre UNCTAD/WTO, 2004; Young & Bradford, 1977)

Tax considerations: A joint venture has tax consequences for the parties. Therefore, the tax structure of the partnership should be clearly defined in the contract (American Bar Association, 2006).

Accounting and auditing: The rules of accounting and auditing are usually determined by the laws of the country where the joint venture is located. If they are not, the contract

should specify which accounting standards will be adopted (International Trade Centre UNCTAD/WTO, 2004).

The contract should also stipulate who will audit the joint venture and whether the audit is provided by the parties or externally (American Bar Association, 2006). This type of clause is of special importance in international joint ventures in which the foreign partner is particularly interested in keeping a close eye on the JV's accounts (International Trade Centre UNCTAD/WTO, 2005)

4. Facilities and operations.

Products to be produced: This clause describes the products or services provided by the joint venture. In order to precisely define the products which are to be manufactured by the joint venture, the contract should contain sufficiently detailed descriptions of each product in question (Guttermann, 2002).

Exclusivity: It is important for the parties to establish in the contract which features of their relationship, such as products or territories, are exclusive. Occasionally, exclusivity includes a right of first refusal provision in which any business or partnership opportunity identified by one of the parties should be offered first to the coventurer (Glover & Wasserman, 2003).

Sales territory: this clause determines the geographic territories where the JV will commercialize its products and helps determine the market boundaries between the partners and the venture (Guttermann, 2002).

Intangible assets, know-how and intellectual property rights: If the product requires a special technology, know-how or patent provided by one of the parties it should be specified in the contract and how it is protected. In this case, the conditions of

technology transfer should also be included. These conditions should be in the JV contract or in a separate license agreement (International Trade Centre UNCTAD/WTO, 2004)

5. Legal matters

Duration of the joint venture: The duration of the joint venture is negotiated by the parties according to the objective of the venture. This should be specified in the contract and also mention if this term is renewable or not. If the parties do not mention the term it is assumed that the JV will run indefinitely (Gutterman, 2002).

Termination of the joint venture: While some joint ventures have a specific termination date because of a specific objective or project, most parties are optimistic about their upcoming relationship and may not pay enough attention to possible causes of termination (Harrigan, 1988; International Trade Centre UNCTAD/WTO, 2004). It is important that the parties specify possible causes and consequences for the termination of the relationship such as mutual agreement, deadlock between the parties, breach of contractual obligations, etc. (American Bar Association, 2006). Additionally, the termination clauses should include the procedures for the liquidation of the business entity. While they can be tailored to the needs and wants of the parties, dissolution procedures are usually determined by the governing law of the contract (Gutterman, 2002).

Hardship: While not too common in joint venture contracts, clauses that alleviate the pressure on a disadvantaged party in certain situations are important. In cases of adversity that decrease the performance of one of the parties, the parties should be able to renegotiate the contract in good faith terms (Glover & Wasserman, 2003).

Force Majeure: This clause refers to unforeseeable events beyond control of the parties and exonerates them from being accused of breach of contract. These events impede one of the parties from performing an obligation. Force majeure events are not standard worldwide, therefore they should be specified in the contract. The type of law (common vs civil) may affect force majeure clauses, being more specific in common law and more generic in civil law (International Trade Centre UNCTAD/WTO, 2004).

Confidentiality: This type clause or agreement is a safeguard for the parties. It protects information including know-how and information that should not be shared (American Bar Association, 2006; Hooton, 1993).

Liability: In contractual joint ventures it is assumed that both parties are liable unless specified differently. The contract should specify the liability of the partners (International Trade Centre UNCTAD/WTO, 2004).

Breach of obligations: The agreement should include provisions regarding defaults from the parties, remedies and consequences (American Bar Association, 2006; International Trade Centre UNCTAD/WTO, 2004)

Non-compete/non -solicitation: The JV contract should have non-compete clauses in order to establish the rules of recruiting employees during the existence of the JV and/or after. It should stipulate whether the parties can enter agreements with possible competitors and any limitations on activities that compete with the JV (American Bar Association, 2006; International Trade Centre UNCTAD/WTO, 2004).

Deadlock: Deadlock occurs when the parties or management committee cannot agree on an issue in more than two consecutive meetings (Buchel, 2003). Avoidance and resolution of deadlock clauses should be in place if the parties desire to protect

themselves from deadlock and the costs of its solution. Deadlock can even be cause of sudden termination of the partnership and it can be used by the parties as an exit strategy that does not breach the contract (Landeo & Spier, 2014). A deadlock clause solves the situation by, for example, calling for extra meetings or assigning temporary decision-making power to the manager (Glover & Wasserman, 2003; Hooton, 1993).

Applicable or governing law: A crucial part of any joint venture contract are the laws of the country that will interpret it and enforce it. The interpretation, regulation and enforcement of the contract is ruled by the legal framework and courts of the country that in which the contract is subscribed (Guterman, 2002). It can be either the country of one the parties or a third country. The place of enforcement of the contract is negotiated in advance between the parties (Savare, 2004).

Resolution of disputes: Ideally a contract addresses most aspects of the joint venture relationship to avoid conflict, however, in case of disagreement regarding operation and day-to-day management which could affect the activities of the joint venture, an internal and quick mechanism for the resolution of disputes should be included in the contract (Levinson & Lawlor, 1988).

Arbitration: When conflicts cannot be solved amicably and affect the partners' rights to the joint venture, such as profits, but do not affect the daily operations of the joint venture, another dispute resolution mechanism should be specified in the contract. This should stipulate an external institution that will address the conflict such as a court or arbitration tribunal (Levinson & Lawlor, 1988).

6. Miscellaneous

Miscellaneous clauses: Most JV agreements include miscellaneous clauses which are additional provisions that the parties consider important such as procedures for notices or contractual amendments and other types of instructions that the parties deem necessary (Guttermann, 2002).

Ancillary agreements: While the principal joint venture agreement addresses critical aspects of the structure and operation of the joint venture, it is common that the joint venture partners address additional issues of the relationship in the ancillary agreements (Babitz & Curran, 2003). Therefore, a joint venture contract is sometimes complemented by other agreements between the parties such as supply, services, purchase, distribution, R&D and license agreements. These are mentioned in the joint venture contract but are separate agreements that are often annexed to the JV contract (Guttermann, 2002).

2. LITERATURE REVIEW: ALLIANCE AND JOINT VENTURE GOVERNANCE

Strategic alliances are defined as interfirm collaboration in which two or more firms voluntarily pool complementary resources to achieve greater efficiency and reach a mutual goal (Contractor et al., 2011; Mitchell, Dussauge, & Garrette, 2002; Parkhe, 1993). They are classified as hybrid governance structures because they lie between markets and hierarchies and exist precisely because they can be more cost-efficient than either markets or hierarchies on their own (Hennart, 2006). However, firms' self-interests tend to favor individual outcomes that may harm cooperation and its economic output (Parkhe, 1993; Williamson, 1985). A key question is then how firms maximize the net benefits of an alliances through coordination while minimizing the costs that opportunistic behaviors entail (Gulati & Singh, 1998; Hansen, Hoskisson, & Barney, 2008; Nickerson & Zenger, 2004). Therefore, nicely summarized by Reuer and Klijn (2018), different sets of decisions should be made in terms of alliance governance. First, in terms of whether to form an alliance or use any other governance mode such as acquisitions. Second, decisions must be made in terms of alliance type which are usually classified into non-equity and equity alliances. The third decision is related to the internal governance structure or design of the type of specific alliance that has been chosen (Reuer, Ariño, Poppo, & Zenger, 2016). This dissertation lies on this third level of alliance governance decisions, the governance structure of an alliance, and it focuses on joint venture structure and governance mechanisms.

2.1. Governance mode choice

The decision whether to enter an alliance versus other types of governance types has been widely researched. Hundreds of studies have tried to explain why firms choose alliances as governance structures. For example, alliances vs acquisitions (Hagedoorn & Duysters, 2002; Kogut & Singh, 1988; Villalonga & McGahan, 2005; Wang & Zajac, 2007; Yin & Shanley, 2008), alliance vs divestitures (Villalonga & McGahan, 2005), and joint ventures vs acquisitions (Hennart, 1988).

In terms of theories explaining governance choice and specifically joint ventures, Kogut (1988) describes three different theoretical lenses that have helped explain the establishment and choice of joint ventures over other governance structures: transaction cost economics (TCE), resource-based view (RBV), and organizational learning (OL).

TCE has been the most popular theory to explain firm boundary decisions such as make, buy, or ally (Geyskens, Steenkamp, & Kumar, 2006). For instance, TCE sheds light on joint venture choice as a hybrid governance mechanism that lies between markets and hierarchies which helps minimize costs by reducing appropriation hazards and uncertainty and by aligning the interests of the parties (Gibbons, 2005; Hennart, 1988; Kogut, 1988; Mowery, Oxley, & Silverman, 1996; Teece, 1996). For example, JVs are preferred over other types of alliances for joint R&D collaborations (Osborn & Baughn, 1990), and over wholly owned subsidiaries in the case of FDI in less developed economies (Beamish & Banks, 1987).

A second theoretical lens derives from the resource based view (RBV) through which firms strategically choose joint ventures to reach competitive advantage relative other firms (Barney, 1991; Kogut, 1988).

The third perspective is related to organizational learning (OL) through which joint ventures are a way to acquire or retain knowledge related capabilities (Inkpen, 2008; Kogut, 1988).

Additionally, other theories have been used to enlighten governance type choice. For example, signaling theory explains choice of market entry mode between joint venture and acquisitions, by stating that companies are more likely to acquire rather than form a joint venture with a firm whose initial public offering (IPO) was executed through a reputable financial institution (Reuer & Ragozzino, 2012). Similarly to RBV, knowledge based view (KBV) points out that the reason whether to choose an alliance or an acquisition is based on the complementarity of the partner's resources, knowledge and relational capabilities (Wang & Zajac, 2007). Resource dependence theory shows that alliances are a way to manage interdependence between companies (Pfeffer & Nowak, 1976), while institutional theory implies that alliances are often the result of adaptation to external forces Garcia-Pont and Nohria (2002). Social exchange theory brings a more relational aspect to alliances and explains that alliances are favored when the exchange of resources is more social than economical (Das & Teng, 2002). Finally, network theory also has a say in alliance choice and formation in the sense that firms participating in networks have higher chances of survival because of the efficiencies generated by the network (Uzzi, 1997). While, most the aforementioned theories have in common that choice of hybrid organizational structure is a means to minimize the risks of opportunism, Contractor and Woodley (2009) find support for equity alliance choice when the technology holder has stronger bargaining power, when patents play an important role and when future technology transfers are expected from the alliance.

2.2. Type of alliance choice

If properly aligned with the alliance purpose, the type of alliance further reduces moral hazards while increasing cooperation (Oxley & Sampson, 2004). The type of alliance is also a reflection of the partner's potential benefits and perceived risks (Muthusamy, 2014).

The realm of alliances includes all kinds of governance or organizational arrangements, which span from license agreements to equity joint ventures. Contractor and Lorange (1988), offer a thorough review and description of all these kinds of alliances. In terms of type of alliance choice, the alliance governance literature has traditionally classified this wide array of governance structures into equity vs non-equity alliances (Hennart, 1988; Oxley, 1997). Another common categorization of alliance type divides them into contractual alliances, minority equity alliances, and joint ventures (Teng & Das, 2008). However, recent research has opened the black box of alliance governance modes and expands non-equity governance modes into low, moderate and high integration, with equity joint ventures at the end of the continuum with the highest level of integration (J. Choi & Contractor, 2016).

The choice between alliance type has also been studied extensively (Colombo, 2003; Contractor & Kundu, 1998; Erramilli, Agarwal, & Dev, 2002; Gulati, 1995; Hennart, 1988; Teng & Das, 2008). And just like in governance type choice, TCE is the most widely theoretical framework to explain alliance type choices (Teng & Das, 2008). Other theories have also been used, for example, knowledge-based view (KBV) offers an alternative explanation for joint venture choice over other types of alliance in terms of the type of knowledge exchanged and uncertainty reduction. When knowledge complexity is

high, opportunism is lower and therefore less hierarchical alliances are needed. While if the knowledge is codifiable and therefore easily copied, a more hierarchical structure such as a joint venture is more likely to occur (Contractor & Ra, 2002).

Other theories have also been used to explain alliance choice such as resource based view of the firm (Das & Teng, 2000; Mellewigt & Das, 2010), resource dependence and interorganizational learning (Muthusamy, 2014), agency theory (Reuer & Miller, 1997), and social network theory (Wassmer, 2010).

2.3. Alliance governance structure

After an alliance type has been chosen, a governance structure decision follows. Just like alliance type decision, properly aligned governance mechanisms reduce costs and increase alliance efficiency (Sampson, 2004). The structuring of alliance governance allows coordination and monitoring of the activities and partners of the alliance while minimizing the risks of opportunism (Reuer & Devarakonda, 2016). Additionally, research on alliance governance has recently explored alliance structure in more detail (Contractor & Reuer, 2014; Reuer, 2012), especially formal governance mechanisms such as contracts (J. Kim & Globerman, 2017; Luo, 2002; Luo, 2005; Parkhe, 1993; Reuer & Ariño, 2007), steering committees and boards (Cuypers et al., 2017; Reuer & Devarakonda, 2016) and other informal mechanisms such as relationships (Poppo & Zenger, 2002; Zaheer & Venkatraman, 1995).

Alliance success is related to how well the relationship is designed and governed (Lee & Cavusgil, 2006). A governance structure is a mix of governance mechanisms that support, control and guide economic transactions (Parkhe, 1993). Similarly, as with governance type and type of alliance choices, in order to reduce uncertainty and

opportunism and therefore minimizing transaction costs, TCE also offers explanations on optimal alliance governance structures (Gulati, 1995; Reuer, Ariño, & Mellewigt, 2006).

According to TCE governance structures vary in degree of autonomy, incentives, administrative controls and adaptation (Ebers & Oerlemans, 2016; Williamson, 1996; Williamson, 1991). Within these dimensions there are specific governance mechanisms such as steering committees as an administrative control that guides partner's behaviors in an alliance (Ebers & Oerlemans, 2016; Reuer & Devarakonda, 2016). Administrative controls are therefore especially relevant in these hybrid governance structures, since there is less partner autonomy and therefore mechanisms that mandate behaviors are important (Ebers & Oerlemans, 2016).

Some common governance mechanisms are based on formal mechanisms such as contractual based governance (Kale, Singh, & Perlmutter, 2000; Reuer & Ariño, 2007) and control through equity share (Luo, Shenkar, & Nyaw, 2001). On the other hand, relational governance mechanisms such as management committees or boards which create trust through partner interaction can also help mitigate opportunism (Dyer & Singh, 1998; Reuer, Klijn, van den Bosch, Frans A, & Volberda, 2011). Both formal and relational governance mechanisms positively affect alliance performance (Poppo & Zenger, 2002). And while both are not mutually exclusive (Cao & Lumineau, 2015; Faems, Janssens, Madhok, & Van Looy, 2008; Poppo & Zenger, 2002), they tend to be differentially preferred depending on the characteristics of the alliance and the context (Hoetker & Mellewigt, 2009; Krishnan, Geyskens, & Steenkamp, 2016; Lee & Cavusgil, 2006; Mayer & Argyres, 2004).

And while formal and relational governance mechanisms help reduce alliance transaction costs, the design and implementation of these mechanisms is also costly (Das & Teng, 1998; Williamson, 1985). Therefore, there should be a balance between the intensity governance mechanisms costs and their cost minimization outcomes. For example, the costs of drafting a written contract should be less than the reduction of transaction costs that the contract offers by mitigating uncertainty and exchange hazards (Argyres et al., 2007; Williamson, 1991).

In the next section I will focus on the administrative control of joint ventures and their governance mechanisms, since JVs offer special complexities that could contribute to governance studies.

2.4. Administrative controls in joint ventures and their governance mechanisms:

Joint ventures as business entities are quite ancient. The term is related to “joint adventures” and can be traced back to Babylonian times when merchants, in order to spread costs and risks, pooled the resources needed to carry a large commercial project, usually an expedition (Nichols, 1950). They were also used during the Roman Empire, specifically in Venice a type of joint venture was formed when high amounts of capital were necessary for sea expeditions (Lane, 1944).

Today joint ventures share most of the characteristics of old times such as the pooling of resources for a specific purpose and equity share, but are now more regulated and embrace all industries and types of projects (Nichols, 1950). Joint ventures are especially difficult to manage since they are a mix of control and ownership (Beamish & Lupton, 2009), in which the risks of opportunism are higher and therefore include greater controls through governance mechanisms such as boards and equity share (Contractor et

al., 2011; Reuer & Devarakonda, 2016). Joint venture governance and control has been traditionally operationalized as shared control, dominant control (Merchant, 2014) and split control (C. B. Choi & Beamish, 2004), however, more nuanced definitions and operationalizations of JV governance and control are needed since different control mechanisms are being implemented at the same time.

Before formation of the joint venture, the parties must decide and negotiate how the partnership will be structured and governed. This is a crucial aspect of the overall alliance negotiation which is often overlooked by managers, even though this contractual phase is costly and important for the success of the partnership (Sampson, 2004). In this phase, the contract is drafted and ex-ante important decisions on additional governance mechanisms are made such as of percentage of equity share, management and board representation, (Beamish & Lupton, 2009). These mechanisms should be specified in the contract; therefore, the contract is not only an important formal governance mechanism but it is also the one that determines and specifies most of the other ex-ante governance mechanisms that will govern the joint venture. Again, an important balance should be found between the costs of implementing governance mechanisms and their reduction of moral hazards and positive effects on coordination. Overly complex governance structures are not only costly to implement but can increase bureaucracy in alliances and decrease their performance (Sampson, 2004).

The contract: The written agreement is an important governance mechanism in alliances (J. Kim & Globerman, 2017), and especially important in joint ventures. The contract establishes ex-ante the responsibilities and obligations of each party in a partnership (Abdi & Aulakh, 2012; Harrigan, 1988; Luo, 2005). It also helps mitigate

exchange hazards and opportunism by legally managing the relationship (Poppo & Zenger, 2002; Williamson, 1985). Additionally, the contract also reduces uncertainty by laying out the procedures to be followed in case of possible future contingencies and conflicts (Lusch & Brown, 1996; Ring & Van de Ven, 1992).

The legal agreement is also an important coordination mechanism through which the parties align their interests (Schepker et al., 2014). Therefore, the contract not only includes enforcement clauses but includes also ones such as the roles and responsibilities of each partner (Reuer & Ariño, 2007), communication and tasks (Faems et al., 2008), management (Klijn, Reuer, Volberda, & van den Bosch, 2017) and resolution of disputes (Lumineau & Malhotra, 2011).

The completeness or specificity of a contract is therefore key in a relationship and since it is impossible to anticipate for all future contingencies in a relationship a contract may still be object of opportunistic behavior (Luo, 2002). Additionally, the more specific the contract, the higher the costs of negotiation and drafting which increase the transaction costs and therefore make the governance choice less attractive, therefore the balance between specific contracts and flexibility within the alliance is a key aspect of its governance.

The alliance contract literature is abundant (Argyres et al., 2007; J. Choi & Contractor, 2016; Hagedoorn, Cloudt, & Van Kranenburg, 2005; Weber, Mayer, & Macher, 2011). On the other hand, research on the complexity of alliance contracts are less popular and have focused on antecedents based on partner characteristics such as firm size, previous experience and trust (Argyres et al., 2007; Gulati, 1995); and alliance characteristics such as type, duration and asset specificity (Poppo & Zenger, 2002; Reuer

& Ariño, 2007). Finally, there are only a handful of studies on joint venture contractual complexity such as Luo (2005), who JV agreements through surveys but does include the effect of environmental characteristics on contractual complexity. Chapter four expands on this issue by exploring country level variables that affect joint venture contractual complexity.

Finally, the joint venture contract describes how the venture is going to be managed, and it does so by specifying other control and decision mechanisms that will help govern the alliance such as equity share and board of directors or steering committee (Harrigan, 1988).

Equity share: Shared equity is a main characteristic of joint ventures and it helps coordinate and control the partnership (Kamminga & Van der Meer-Kooistra, 2007; Teng & Das, 2008). The share of ownership is a key governance mechanism that signals the parties' degree of control and power in the JV (Mjoen & Tallman, 1997). It is an important control mechanism which provides ownership representation and residual rights of control by creating a mutual hostage situation in which both parties contribute capital, assets or knowledge and where the shared profits are dependent of the venture's performance (Kogut, 1988; Oxley, 1997). And while the literature has often used equity share as a proxy for control, this is not always the case (Madhok, 2006), since there are other control mechanisms such as board representation which can shift this balance. Equity share has been widely used to determine effective governance of JVs (R. J. David & Han, 2004) and performance (Dhanaraj & Beamish, 2004). However, as previously mentioned, equity share is not the only control mechanism in JVs. It usually interacts with other mechanisms such as board representation. The most common relationship

between JV control mechanisms is the one between equity share and board representation which presents a high correlation (Cuypers et al., 2017). Nevertheless, there are many cases in which board representation clearly deviates from equity share, changing the control of the JV (Cuypers et al., 2017). This is analyzing boards in JVs first as a governance mechanism in its own right and then in relationship with equity share is important in order to better understand JV governance.

Boards of Directors: Just like in regular firms, alliances also use boards or management committees. These differ from traditional boards since in addition to regular monitoring roles, they help align the interests of the parties (Reuer & Devarakonda, 2016). These management committees are a substitutive governance mechanism to the contract in the sense that they can also help reduce exchange hazards and coordination problems and adapt to contingencies that were not anticipated in the contract (Kumar & Seth, 1998; Reuer & Devarakonda, 2016). However, the board can also be a complement to the contract as an additional monitoring mechanism that supports a complex relationship (Contractor & Reuer, 2014). These contradicting views are empirically addressed in chapter five.

In the case of Joint ventures, the management committee or board, in addition to coordination and control functions, has an active managerial role and high decision power and is therefore considered a key governance mechanism in JVs (Harrigan, 1988).

Research on the determinants of the existence of management committees in non-equity alliances is quite recent (Reuer & Devarakonda, 2016), and has not been established for equity alliances, since it is assumed that they all have committees. This is not always the case. Chapter five of this dissertation explores the determinants of the

establishment of boards in joint ventures. Research has also recently explored relationships between governance mechanisms such as equity share and board representation in joint ventures (Cuypers et al., 2017). Chapter six of this dissertation, expands on this relationship since in addition to equity share, partner control through board representation is crucial in JVs.

Finally, it is worth mentioning that other governance mechanisms are identified as relational since alliances are governed by relationships (Poppo & Zenger, 2002). Trust is another mentioned relational mechanism (Cao & Lumineau, 2015; Faems et al., 2008), that can even reduce the need of formal mechanisms such as equity share (Gulati, 1995). However, some scholars argue that trust is just the outcome of relationships and therefore not a governance mechanism per-se (Cao & Lumineau, 2015). Either way, relationships and trust also help reduce the uncertainty of opportunism and mitigate exchange hazards (Gulati, 1995; Poppo & Zenger, 2002). Additionally, the literature on trust in alliances has emphasized its importance as a governance mechanism that helps minimize conflict, facilitate knowledge exchange and consolidate enduring and stable partnerships (Lee & Cavusgil, 2006).

In this broad review of the literature I describe alliance governance as a set of gradual decisions that start from governance type choice, continue with alliance type choice, and then with alliance governance design. I finalize by narrowing it down to joint ventures and describe three of the most important governance mechanisms in this type of strategic alliance. These three mechanisms will be studied more in depth in the following chapters.

The literature on alliance governance is immense and could benefit from updated and systematic approaches to review them such as suggested by Gaur and Kumar (2017) and be able to account for what we have learned so far in alliance governance and where we are headed for the future.

3. THE JOINT VENTURE CONTRACT DATA: MINING EDGAR

Chapter 3 concerns companies listed in the U.S. and the information they are required to report to the Securities and Exchange Commission (SEC) through the electronic EDGAR filing system. This chapter will explain where companies file their information, how to search for it and suggest ideas on how to use it. I focus on contracts; specifically, joint venture agreements and how and where to find them. I provide the *Python* code to gather joint venture contracts, which can be customized to download other types of important disclosed documents.

3.1. Introduction. Where U.S. publicly traded companies file their information

Information on U.S. publicly traded companies is, as the name suggests, public. Investors know this and make decisions based on this information. When companies file their financial reports, these reports become available to everyone. One of the objectives of the Securities and Exchange Commission (SEC) is to receive these filings and make them public. With new technologies and data mining techniques, accessing information is at the reach of everyone, not just investors. Researchers have started to investigate this repository of information, especially in accounting and finance, but less so in the management field and even less in companies themselves. Managers and smaller investors tend to be unaware of the abundance of free data available and have trusted companies that have published these data in more accessible but commercial databases (e.g. Edgar Online). In this article, I show how anyone, especially managers and their teams, can systematically access public records to stay on top of the game.

Creating algorithms to gather data from the securities exchange commission is becoming increasingly popular (Garcia & Norli, 2012a). With a relatively simple

program, publicly traded firms' quarterly or annual reports can be rapidly downloaded for any given period after 1996. These reports are key for investors and researchers alike. Moreover, publicly traded companies not only file these reports but also file other types of important documents such as contracts. In this article, I focus on contracts, specifically joint venture contracts. I show how to find these agreements through the SEC's search engine (EDGAR¹), and provide an algorithm to systematically download them into a spreadsheet for further analyses.

The chapter continues with an overview on where companies file their information with the SEC. Then I discuss the electronic data gathering, analysis, and retrieval system, namely EDGAR, and how to find documents including annual reports and joint venture contracts. Finally, I present ideas on how to systematically access these data to perform more thorough analyses. The chapter ends with practical implications and conclusions.

3.2. The U.S. Securities and Exchange Commission (SEC) and EDGAR

The SEC

Trust in the U.S. financial system was lost due to the stock market crash of 1929 and the great depression that succeeded it. To bring back faith and restore balance to financial markets, congress created the SEC through the Securities Exchange Act of 1934 (Benston, 1973). Since the extension of this law in 1964, the SEC requires public companies to report their quarterly (10-Q) and annual reports (10-K) and other documents, and to make this information public (Gerdes, 2003). This was an

¹ EDGAR search engine and database are accessed here:
<https://www.sec.gov/edgar/searchedgar/companysearch.html>

overwhelming task for the SEC because these filings had to be processed by hand. And even though stored in electronic format, they could only be accessed in five locations across the U.S. or through a few private companies. This all changed with the creation of the EDGAR system (Gerdes, 2003; Griffin, 2003).

Understanding the EDGAR system

In order to improve the filing and the accessibility of public filings, the SEC started to implement voluntary electronic filings in 1984, which became mandatory in 1993 (SEC, 2000). The system became broadly applied in January 1996 (Griffin, 2003). It was named the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. Since 1996, public firms file their documents electronically to the SEC through EDGAR, and these documents are almost instantaneously available online to the public, free of charge. The filings take approximately 40 seconds to be publicly available and in some cases Tier 1 subscribers receive the information seconds in advance, giving them a trading advantage (Rogers, Skinner, & Zechman, 2017).

EDGAR is now a massive repository of corporate and financial information on U.S. publicly traded companies. With millions of documents, it is a first-source repository and one of the richest corporate and financial firm information sources available today (Gerdes, 2003; Loughran & McDonald, 2017).

Types of documents

According to Garcia and Norli (2012a), the most commonly filed document is Form 4 (changes in ownership), followed by the 8-K (earning releases), the SC 13G/A (ownership of stock over five percent which triggers an amendment) and the 10-Q (quarterly report). Annual report forms (10-K) are the 12th most common type of filing.

Refer to Garcia and Norli (2012a) for details on frequencies of forms filed in the EDGAR database.

Widely used by investors and researchers, the 10-K and 10-Q filings offer very detailed and accurate financial information and therefore are considered the most important types of filing for investing decisions (Griffin, 2003). Form 4 is also relevant since it signals changes in the ownership of the firm which could be linked to growth potential.

Researchers have widely used EDGAR filings, especially in accounting and finance. For example, the topic of investor reaction to 10-K and 10-Q filing dates could be divided into pre- and post-EDGAR. Pre-EDGAR studies found weak evidence of a relationship between timing and investor reaction (Easton & Zmijewski, 1993). On the other hand, in the post-EDGAR era, in which scholars have access to the electronic data, Griffin (2003) finds that during 10-K and 10-Q filing days there is an increase in the firm's stock trade. Dalton, Buchheit, Oler, and Zhou (2013) find that firms listed on larger stock exchanges, with stronger auditing and higher analyst coverage, are less likely to file 10-Ks late. Additionally, You and Zhang (2009), using 10-K filings, find that investors underreact to the timing and focus more on the content of the filing and its complexity since it contains other useful non-financial information that could predict future performance and investor reaction. Other post-EDGAR studies focus on parts of the filing (10-Q/K) and how they affect valuation. For example, De Franco, Wong and Zhou (2011) analyze market reactions to the information in the notes of the financial statements reported in the 10-K filings and find that these notes are used by equity analysts to update financial statements which then affect stock value. These studies are

just a few examples of the extensive accounting and finance literature around SEC filings. Since the implementation of EDGAR, research using SEC filings has been more prolific, since this information had previously been so difficult to access.

Furthermore, text mining has allowed deeper analyses of the contents of these SEC filings. In fact, there is already a robust stream of literature on the analysis of the contents in the 10-K reports using advanced text mining techniques. Cong, Kogan and Vasarhelyi (2007) propose a template-based approach to extract financial data from these unstructured SEC filings. Additionally, there are scholars who focus on analyzing the wording of annual reports. Examples include Loughran and McDonald (2011), who create an alternative negative word list to the commonly used H4N (Harvard IV-4 Tag) used for financial and accounting text analysis. They use the new list on 10-Ks and relate it to financial performance. Additionally, Garcia and Norli (2012b) use an automated program that extracts geographical dispersion of operations data from the 10-K forms to analyze the effect of geographical location on stock returns. They find that US firms with concentrated operations in two states or less have higher returns than those spread over 20 states.

EDGAR's usefulness has been improving since its inception, making searches somewhat easier. However, it is still not consolidated as a structured database from which specific data can be systematically downloaded. Furthermore, it is impossible to extract data from all of the different documents attached to filings with the current search tools. Any company filing in EDGAR is identified with a central index key (CIK) number. And the documents filed by firms are posted with a header (e.g. 10-K, 10-Q, 8-K) and should - but often do not- include tags to highlight parts of the filings and give them a similar

structure (Gerdes, 2003). EDGAR queries can be frustrating and do not include within text searches, meaning the search is limited to industry, company (CIK code), filing type and date. Additionally, important documents attached to filings, such as material contracts, are not searchable and are also filed in an irregular pattern. EDGAR's user interface is so complex that there are websites dedicated to organizing and presenting the same information but in a friendlier way, such as *Rankanfiled*² and *SEC info*³.

In earlier post-EDGAR studies (mid 2000's), the main document of a filing, such as the 10-K, was downloaded manually (Griffin, 2003). Fortunately, advances in programming have allowed the download of thousands of files with a relatively simple program or algorithm, often referred to as a spider or crawler (Garcia & Norli, 2012a). Now that downloading and analyzing the main filings is simpler, researchers are starting to dig deeper and also to look at the attachments to the filings, such as material contracts. These attachments are somewhat less organized since they may fail to include the proper description or may be incorrectly attached. For example, merger and acquisition contracts should be attached to form S-4 but can be found in several other types of filings (Sanga, 2014).

3.3. Disclosure of material contracts to the Securities Exchange Commission (SEC)

U.S. publicly traded firms must file material contracts that are not part of the ordinary course of business, such as license, acquisition and joint venture agreements (Y. Chen & Bharadwaj, 2009; Hegde, 2014; Sanga, 2014). These contracts should be filed as attachments to forms 10-K, 10-Q, 8-K and S-4 and should be listed in the exhibits section (Overdahl, 1991). However, many firms -willingly or unwillingly- do not list contracts in

² <http://www.rankandfiled.com/>

³ <http://www.secinfo.com/>

the exhibits section of their reports, nor do they add a description in the filing. When contracts are not named or attached correctly, they become difficult to find, even with the help of an algorithm or automated program (see Illustrations 3.1, 3.2 and 3.3).

3.3.1. Finding the joint venture contracts

Ever since SEC data has been widely available through EDGAR, investors and researchers in the fields of accounting and finance have used it extensively. In the area of contracts, researchers in the fields of law (e.g., Sanga 2014) and information technology (e.g., Chen and Bharadwaj 2009) also use the SEC data. To my knowledge, in the strategy and international business fields, only one study by Hegde (2014) uses EDGAR directly to gather license agreements. Most strategy studies on alliance contracts use the *Thomson Reuters Recap IQ database*, -now *Cortellis Deals Intelligence*- (Adegbesan & Higgins, 2011), or the *rDNA* also known as *Cooperative Agreements and Technology Indicators (CATI)* database (Hagedoorn et al., 2005; J. Kim & Globerman, 2017; Oxley, 1997). For a more thorough review on common alliance databases please refer to Schilling (2009). Recently, Choi and Contractor (2016) used a novel dataset called *current agreements*⁴, which focuses on the biopharma industry. Databases such as *rDNA* only provide summaries of the contracts and not the full agreements. These databases collect most of their data from the Securities Exchange Commission, where U.S. traded public companies (U.S. and foreign) file their reports. However, few people know that these company's filings and annexes--including alliance contracts--are public and can found in the EDGAR database.

⁴ <http://www.currentagreements.com/>

Companies file their quarterly reports on form 10-Q and annual reports on form 10-K. For foreign companies, the 20-F is the equivalent of the annual report. The 10-K is the main document which specifies financial and operational information, however, in numeral 10 in the exhibits section, companies should list the agreements and contracts they executed. These include employee contracts, CEO compensation plans, license agreements, plans of merger and acquisition and all other types of material contracts. The comment on the exhibit section within the report specifies the filing and date in which the contract was filed, which can be the actual one or a previous filing. Therefore, in order to find joint venture contracts, one must first find a report and read the exhibits section, numeral 10, to determine whether the company signed a joint venture in the present or past, and when and in which form it was filed, and then begin a search for that filing, hoping to find the contract correctly attached.

This process of collecting contracts manually is very tedious and could take years, leading to selection bias. Therefore, I developed two programming codes to systematically search all company filings in the EDGAR database. Two programs were created, one each in *Python 2.7* and *Java* programming languages. The goal was to compare the results from each and to create a more thorough database.

The process of searching the internet or a specific website with a program is called scrapping or crawling; this can be achieved with the *Scrapy* package of *Python 2.7*. With a set of commands, the program automatically looks for information, downloads URLs, and generates an Excel spreadsheet with information as specified by the programmer. For this research, the program was coded to search between the years of 2000 and 2016 for all company filings in the EDGAR database, that is all U.S. publicly

traded companies, either U.S. or foreign (670772 companies in 444 SIC codes or industries). First, the program scanned each filing for the description of the attached documents (Illustration 3.1). When the program matched any of the key words related to joint ventures, it downloaded the attachment from the next column called *document*. The key words for the search were joint venture, joint venture agreement, joint venture contract, JV agreement, or any combination of words in between the words joint and venture. The initial search focused on annual reports (10-K and 20-F filings) and found only 31 contracts. It was later found that not all companies filed their contracts on these forms, therefore the search was expanded to all company filings (e.g. 10-K, 10-Q, 8-K, 20-F, F-10, F-8, 6-K, S-1/A, S-8/A, S-4, 10KSB, F-1, F-1/A) which resulted in 361 contracts. It was also expected that companies enter the exact description of the attached document (see illustration 3.1), but it was not always the case.

Illustration 3.1. Filing Detail with Joint Venture Agreement in Description.

SEC Home » Search the Next-Generation EDGAR System » Company Search » *Current Page*

Form 10-K - Annual report [Section 13 and 15(d), not S-K Item 405]		SEC Accession No. 0000862861-14-000011	
Filing Date 2014-03-14	Period of Report 2013-12-28		
Accepted 2014-03-14 16:19:52	Filing Date Changed 2014-03-14		
Documents 14			
Interactive Data			
Document Format Files			
Seq	Description	Document	Type Size
1	10-K	a10k-122813.htm	10-K 1551824
2	JOINT VENTURE AGREEMENT	exhibit1016aapjvagrements.htm	EX-10.16 192395
3	LIST OF SUBSIDIARIES	exhibit211-listofsubsidiar.htm	EX-21.1 5084
4	AUDITOR CONSENT	exhibit231-auditconsent2.htm	EX-23.1 2628
5	CEO 302 CERTIFICATION	exhibit311-302ceocert10k.htm	EX-31.1 14510
6	CFO 302 CERTIFICATION	exhibit312-302cfocert10k.htm	EX-31.2 14600
7	CEO 906 CERTIFICATION	exhibit321-906ceocert10k.htm	EX-32.1 6254
8	CFO 906 CERTIFICATION	exhibit322-906cfocert10k.htm	EX-32.2 6192
	Complete submission text file	0000862861-14-000011.txt	10794940

Source: <https://www.sec.gov/Archives/edgar/data/862861/000086286114000011/0000862861-14-000011-index.htm> (Accessed: 10/18/2016)

This number (361) of contracts led me to further inquire about how the contracts were filed. By reading annual reports and following their exhibits, I found that some companies--perhaps due to secrecy or simply due to disorganization--either gave the file a generic name in the description such as *attachment X* or *Exhibit x.x* (See Illustration

3.2.) or leave it blank (see illustration 3.2 and 3.3). In illustration 3.2, the joint venture agreement is attached to *Seq 4* (Exhibit 10.3) but it is not properly described as a joint venture. In Illustration 3.3 the joint venture contract is attached to *Seq 5* but the description or header is left blank, therefore the program or a person cannot identify it without opening each document manually to find out what its contents are.

Illustration 3.2. Filing Detail with generic description.

Form 8-K - Current report

SEC Accession No. 0001615774-16-003955

Filing Date 2016-01-22	Period of Report 2015-12-31	Items Item 1.01: Entry into a Material Definitive Agreement Item 2.01: Completion of Acquisition or Disposition of Assets Item 3.02: Unregistered Sales of Equity Securities Item 9.01: Financial Statements and Exhibits
Accepted 2016-01-22 10:24:28	Filing Date Changed 2016-01-22	
Documents 15		

Document Format Files

Seq	Description	Document	Type	Size
1	8-K	s102444_8k.htm	8-K	21037
2	EXHIBIT 3.1	s102444_ex3-1.htm	EX-3.1	57937
3	EXHIBIT 10.2	s102444_ex10-2.htm	EX-10.2	130807
4	EXHIBIT 10.3	s102444_ex10-3.htm	EX-10.3	41054
5	EXHIBIT 10.4	s102444_ex10-4.htm	EX-10.4	57787
6	EXHIBIT 10.5	s102444_ex10-5.htm	EX-10.5	46948
7	EXHIBIT 10.6	s102444_ex10-6.htm	EX-10.6	20587
8	GRAPHIC	tex3-1logo4.jpg	GRAPHIC	7524
9	GRAPHIC	tex3-1logo1.jpg	GRAPHIC	7650
10	GRAPHIC	tex3-1logo2.jpg	GRAPHIC	1485
11	GRAPHIC	tex3-1logo3.jpg	GRAPHIC	6293
12	GRAPHIC	tex10-2pg12.jpg	GRAPHIC	9555
13	GRAPHIC	tex10-2pg13a.jpg	GRAPHIC	53292
14	GRAPHIC	tex10-2pg13b.jpg	GRAPHIC	21888

Source: <https://www.sec.gov/Archives/edgar/data/1497647/000161577416003955/0001615774-16-003955-index.htm> (Accessed: 10/18/2016)

Illustration 3.3. Filing Detail with blank descriptions.

Form 10-K - Annual report [Section 13 and 15(d), not S-K Item 405]

SEC Accession No. 0001171520-12-000872

Filing Date

2012-10-15

Accepted

2012-10-15 17:13:41

Documents

17

Interactive Data

Period of Report

2012-06-30

Filing Date Changed

2012-10-15

Document Format Files

Seq	Description	Document	Type	Size
1	UAN POWER CORP.	eps4890.htm	10-K	430864
2		ex10-8.htm	EX-10	11338
3		ex10-9.htm	EX-10	11151
4		ex10-10.htm	EX-10	11200
5		ex10-11.htm	EX-10	33357
6		ex14-1.htm	EX-14	16830
7		ex31-1.htm	EX-31	6471
8		ex31-2.htm	EX-31	6549
9		ex32-1.htm	EX-32	3917
10		ex32-2.htm	EX-32	3749
11	GRAPHIC	Image_001.jpg	GRAPHIC	2425
	Complete submission text file	0001171520-12-000872.txt		1673713

Source: <https://www.sec.gov/Archives/edgar/data/1469115/000117152012000872/0001171520-12-000872-index.htm> (Accessed: 10/18/2016)

To solve the issue of attachments without description, a new version of the search program was created that included a series of commands to open each attachment of every filing, which scans and identifies which of these files have the key words within the first 500 words. This method returned many more results, but also included other

types of documents, such as press releases and letters, which included the key words related to joint ventures. These unrelated documents were deleted manually in the database cleaning phase.

3.4. The final joint venture contract dataset

After deleting the documents that were not joint ventures, the final sample consisted of 626 joint venture contracts. This number was contrasted with the results from the different code written in *Java* programming language and they coincided. Additionally, as another check, I manually downloaded dozens of contracts which were effectively identified by the machine codes.

In line with Hegde (2014), who used a sample of license agreements collected from EDGAR, this sample is representative for joint ventures since I used the contracts reported to the SEC, the same source of data for several widely used academic databases (e.g. *SDC*, *Recap*). Additionally, the 626-contract sample represents 5.54% of the 11,500 joint ventures reported in SDC Thomson Reuters between 2000 and 2016.

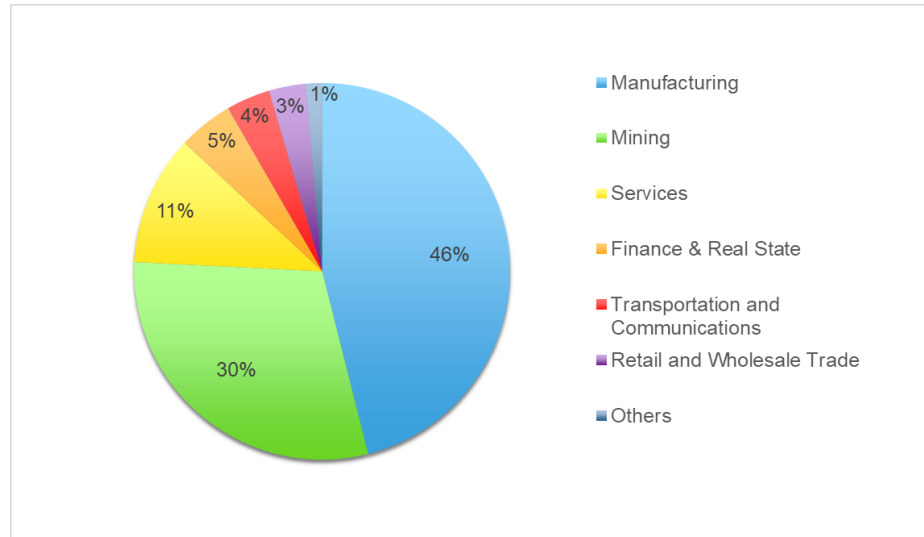
The initial dataset automatically created by the programming code includes the variables from the filing that it extracts from EDGAR (see table 3.1).

Table 3.1. Initial variables extracted from the EDGAR filing

Variable Name	Description
Filing URL	The URL where the firm filed a report along with its attachments (see Illustration 3.1)
Contract URL	The URL of the actual joint venture contract
Filing date	Date the filing was submitted to the SEC
CIK	Central Index Key. Unique number assigned by the SEC to each filing company.
Filing firm	Name of the filing company
SIC code	Four digit Standard Industry Classification number of the filing company
Classification	Industrial classification according to SIC code
SEC filing form	The form to which the company filed (attached) the contract to the SEC (eg. 10-K, 8-K, 10-Q and others)
SEC description	Where the company describes the attachment (e.g. Joint venture contract, other unrelated name, or left blank)
Exhibit number	Exhibit number in the filing where firms attach the contract (it is supposed to be in exhibit 10.* but this is not always the case)

Next, figure 3.1. shows the distribution of the broad industrial sectors (two digits SIC code) of the joint ventures in the sample.

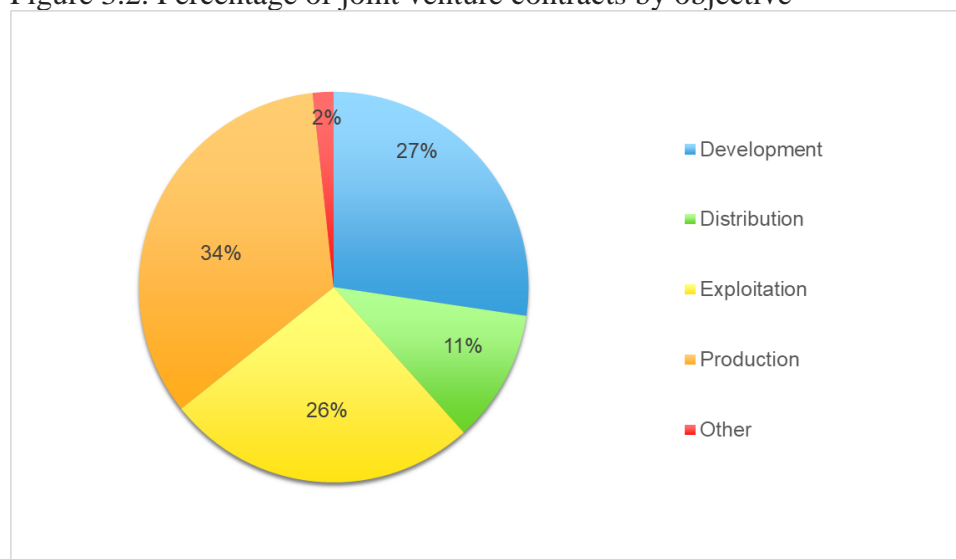
Figure 3.1. Percentage of joint venture contracts by industry



Additional descriptive information about the partnerships was extracted from the contracts. For instance, the objective of the joint venture was grouped into six categories: development, distribution, exploitation, production, and other (see figure 3.2).

Additionally, drawing from the contracts and industries, 204 (32.6 % of the sample) of the joint ventures were identified as being high tech, while 88 (14.1%) were identified as Research & Development joint ventures.

Figure 3.2. Percentage of joint venture contracts by objective



Most of the joint ventures take place between two partner firms (518 or 81.4%), while 73 (11.5%) of the joint ventures take place among three firms and the rest are among four partners or more (45 or 7.1%). The highest number of partner firms is seven.

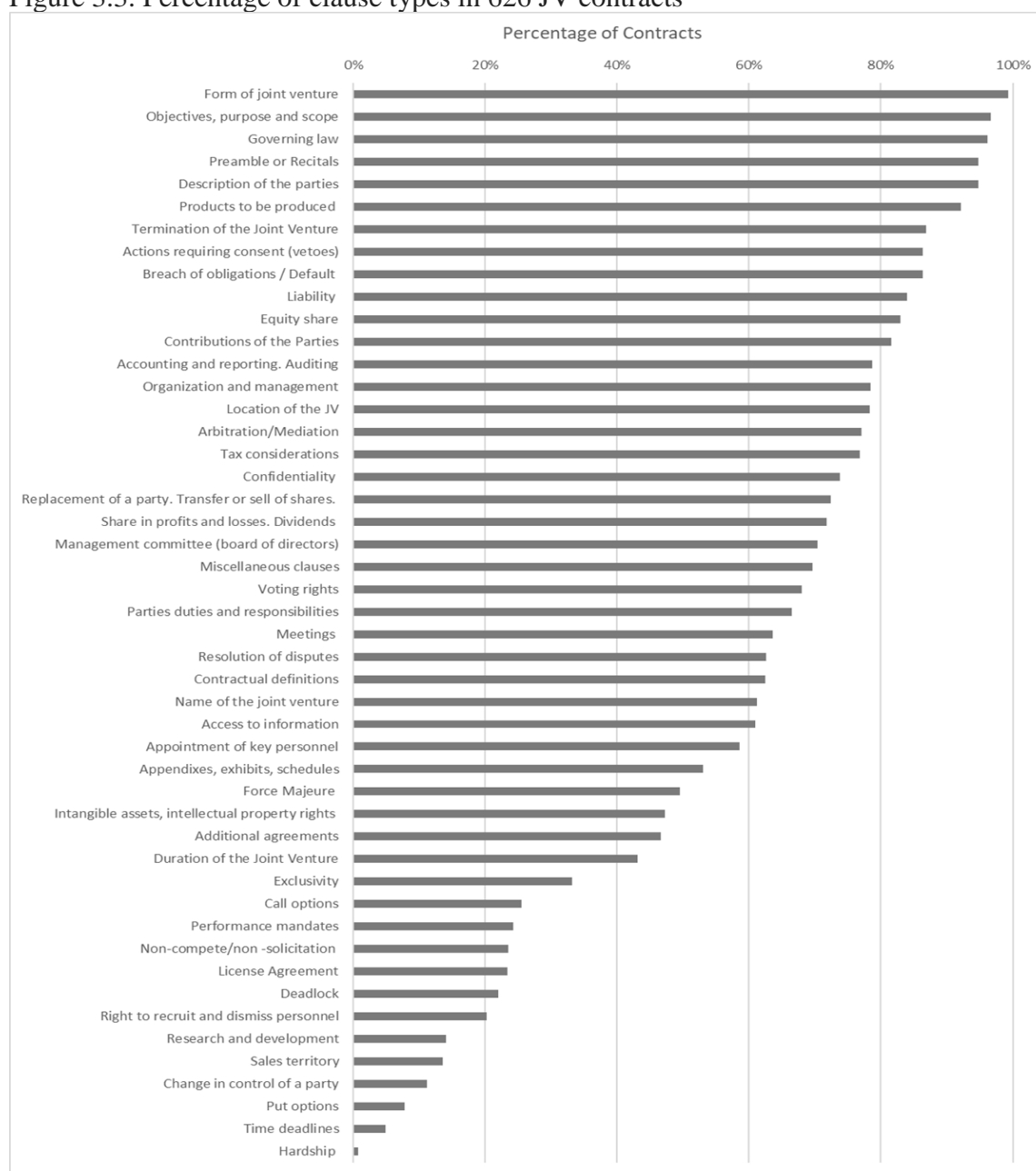
Regarding geographic scope, 326 (52.1%) joint ventures are international (IJVs), that is, they occur among partners from different countries, while 300 (47.9%) are among partners from the same country (domestic JVs). 104 of the domestic joint ventures (16.6%) are between non-U.S. firms, so there are joint ventures with same country partners from nations such as Peru, Israel, China, United Kingdom, Canada, Brazil, Taiwan, Mexico, Tanzania, etc. Overall, there are 405 (64.7%) joint ventures in which at least one firm is from the USA. Additionally, 109 (17.4%) of the international joint ventures do not have a U.S. partner, that is, they take place between non-U.S. firms.

Other variables directly related to the joint venture were extracted by carefully dissecting the contracts and extracting important information. Additional external variables were created based on matching information from the contract to information in other databases such as institutional data from the World Bank. Those and other variables such as number of parties, number of clauses, capital investment, equity share, board of directors, etc. are used for the hypotheses presented in this dissertation. However, the contracts are rich in information and the number of variables that can be extracted for future studies is quite vast.

3.4.1. A dissection of joint venture contracts

A word cloud of all 626 joint venture contracts helps visualize the most commonly used words and clauses (Illustration 3.4). The cloud was created using term frequency-inversed frequency (tf-idf) statistic, a measure that considers both the frequencies in the

Figure 3.3. Percentage of clause types in 626 JV contracts



3.5. Conclusions

In this chapter I summarize the purpose of the securities exchange commission (SEC) and its EDGAR system for filing and retrieving firm information online. I explain how investors and researchers have used public data and how the Post-EDGAR era has facilitated and influenced researchers' and investors' decisions. I also provide a basic

understanding on what the EDGAR database offers and how to search for material contracts, specifically joint venture agreements.

Since EDGAR contains such a vast amount of unorganized information, researchers have developed programs to download these filings. The programs I have developed are just two examples of many ways EDGAR can be accessed. The codes to systematically download the joint ventures are available in appendix 9.1 for *Python* and appendix 9.2 for *Java*. These programs can be easily modified to search other types of documents or forms. They can also be improved and perfected by more savvy programmers than myself.

Additionally, I describe my database of 626 joint venture contracts and perform the first dissection of their anatomy by exploring which provisions are included and which ones are omitted. These contract data will be used in the following three studies that form the core of this dissertation on joint venture governance structure.

Finally, while searching for the contracts it was obvious that there was an unintentional or perhaps intentional way of filing and disclosing contracts that makes some of them especially hard to find. The disclosure literature in accounting is enormous and while there are studies on how accurate SEC filings and their financial statements are, and how a firm's amendments and restatements to filings can affect their valuation. It would be interesting to study why companies do not always properly file their material contracts. While the SEC monitors filings, it focuses more on financial statements and 10-K and 10-Qs and leaving other disclosure procedures unattended.

4. STUDY 1. COUNTRY LEVEL DETERMINANTS OF JOINT VENTURE CONTRACTUAL COMPLEXITY

ABSTRACT

Clauses within alliance contracts help mitigate exchange hazards by setting the rules of the game in terms of scope, responsibilities of the parties, rights, obligations, dispute resolution, duration, termination, etc. The inclusion of these different types of clauses affects the complexity of the contract (Reuer & Ariño, 2007). Drawing from transaction cost economics (TCE) and by using a unique database of 626 joint venture (JV) contracts, I study the country level determinants of JV contract complexity by focusing on the country where the contract is enforced, namely the governing or applicable law clause. I find a positive relationship between civil legal system, inefficient courts and low levels of corruption on joint venture contract complexity. These results highlight the importance of the choice of law provision, its negotiation, and how it affects contractual complexity and costs.

4.1. Introduction

Due to increased competition, technological pace and knowledge complexity, firms are more likely to engage in cooperative relationships with other firms (Contractor & Lorange, 1988). These forms of cooperation, namely strategic alliances, are increasingly being used in order to complement or pool resources, reduce risks or enter new markets (Beamish & Banks, 1987; Kale & Singh, 2009). Specifically, joint ventures are a widely used type of alliance, especially for foreign expansion. Joint ventures and their agreements are a complex type of strategic alliance because of shared ownership and control (Kogut, 1988; Oxley, 1997). Moreover, according to the International Trade

Center (ITC), firms consider joint venture contracts the second most necessary type of contract after sales and purchase contracts (International Trade Centre UNCTAD/WTO, 2004). However, our empirical understanding about how these arrangements are designed and work in a manner that is consistent with theory has lagged. The lack of empirical research is related to the complexity of the arrangements, but also to the difficulty in accessing joint venture contracts (Schepker et al., 2014).

Understanding contract complexity is crucial since it directly affects costs incurred in negotiating, designing, implementing, monitoring and enforcing them (Brousseau & Glachant, 2002; Williamson, 1979; Williamson, 1998). Additionally, one of the most important performance related governance mechanisms of an alliance lies in its initial design and contract crafting (Hennart, 2006). While Reuer and Ariño (2007) point out that contracts vary substantially among alliance types, I argue that they also vary substantially within alliance types, in this case within joint ventures which vary particularly in their degree of complexity. In this manuscript, I further explore the governance mechanisms of joint ventures by focusing on contract complexity. While there are claims that some non-equity alliances may require more intensive governance than equity joint ventures, I examine what determines the intensity of the governance of joint ventures.

The legal, economic and strategy literatures agree that the joint venture contract is of great strategic importance since it not only sets the rules of the game, but also reflects key strategic and relational aspects of the agreement such as cooperation, trust, shared responsibilities and commitment (Gong, Shenkar, Luo, & Nyaw, 2007; Luo, 2002; Luo, 2005; Salbu, 1991). Also, as opposed to a non-equity alliance, there is higher

commitment, larger financial investment and less reversibility (Contractor & Ra, 2002). Additionally, the contract minimizes the chances of opportunism while facilitating exchange (Williamson, 1979; Williamson, 1998). Therefore, it is important to study the contracting terms of joint ventures to further understand this type of alliance from the outset. There is a healthy amount of literature on alliance contracts (Argyres et al., 2007; J. Choi & Contractor, 2016; Hagedoorn et al., 2005; Weber et al., 2011), while alliance contract complexity has received less attention (Hagedoorn & Hesen, 2009; Reuer & Ariño, 2007); and specific studies about the determinants of joint venture contractual complexity are almost nonexistent, with the exception of Luo (2005).

In this study, I explore specific provisions that firms include in their joint venture contracts which impact their contractual complexity and governance intensity. While some of the studies on contract complexity in alliances have addressed factors that impact complexity such as previous alliance experience and trust (Poppo & Zenger, 2002), each joint venture contract is also governed by the laws of a specific country. This clause determines the applicable law of the contract and it is only available in the actual complete agreement, not in commonly used databases that make summaries of the alliances. Therefore, I explore how institutional factors of the country where the contract is enforced affect its complexity. By using transaction cost theory, I examine country level factors that may affect contract complexity such as internationality, legal system (common vs civil), corruption, and court efficiency.

This research makes three contributions to the contracting and alliance literatures. First, it contributes to contract theory and TCE by examining how institutional factors affect the contractual complexity of joint venture agreements. Second, this is the first

empirical study in the strategy literature using actual joint venture agreements, since the few studies on joint venture contracts have used survey data (Luo, 2002; Luo, 2005) or the SDC database (Tong & Li, 2013), which does not contain data on the governing law of the contract but merely on the country where the joint venture takes place. Finally, I offer a more detailed contractual lens of joint ventures to guide managers in navigating the different ways a joint venture agreement could be designed and negotiated. Following recent studies that take a more quantitative approach to analyzing actual alliance contracts (Bercovitz & Tyler, 2014; J. Choi & Contractor, 2016; Weber et al., 2011), I examine the complexity of 626 joint venture agreements and their country level institutional determinants.

This study is novel in various ways. First, to my knowledge, it is the first study that systematically examines actual joint venture agreements. Second, it enhances our understanding of the complexity of equity joint ventures. Third, methodologically, I dissect every single contract and identify which provisions are included or not in each of them. Then I create a joint venture contract complexity index based on all the clauses that should be included in such agreement, departing from common measures of complexity based merely on safeguard provisions.

This chapter continues with a review of the literature of joint venture governance, followed by theory and hypotheses development. Then, I describe the data, methodology and results. I conclude with managerial implications, directions for future research and limitations.

4.2. Literature review, theoretical background and hypotheses

The joint venture contract

An equity joint venture (JV) is a complex organizational entity in which two or more partner firms create a separate but jointly owned organization to reach an objective, combine resources (financial, managerial, technical), share risks and split profits (Beamish & Lupton, 2009). When partner firms are from the same country, they are identified as domestic joint ventures. International joint ventures (IJVs) are created when one of the partners is foreign. IJVs have an added level of complexity since there are additional cultural, legal, geographical and political considerations in the relationship. IJVs have received the attention of scholars who are interested in their performance (Geringer & Hebert, 1991; Reuer & Koza, 2000), their partner selection criteria (Geringer, 1991), their choice over other foreign direct investment strategies such as acquisitions or greenfield investments (Anand & Delios, 2002; Delios & Henisz, 2003; Meyer, Estrin, Bhaumik, & Peng, 2009), or over other types of alliances and their governance mechanisms (Contractor & Ra, 2002; Contractor & Reuer, 2014; Hagedoorn et al., 2005; Teng & Das, 2008).

Surprisingly, research on the governance mechanisms of JVs is still scarce and has mainly used overly-broad indicators of governance such as equity distribution (ownership percentage), while paying less attention to important governance mechanisms such as the contract (Luo, 2002) and the joint venture management committee or board of directors (Contractor & Reuer, 2014; Cuypers et al., 2017; Reuer et al., 2016)).

The joint venture is governed by a legal contract which is a binding agreement through which parties establish their responsibilities, rights and contributions in addition to other issues such as expected outcomes, duration, dispute resolution, termination, and intellectual property management. Therefore, the contract is not only the foundation of

the joint venture relationship, but also a key feature of governance which establishes the framework in which the cooperation will exist (Luo, 2002). Transaction cost economics has not only been used to help understand the efficiencies of market, hybrid and hierarchical firm governance types, but also to understand efficiencies in contracting (Reuer & Ariño, 2007). The main purpose of the contract is to distribute benefits, tasks and costs over the partners, and minimize opportunism (Argyres et al., 2007). Therefore, from a transaction cost theory perspective, when the chances of opportunism are greater, the contract will be more complete and complex, and when the chances for opportunism are lower, the contract will be simpler. Otherwise a complex contract in a low risk opportunistic setting would be inefficient and unnecessarily costly (Brousseau & Glachant, 2002; Reuer & Ariño, 2007; Williamson, 1985; Williamson, 1991). In this sense, the objective of the contract and its complexity should be properly aligned to improve efficiency and reduce transaction costs (Williamson, 1991).

The strategy literature on alliance contract complexity has focused mainly on the antecedents of complexity from the perspective of the partner firms such as previous experience, firm size and prior ties (trust) (Gulati, 1995), and the alliance itself such as type, duration and asset specificity (Poppo & Zenger, 2002; Reuer & Ariño, 2007). Research has been very limited on the influence of environmental aspects on contract complexity (Luo, 2005).

The institutional environment and contracts

The institutional framework of a country is composed of the political, social, economic and legal rules that guide production, exchange and distribution. Solid institutions characterized by uncorrupt governments, political stability, an efficient court system,

democracy and strong intellectual property protection are related to economic development (North, 1990). Governments are a key actor in this framework since they bring together the components of the institutional system through laws and contracts that enable cooperation (North, 1990). Thus, the institutional environment constitutes the framework in which contractual relationships take place. Alliance contracts must follow the rules within this framework; they do not take place in isolation. Firms design and enforce contracts according to what the environment allows them to do, which means it is the environment that sets the rules, not the firms (Brousseau & Glachant, 2002). Therefore, the agreement and the alliance could not exist without the institutional environment, and this environment is a key determinant of all contractual relationships, including joint ventures.

I argue that while the alliance contract provisions help mitigate opportunism and exchange hazards within the alliance, these provisions do not completely bulletproof the agreement since the partner firms can still act opportunistically depending on the institutional environment of where the contract is enforced. For example, two identical contracts could be enforced and interpreted differently according to a country's laws, court system, level of corruption, and culture.

Cross-country comparisons are helpful to understand which country level variables affect contracts that otherwise would be interpreted similarly. For example, in a cross-country comparison on bank loan agreements, Qian and Strahan (2007), show that strong legal protection and institutions shape financial contracts by increasing the time of the loans. Analyzing JV contracts governed by the laws of different countries will

provide a better understanding of institutional effects on contract enforceability and therefore, on a contract's capacity to minimize appropriability hazards.

In the following sections, I identify institutional factors that may affect contract complexity. I focus on joint ventures which helps to control for other types of alliances, and in line with Luo (2005), I believe that joint ventures offer a fruitful context to study the impact of the environment on alliance contracts. Existing research does not differentiate among multiple types of alliances, nor does it separate domestic from international alliances. In this chapter, I control for type of alliance by using only joint venture contracts.

Domestic vs International Joint Ventures

International joint ventures (IJVs) are joint ventures formed by partners from different countries (Geringer & Hebert, 1989). IJVs are harder to manage because they face unexpected contingencies and higher uncertainty, risks and difficulties due to differences in aspects such as culture, legal systems and institutions (Luo, 2005). Therefore, it is not surprising that IJVs have higher failure rates (Dacin, Hitt, & Levitas, 1997). Additionally, IJV have higher chances of moral hazards and partner opportunism and therefore the IJV contract should anticipate these contingencies as thoroughly as possible (Luo, 2005; Reuer et al., 2006). Therefore, I hypothesize that:

H1: The complexity of a joint venture contract will be greater for an international joint venture than for a domestic joint venture.

Legal System – Civil vs Common Law

An important aspect of the institutional environment that defines the different levels of regulatory intervention is legal origin. Legal systems are generally classified into

common law nations (which is based on cases) and civil law countries (which rests on codified statutes). There are also more nuanced classifications of legal systems. For example, the widely used LLSV classification categorizes legal origins into English, French, German, Scandinavian and Socialist (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997). English law follows the common law system, based on the historical accumulation and evolution of cases as interpreted over time by judges, while the French, German and Scandinavian are civil law systems with codes based on Roman law (R. David & Brierley, 1978). Contracts tend to be shorter in countries following a civil law system because there is a published commercial code that defines commercial laws and therefore contingencies not anticipated in the contract are covered by regulations in the code. On the other hand, in common law countries the law is based on previous cases and therefore, in order to minimize risks and opportunism, lawyers address in the contracts many possible contingencies (scenarios), making them lengthier (Haapio & Siedel, 2013). Therefore, I hypothesize that:

H2: Complexity will be greater for a joint venture contract enforced in a country with a common law system rather than in a country with a civil legal system.

Court efficiency – Time and cost to enforce a contract

Joint venture contracts are interpreted and enforced by courts, and most contain an applicable law or governing law clause, which specifies the state and country in which the contract will be enforced.

The governmental institutions that enforce contracts are the courts. Therefore, the efficiency of the courts of a country are key to enforcing contracts because they influence

the partners' ability to execute the contract and the likelihood of a partner taking legal action in the case of breach (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2003). The World's Bank Doing Business project measures business regulations regarding starting a business, registering property, resolving insolvency, and enforcing contracts, among others (World Bank, 2017). The Doing Business project's contract measures include *cost to enforce a contract* and *time to enforce a contract* which are pertinent for comparing the efficiency of court systems across countries.

Opportunism may increase when it is difficult to enforce contracts through courts (Oxley, 1997). An efficient court system should have lower costs to enforce a contract and should take less time to do so. From a TCE perspective, the mere existence of a strong and efficient public system to enforce contracts lowers the chance of opportunistic behaviors and therefore could substitute for incomplete contracts and lower its overall costs (Mackaay, 2010). Therefore, the more efficient the system the simpler the contract and vice versa. By using both measures separately and based on the governing law of the JV contract, I hypothesize that:

H3a: There is a positive relationship between the cost to enforce the contract in courts and its complexity.

H3b: There is a positive relationship between the time it takes to enforce the contract in courts and its complexity.

Corruption

Transaction cost economics suggests that a weak institutional environment increases appropriability hazards and therefore increases the choice of joint ventures over other types of alliances since this type of alliance better aligns the interest of the parties

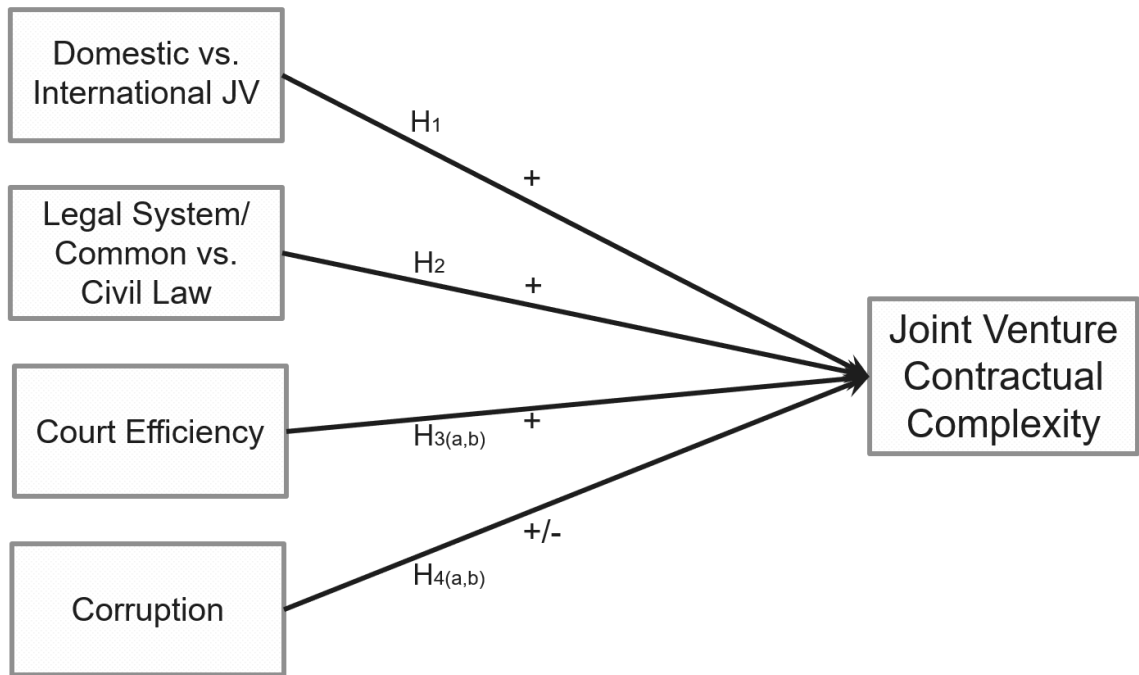
(Mowery et al., 1996; Oxley, 1997). However, among joint venture partners there is still a chance of appropriability, especially in countries with high corruption. In this sense, the transaction cost economics logic means that well-crafted contracts help fill some of the institutional voids, therefore I hypothesize that:

H4a: The contractual complexity of a joint venture will be high for a joint venture agreement enforced by the laws of a country with high corruption levels.

On the other hand, TCE offers an alternative explanation since it would be costly and inefficient to create a complex contract in a country with high levels of corruption because there is a higher likelihood that the contract will be breached or not properly enforced. Additionally, real options theory suggests that in an environment of high uncertainty, such as one dominated by corruption, the joint venture parties may want to gain the flexibility that a simpler contract can provide (Kogut, 1991; Lee & Cavusgil, 2006; Teece, 1996). Finally, a high level of corruption reduces credibility in the institutions responsible for enforcing contracts, rendering contracts less necessary (North, 1990). As a result, other informal governance mechanisms such as relationships may become more relevant (Cao & Lumineau, 2015).

H4b: The contractual complexity of a joint venture will be low for a joint venture agreement enforced by the laws of a country with high corruption levels.

Figure 4.1. Proposed Model – Joint Venture Contract Complexity



4.3. Methods

Sample collection and description

Studies on alliance contracts have used surveys and interviews (Luo, 2005; Reuer & Ariño, 2007) and contract information, either provided by a firm (Argyres et al., 2007) or from a database such as *Current Agreements Database* (J. Choi & Contractor, 2016) or the now discontinued *MERIT-CATI* database on technology alliances (Hagedoorn & Hesen, 2007). I join a few scholars who obtain the contracts directly from the Securities Exchange Commission (SEC) such as Hedge (2004) who examined tacit knowledge transfer in license contracts. Surprisingly, to my knowledge, no thorough study of the joint venture contracts filed in the SEC has been performed. I obtain the joint venture contracts from the SEC through an automated process created using the *Scrapy* package in the programming language *Python 2.7*. I specifically downloaded joint venture

contracts from 2000 to 2016 that were filed by US publicly traded corporations as exhibits to their 10-K, 10-Q, 8K, S-4 and 20-F filings.

The results are unique database of 626 joint venture contracts extracted from the EDGAR database of the SEC since US publicly traded corporations have to attach their material contracts to their filings (Overdahl, 1991). Additionally, in order to validate the results of the computer program, I manually looked for over 50 contracts in the annual reports of companies and they were all effectively detected by the machine code. Furthermore, an external programmer wrote different code in the programming language *Java*, and the number of contracts identified coincided with the program on *Python*. These contracts represent the first agreement between the companies as reported to the SEC as also reported in the sample of Hagedoorn and Hesen (2009).

The contracts were converted into a database. The variables for analysis were coded either manually (e.g., number of clauses were manually counted for all 626 contracts), through a text mining algorithm (e.g., number of words and contract complexity), or a combination of the two (e.g., contract complexity was first calculated by computer algorithm and then manually verified to check accuracy) since all contracts are different and do not follow a specific format. Table 4.1 shows the distribution of the agreements according to broad industry, as well as the number of high tech joint ventures and the number of international joint ventures. I believe the sample is representative since I used the contracts reported to the SEC, the same source of data for several widely used academic databases (e.g. *Current Agreements Database* and *Recap*). In addition, recently published articles have obtained contract data from the SEC using similar methods (Hegde, 2014). The present sample represents 5.5% of the joint venture activity reported

in the SDC Thomson Reuters database with 11,500 joint ventures during the same period (2000-2016).

Table 4.1. Number of agreements by industry, R&D and international

Broad industry	JV contracts per industry	High tech Jvs	LJV contracts (52% of total)
Agriculture, Forestry & Fishing	1	0	1
Construction	4	1	1
Finance, Insurance & Real Estate	28	1	12
Manufacturing	292	173	180
Mining	185	13	79
Public Administration	4	0	2
Retail Trade	11	0	3
Services	69	7	31
Transportation, Communications, Electric, Gas & Sanitary Services	24	5	14
Wholesale Trade	8	4	3
Total	626	204	326

Measures

I test the hypotheses with a sample of 626 joint venture contracts between the years 2000 and 2016. Table 4.2 summarizes the variables, measurements and data sources.

Table 4.2. Variables, measurements and data sources

Variable	Measurement	Data Source
JV Contract Complexity	Average of presence of 32 specific JV clauses. The presence of each clause has a value of one.	Developed by the author using the JV contracts obtained from the Securities exchange comission
High Tech Vs Low Tech JV	Classification of the joint venture in terms of high tech or low tech. High tech marked as one with SIC codes 283, 357, 365, 366,367, 381, 382, 384, 386, 481, 482, 484, 489, and 737). Zero for the rest (low tech).	Securities Exchange Comission
Number of parties	Number of partner firms participating in the joint venture	JV contract - Securities Exchange Comission
Previous contact with partner	Marked zero if there has been no alliances between the partners. One otherwise.	Factiva. Securities Exchange Comission (EDGAR), SDC
Firm size difference	Absolute value of the difference between employee range of the partner firms.	Compustat, Securities Exchange Comission
Industry	Industry classification of the industry of the joint venture in six broad categories based on first two SIC-digits	Securities Exchange Comission filing
Year	Indicator of the year the contract was signed	JV contract - Securities Exchange Comission
Domestic Vs International JV	Country of origin the partner firms. Marked zero when both firms are from the same country (domestic) or marked one if one is from a different country (international)	JV contract - Securities Exchange Comission
Legal system	Law of the country where the contract is enfoced. Marked one for common law, two for civil law, three for China Law, and four for hybrid law	La Porta, Lopez-de-Silanes, and Shleifer (2008). Adapted based on Hearn (2015)
Time to Enforce a Contract	Time for eforcing and resolving a commercial dispute through a local first-instance court. Originally measured in days and transformed to years	World Bank's Doing Business Indicators
Cost to Enfoce a Contract	Cost for enforcing and resolving a commercial dispute through a local first-instance court measured as a percentage of the claim's value	World Bank's Doing Business Indicators
Corruption	Corruption Perception Index (CPI) of the country where the contract is enforced (governing law clause) and the year the contract was signed. Transformed to 100-CPI	Transparency International

Dependent Variable: JV Contractual Complexity

There is a long debate in the literature regarding the measurement of contract complexity, see Hagedoorn and Hesen (2009) for a more thorough discussion. Commonly used proxies for contractual complexity are length measured by byte size (Reuer & Devarakonda, 2016), number of provisions (Reuer & Devarakonda, 2016), number of

future contingencies (Melumad, Mookherjee, & Reichelstein, 1997; Poppo & Zenger, 2002), number of words and number of pages (Joskow, 1988). Another proxy for contract complexity is a formula based on Parke (1993) and as used by Reuer and Ariño (2007), is based on the presence of eight safeguard clauses⁵. A value of one is given if the first clause is present or zero if not; two if the second clause is present or zero if not, until the 8th clause. The total sum ranges from zero to 36 and when divided by 36 creates an index from zero to one. Duplat and Lumineau (2016) use a similar but unweighted formula since there is no significant difference between weighted and unweighted measures (Barthélemy & Quélin, 2006; Duplat & Lumineau, 2016; Reuer & Ariño, 2007).

These formulas assume that an increasing number and severity of safeguards reflect the parties' anticipation for future contingencies and mitigation of moral hazards, namely opportunism. However, joint ventures are a unique breed of alliance that includes other series of important clauses and governing mechanisms, therefore I create a unique joint venture contractual complexity formula based on the dissection of the contents of all the contracts and identified the clauses included in the joint venture agreements. In order to construct this formula, I first identified the clauses that a JV should have, I based the list on the model for contractual and incorporated joint ventures by the International Trade Centre, UNCTAD and WTO (2004; 2005), the American Bar Association (2006) and Glover and Wasserman's (2003) detailed work on joint venture contract design.

Table 4.3. shows the list of the 48 clauses a joint venture contract should have.

⁵ 1) Written reports of important transactions; 2) written notice of breach of contract; 3) auditing rights; 4) confidentiality; 5) non-solicitation, non-competes; 6) termination; 7) arbitration; 8) lawsuits.

Table 4.3. Joint venture contract clauses

Preamble or Recitals	Replacement of a party	Duration of the Joint Venture
Contractual definitions	Call options	Termination of the Joint Venture
Description of the parties	Put options	Hardship
Form of joint venture	Board of directors	Force Majeure
Name of the joint venture	Voting rights	Confidentiality
Location of the joint venture	Meetings	Liability
Objectives and scope of the JV	Time deadlines	Breach of obligations
Equity share	Performance-production mandates	Non-compete/non -solicitation
Contributions of the Parties	Distribution in profits and losses	Deadlock
Parties responsibilities and duties	Tax considerations	Applicable law
Organization and management	Accounting and auditing rights	Resolution of disputes
Appointment of key personnel	Products to be produced	Arbitration-mediation
Right to recruit and dismiss	Exclusivity	Miscellaneous clauses
Information access	Sales territory	Appendixes
Actions requiring consent (vetoes)	Intangible assets, know-how, IPR	License agreements
Change in control of a party	Research and Development	Ancillary agreements

To create an index based on these clauses I check their distributions and exclude those that are highly unbalanced. I exclude *time deadlines* and *hardship* because they are almost non-existent in the sample. I also exclude *form of joint venture*, *objectives* and *governing law* because they are too common, meaning they are present in over 98% of the contracts.

Finally, I check the correlations of the remaining 43 clauses (see appendix 9.3) and eliminate the ones that present correlations over 0.45 with other clauses. The eliminated ‘redundant’ clauses are: contributions of the parties, organization and management, appointment of key personnel, replacement of a party, voting rights, meetings, distribution in profits and losses, tax considerations, liability, breach of obligations, resolution of disputes. The results are the 32 clauses seen in table 4.4.

Table 4.4. Joint venture contract complexity clauses

Preamble or Recitals	Products to be produced
Contractual definitions	Exclusivity
Description of the parties	Sales territory
Name of the joint venture	Intangible assets, know-how and IPR
Location of the joint venture	Research and development
Equity share	Duration of the Joint Venture
Parties responsibilities and duties	Termination of the Joint Venture
Right to recruit and dismiss personnel	Force Majeure
Information access	Confidentiality
Actions requiring consent (vetoes)	Non-compete/non -solicitation
Change in control of a party	Deadlock
Call options	Arbitration
Put options	Miscellaneous clauses
Board of directors	Appendixes
Performance mandates	License agreements
Accounting and auditing rights	Ancillary agreements

With these 32 clauses I create an unweighted index of joint venture contract complexity (JVCC) as defined by the following formula:

$$\text{Joint Venture Contractual Complexity (unweighted)} = \frac{1}{32} \sum_{i=1}^{32} C_i$$

Where C_i takes the value of one if the first clause is present in the contract or zero if not; one if the second clause is present or zero if not, likewise until the 32nd clause. The total sum ranges from zero to 32 and when divided by 32 creates an unweighted index that ranges from zero to one. The closer to one the more complex the contract. The mean joint venture contractual complexity of the sample is 0.53.

Not surprisingly the new formula is correlated to the other measurements of contractual complexity, such as total number of words (Corr 0.58), total number of articles (Corr 0.65) and Parkhe's eight weighted safeguards (Corr 0.53), which as a robustness test I also used as a dependent variable with similar results.

Finally, appendix 9.4 further explores a method through which a condensed JV contractual complexity formula can be calculated by only using five contractual clauses. This formula was not used in this chapter because of its polemic methodology. It is annexed as an appendix because its interesting inductive findings could open avenues for future research on JV contract complexity.

Independent Variables:

Type of joint venture (Domestic vs International): A dummy variable coded 0 when the joint venture partners are from the same country (domestic JV) and 1 when the parties are from different countries (international JV).

The following country level variables are gathered according to the country where the contract is enforced and the year it was signed:

Legal System: a binary dummy variable coded 0 for common law and 1 for civil law countries based on La Porta, Lopez-de-Silanes, and Shleifer (2008) but grouping together all civil law countries as used by Hearn (2015).

Court Efficiency: I use the World Bank's Doing Business data for contract enforcement (World Bank, 2017). This variable is divided into *cost to enforce a contract* -measured as a percentage of the claim value- and time to *enforce a contract* -measured in days- and transformed into years by dividing by 365.

Corruption: I use Transparency International's *corruption perceptions index* (CPI). Ranked from 0 to 100, however one must be careful when interpreting this index because the higher the CPI the less corruption, therefore I transform the variable by using the formula $\text{Corruption} = 100 - \text{CPI}$, in this case the higher the number the higher the

corruption, which makes interpretations of the results and coefficients more straightforward.

Control Variables

High tech vs low tech joint ventures: The knowledge based view supports the idea that joint ventures allow better tacit knowledge transfer between the partners, however, this also increases the changes of misappropriation (Kogut & Zander, 1992). The higher the tacit knowledge, such as in high tech joint ventures, generates uncertain future contingencies that are difficult to anticipate in a contract (Contractor & Ra, 2002; Oxley, 1997).

Since technology contractual relationships are becoming more sophisticated (Mayer & Argyres, 2004; Ryall & Sampson, 2009), I control for high tech vs low tech industries. In line with Aulakh, Jiang and Li (2013), who follow the AeA2 comprehensive definition of industries, I identify high tech industries (coded as 1) with the SIC codes 283, 357, 365, 366, 367, 381, 382, 384, 386, 481, 482, 484, 489 and 737; and low tech for the rest (coded as 0).

Year dummies: I use a year dummy to control for time effects.

Number of parties: A count variable with the number of partner firms.

Firm size difference: Based on Duplat and Luminaeu (2016), I control for size difference between partners. To calculate the variable each firm was assigned an employee range: 1) single employee; 2) 2 to 10 employees; 3) 11 to 50 employees; 4) 51 to 200 employees; 5) 201 to 500 employees; 6) 501 to 1000 employees; 7) 1001 to 5000 employees; 8) 5001 to 10000 employees; 9) more than 10001 employees. And finally, the

measure is the absolute value of the difference between the employee size of the partner firms.

Previous contact with partner: Based on Dupland and Lumineau (2015), I control for previous interactions that allow partners to learn from each other and also to gain trust. I create a binary dummy variable that takes value zero if partner firms had no previous alliance with each other and the value of one if otherwise.

Industry: I use six industry dummies based on the first two SIC numbers to control industry effects.

Estimation

I test the hypotheses using a generalized linear model (GLM) represented in the following formula:

$$\begin{aligned} \text{JV Contractual Complexity} = & \beta_0 + \beta_1 \text{International JV} + \sum_{i=1}^3 \beta_{2,i} \text{Law}_i \\ & + \beta_3 \text{Time to enforce a contract} + \beta_4 \text{Cost to enforce a contract} + \beta_5 \\ & \text{CPI} + \beta_6 \text{High Tech JV} + \beta_7 \text{Number of parties} + \beta_8 \text{Previous contact} \\ & \text{with partner} + \beta_9 \text{Size difference} + \beta_{10} \text{Year} + \sum_{i=1}^5 \beta_{11,i} \text{Industry}_i + \varepsilon \end{aligned}$$

4.4. Results

Table 4.5 reports the correlation matrix including descriptive statistics (means and standard deviations). I tested for multicollinearity by computing the variance inflation factors (VIFs) and the highest VIF was 4.20, below the recommended ceiling of ten (Chatterjee & Price, 1991).

Table 4.5. JV Contract Complexity - Correlation matrix and descriptive statistics

	Variable	Mean	s.d.	1	2	3	4	5	6	7	8
1	JV Contract Complexity	0.53	0.16								
2	High Tech JV	0.32	0.47	0.36							
3	Number of Parties	2.27	0.63	0.12	0.06						
4	Previous Contact with Partner	0.18	0.38	0.12	0.03	0.08					
5	Size Difference	1.76	1.79	0.19	0.02	0.09	0.07				
6	International JV	0.52	0.50	0.32	0.20	0.09	0.03	0.07			
7	Time to Enforce a Contract	1.12	0.45	0.13	-0.01	-0.02	0.00	0.02	0.11		
8	Cost to Enforce a Contract	25.82	42.44	-0.04	-0.11	0.03	0.01	-0.06	0.03	-0.17	
9	Corruption Perception Index	0.35	0.20	0.12	0.21	-0.01	-0.07	0.09	0.24	0.15	0.14

Number of Observations 601. Bold numbers p<.05.

The regression models are reported in Table 4.6. Model 1 only includes the control variables; in models 2 to 6, I test each independent variable with the control variables, and the final model (7), includes all variables and controls.

Regression results show strong support for hypothesis 1, which suggests that JV contractual complexity in International JVs is higher than in domestic JVs.

There is no support for hypothesis 2. In this analysis, I found no support for the common-law system logic that self-contained contracts are used to specify every possible contingency in joint venture contracts. More surprisingly, the results show a positive significant relationship between civil law, Chinese law and contract complexity as compared to common law. This unexpected result is an interesting possible avenue for future research, since it contradicts the current explanation regarding the impact of legal origin on contractual complexity. For example, consulting with contract lawyers, they express that the findings are not completely surprising since many civil law countries like France are more verbose and use a more complex language in their contracts. On the other hand, US contracts are written in the most direct and simple way. Additionally, it seems that civil law countries usually use more formalisms that could make their contracts more extensive and therefore more complex.

There is strong support that longer court times are correlated with joint venture contractual complexity (hypothesis 3a), meaning that more time inefficient court systems are related to joint venture contract complexity. However, there is no evidence for Hypothesis 3b, which proposed that the costs of enforcing a contract in the courts are also related to joint venture contract complexity.

Finally, competing hypotheses 4a and 4b were tested to determine the direction of the relationship between corruption and JV contract complexity. The final model (7) shows evidence that high corruption levels are related to low contract complexity (H4b), supporting the idea that firms may want flexibility that simpler contracts provide when facing an environment of uncertainty. Model six shows no significance when corruption perception is tested only with the control variables. Further additional tests were performed splitting the sample into high tech and low tech joint venture subsets. I found that increasing corruption levels have a negative effect on the contractual complexity of non-high tech joint ventures while it does not affect negatively nor positively the complexity of high-tech JV contracts. Therefore, it seems that even in uncertain environments of corruption, contracts with important proprietary knowledge such as in high tech cannot afford to be simpler and allow them to be substituted by other informal mechanisms such as relationships.

Table 4.6. Regression results – Dependent Variable: JV contract complexity

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
High Tech JV	0.12*** (0.02)	0.11*** (0.02)	0.11*** (0.02)	0.12*** (0.02)	0.12*** (0.02)	0.12*** (0.02)	0.10*** (0.02)
Number of Parties	0.02+ (0.01)	0.01 (0.01)	0.02+ (0.01)	0.02+ (0.01)	0.02+ (0.01)	0.02+ (0.01)	0.01 (0.01)
Previous Contact with Partner	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)	0.04* (0.02)
Size Difference	0.02*** 0.00	0.01*** 0.00	0.01*** 0.00	0.02*** 0.00	0.02*** 0.00	0.02*** 0.00	0.01*** 0.00
Year	Included	Included	Included	Included	Included	Included	Included
Industry: Manufacturing	0 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Industry: Mining	0.01 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Industry: Services	-0.02 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.01 (0.02)
Industry: Finance, Insurance, Real State	-0.03 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.03 (0.03)
Industry: Transportation, Communications	-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)
Industry: Retail/Wholesale trade	-0.03 (0.04)	-0.03 (0.04)	-0.05 (0.04)	-0.05 (0.04)	-0.05 (0.04)	-0.05 (0.04)	-0.03 (0.04)
Domestic vs International JV (H1)		0.08*** (0.01)					0.07*** (0.01)
Common Law (H2)			0 (.)				0.00 (.)
Civil Law			0.07*** (0.02)				0.06* (0.02)
Chinese Law			0.03+ (0.02)				0.08** (0.03)
Hybrid Law			0.05+ (0.03)				0.06+ (0.03)
Time to Enforce a Contract (H3a)				0.05*** (0.01)			0.04** (0.01)
Cost to Enforce a Contract (H3b)					0.00 0.00		0.00 0.00
Corruption Perception Index (H4 a,b)						0.03 (0.03)	-0.17** (0.06)
Constant	4.52 (2.81)	4.44 (2.72)	2.83 (2.83)	5.71* (2.80)	4.52 (2.82)	4.21 (2.83)	4.44 (2.79)
Log Likelihood	300	321	308	307	300	301	331
Chi-Square	142	195	160	159	142	143	219
Akaike Information Criterion	-578	-618	-588	-590	-576	-578	-626
Number of Observations	601	601	601	601	601	601	601

+ p<0.10, * p<0.05, ** p<0.01, ***p<0.001

Robustness tests:

I tested the results with earlier measures of contract complexity such as contract length and number of clauses and the results are similar. Some scholars mention that the weighted formula that gives more importance to certain provisions is unnecessary

(Duplat & Lumineau, 2016), therefore I also tested a non-weighted version of the formula and the results remain very similar.

Discussion:

The study of alliances has lacked details about contractual agreements due to the unavailability of data. As Contractor and Reuer (2014, p.241) stated, “conducting alliance research was akin to practicing medicine without dissection.” Databases containing the complete agreements are now available, allowing researchers to practice alliance anatomy and dissect alliance research. However, databases such as *ReCap*, *Current Agreements Database* and *UK PharmaDeals* (Hagedoorn) focus on the biotech and pharma industries. Fortunately, advances in programming, data mining and coding have allowed scholars to search the world-wide web with algorithms that allow researchers to obtain data that have not been accessible before. More importantly, these technologies have allowed us to extract data from the biggest repository of available information for public companies in the USA, namely the securities exchange commission (SEC).

With these data, I add to the literature of alliance studies and contract complexity by examining the clauses of over 600 joint venture contracts. Specifically, I show that institutional variables of the country where the contract is enforced are related to joint venture contract complexity. This adds an additional level of analysis to research on contractual complexity that is mostly based on partner and transactional characteristics and/or survey and interview data. I find that joint venture contracts tend to be more complex when enforced in countries with a Civil or Chinese legal system as well as in countries where the courts are slower. On the other hand, I find that in countries where corruption is high, the joint venture contract is simpler, which aligns with the literature

arguing that informal institutions such as culture and relationships can substitute for institutional voids such as in the case of poorly regulated contracts (Uzzi, 1997), since relationships may provide greater flexibility than contracts (Hoetker & Mellewigt, 2009; Lee & Cavusgil, 2006). However, robustness tests hint that joint ventures with high proprietary knowledge such as high-tech ventures, are not simpler in a high corruption environment and therefore relationships are not a substitute in this case. This special case is an interesting avenue for more detailed future research.

When crafting a joint venture contract, there are several negotiations regarding different clauses, a critical one being the location where the contract will be enforced, namely governing or applicable law. This clause helps minimize the unpredictability of the contractual relationship, reduce litigation costs, and protect certain rights of the parties (Savare, 2004). A key managerial implication of this study is that the institutional environment of the country where the joint venture contract is enforced has an impact on its complexity. And while slow courts and civil law countries tend to increase the complexity of the joint venture contract, in countries where corruption is high, joint venture contracts -excluding high tech- tend to be simpler and relational ties should be emphasized. In this sense, it is important to be aware how informal institutions of a country, namely the culture, act as a substitute or complement for contract complexity. Therefore, it is vital to be aware of different cultures' interpersonal relationship mechanisms, for example *wasta* relationships in the Middle East (Cunningham & Sarayrah, 1993), *guanxi* in China (Xin & Pearce, 1996), *blat* in Russia (Ledeneva, 2009) and *compadrazgo* in Latin America (Velez-Calle, Robledo-Ardila, & Rodriguez-Rios, 2015).

Limitations and future research

The results are limited to my sample. This sample is composed of all joint ventures filed to the Securities Exchange Commission (SEC) from 2000 to 2016. This includes joint ventures in which at least one of the parties reports to the SEC, meaning that some private and smaller companies may be included but most are public companies listed in the US. Also, other types of private agreements are not studied here.

An additional limitation of this study is that due to the unavailability of resources, I do not take into account whether firms rely on external experts (e.g. law firms) in order to design contracts (Argyres et al., 2007). This opens an interesting avenue for future research that complements the study of contracts themselves. Interviews and surveys could tell us about the process of how and by whom these contracts were negotiated and designed.

Another opportunity would be to analyze the tension between the manager and the lawyer. It may be the case that lawyers prefer simpler and shorter contracts while managers prefer more “bullet proof” contracts that protect themselves.

Finally, I believe further research is necessary in terms of the *choice of law* or *applicable law* provision in contracts since this single provision determines all the institutional factors that affect not only the complexity of the contract but its enforcement. Specifically, by linking the strategy literature with the legal literature on choice of law researchers could begin to understand the strategic implications of this decision, how this clause is negotiated and which factors determine the final choice of law of the contract.

4.5. Conclusions

Little we know about joint venture contracts and their complexity. Alliance research has shown that partners' characteristics influence alliance contract complexity, however scant attention has been given to joint ventures or to the relationship between the external environment and contractual complexity. I find that the institutional environment of the country where the contract is enforced has a direct relationship with joint venture contract complexity. Contracts tend to be more complex when they take place between partners from different countries, are enforced in countries with a civil legal system and where courts take more time to enforce contracts. Also, contracts are simpler when they are enforced in a country with high corruption levels. These results give insight to researchers and managers about the importance of the governing law clause in joint venture contracts and its institutional implications for the cost and time invested in designing joint venture contracts.

5. STUDY 2. TO BOARD OR NOT TO BOARD: DETERMINANTS OF JOINT VENTURE BOARD OF DIRECTORS CREATION

ABSTRACT

A joint venture (JV) board or management committee is often used to help partner firms monitor and manage the relationship, align their interests and address possible conflicts. However, little is known about what determines whether a board is actually established. By analyzing the contracts and by drawing from transaction cost economics and agency theory, preliminary results show that JV boards are more likely to be created for more JVs with higher number of contractual safeguards, as for international JVs and for JVs hosted in countries with lower quality of intellectual property rights protection.

5.1. Introduction

Boards of directors have been the object of study within corporate governance studies for decades (Adams, Hermalin, & Weisbach, 2010), especially their implications on firm performance (Hillman & Dalziel, 2003; Yermack, 1996; Zahra & Pearce, 1989). Boards also exist and play an important governance role in subsidiaries (Du, Deloof, & Jorissen, 2015; B. Kim, Prescott, & Kim, 2005) and strategic alliances (Cuypers et al., 2017; Reuer & Devarakonda, 2016). However, the boards of subsidiaries and alliances have been understudied, especially in the latter case. And while important in non-equity alliances, they are not always used because they are costly to implement and the net benefits not always positive (Reuer & Devarakonda, 2016). In contrast, boards are identified as a crucial governance mechanism in alliances such as equity joint ventures (Klijn et al., 2017; Reuer, Klijn, & Lioukas, 2014) and therefore their existence is assumed. However, since joint ventures without boards do exist (Ernst & Bamford, 2005), why do partner

firms omit such an important governance element within their ventures? In this article, I examine the determinants of the establishment of a board of directors in this type of hybrid organizational form, namely joint ventures.

The main characteristic of a joint venture is shared ownership which has advantages and disadvantages. On the positive side, it grants access to resources and combined capabilities, while on the other hand, if the partner's interests are not completely aligned -which is often the case- the chances of conflict and appropriability hazards increase (Oxley, 1997; Schaen, 1988). Governance mechanisms such as boards help minimize conflict and opportunism by monitoring, controlling and coordinating the joint venture activities (Oxley, 1997).

The alliance literature argues that while control through well-established governance mechanisms is important, there should be some level of autonomy in order for the joint venture to have some flexibility and to be able to create value (Kumar & Seth, 1998). Therefore, different governance mechanisms and the balance between control and autonomy in an alliance is a key determinant of its performance (Harrigan, 1988). This balance is defined by the different levels of control the partner firms utilize for their venture and how they interact. Therefore, a critical managerial decision when crafting and negotiating the joint venture contract is whether to have a board of directors and its control functions.

Joint ventures are frequently excluded from the partner firms' regular self-monitoring mechanisms and do not always possess internal governance mechanisms such as boards of directors (Ernst & Bamford, 2005); therefore, they are either left adrift and partner firms possess little control over the operations of the venture, or instead, one of

the partners is in complete control and the co-venturer assumes a passive role (Glover & Wasserman, 2003). Studies on joint venture boards have not fully addressed this issue and either assume JVs have boards of directors or exclude JVs without boards from the data, in order to focus on specific aspects of the board (Argente-Linares, López-Pérez, & Rodríguez-Ariza, 2013).

The management committee of a joint venture, namely the board of directors is a key control mechanism of the relationship (Cuypers et al., 2017). It serves as the principal setting through which the parties discuss and monitor the operation of their venture (Björkman, 1995). Therefore, examining the determinants of the existence of the board is important in order to understand this governance tool in a complex relationship such as a joint venture. In this study, I explore the determinants of the existence of the board by examining the initial contract between the joint venture parties.

While studies on alliance governance have examined the structural determinants of the existence of a steering committee in non-equity alliances (Reuer & Devarakonda, 2016), and some determinants of foreign board involvement in international joint ventures (Cuypers et al., 2017), there is a call for more research on joint venture boards and external determinants of their involvement and composition. In this study, I answer these calls by exploring this key feature of joint venture governance, and I identify determinants of the creation of such management committees. Specifically, I answer the following question: What determines whether a joint venture creates a board of directors?

This study makes three contributions. First, it deepens our understanding of joint venture governance practices by exploring the determinants of JV board existence. Second, it contributes to the alliance and governance literatures by studying boards from

a contractual perspective. And finally, it establishes a relationship between two governance mechanisms such as the contract and the board.

This paper continues with a review of the literature on boards of directors in firms, subsidiaries, alliances and joint ventures, followed by theory and hypotheses development. I then describe the joint venture data, methods and preliminary results. The final sections consist of a discussion with managerial implications, directions for future research, limitations and conclusions.

5.2. Literature review, theoretical background and hypotheses

The literature on board of directors is vast. Researchers have been fascinated by the topic and have examined the roles and composition of this governance mechanism on firms and its performance implications (Hillman & Dalziel, 2003; Yermack, 1996; Zahra & Pearce, 1989). The most common role of the board is the minimization of the agency problem by monitoring managers; however, board members can also be active participants in strategic decision making and networking (Du et al., 2015). On the other hand, the board can play a slightly different role in the case of subsidiaries, because the agency problem does not take place between managers and shareholders, but rather between subsidiary management and headquarters. Thus, the subsidiary board also serves as a mechanism aligning the interests of the headquarters and the subsidiary, which is especially important in the case of foreign subsidiaries (Du et al., 2015).

Non-equity alliances also use boards, commonly regarded as steering committees; however, these are different from regular boards in firms and subsidiaries since they help coordinate and align the interests of two different firms and have specific functions and even some decision power which is limited to what is described in the alliance contract

(Reuer & Devarakonda, 2016). In this sense, the committee is similar to a regular board in terms of advisory roles, though in non-equity alliances it serves as a complementary administrative and coordinating role that can mitigate opportunism and possible problems arising from unanticipated contingencies not specified in the contract (Kumar & Seth, 1998; Reuer & Devarakonda, 2016; Smith, 2005).

In equity joint ventures, which are separate entities owned by a few large shareholders who usually have divergent interests and approaches to operating and profiting, the board is a key governance and management mechanism (Cuypers et al., 2017). In joint ventures, boards perform traditional functions of monitoring opportunism and advising, but also have operational responsibilities with an active role in the management of the venture while keeping the interests of the parties aligned (Harrigan, 1988). Even more so, board members, including the board director, tend to be employees of the partner firms, creating conflicts of interest between the interests of the partners and the venture (Bamford & Ernst, 2005). Therefore, in joint ventures, the board or management committee usually has decision powers that go beyond the contract. For example, the joint venture agreement between the Dutch semiconductor firm *Micron Semiconductor* and the Taiwanese firm *Nanya Technology Corporation*, for the manufacturing and distribution of dynamic random-access memory (DRAM) products⁶, states the following regarding the board:

“Power and Authority. The Board of Directors shall be responsible for the overall management of the business, affairs and operations of the Joint Venture Company. The Board of Directors shall have all the rights and powers given to it under the Articles of Incorporation and the Applicable Laws of the ROC, including without limitation, the ROC Company Law.”
(Micron Technology Inc., 2008)

⁶ DRAM is a type of random access memory (RAM) commonly used in digital electronics such as computers and smartphones.

This example shows that the joint venture board has great decision power over the joint venture. Therefore, representation by members from both companies is of great importance because it balances or shifts the power relationship established in the traditional measure of power, namely equity distribution. And while the number of members in the board tends to be correlated with the equity share of the partners, this is not always the case (Cuypers et al., 2017).

On the other hand, there are joint ventures in which there is no board or management committee and all decisions either lie on the manager of the venture or one of the parties. Such is the case of the joint venture (*AAMI*) between the American firm *NT Holding Group* (party A) and the Chinese firm *Shanxi Jinhai Metal Group* (party B), for coal refinery and coking coal production, in which there is no board:

*“ARTICLE 8. MANAGEMENT STRUCTURE
The business affairs of AAMI shall be managed by Party B.”
(NT Holding Group, 2006)*

In this example, the joint venture managerial decisions are performed by one of the parties and there is no established board of directors. It is worth mentioning that this joint venture is actually managed by the party with the minority equity share, party B with 30%, shifting the power balance from the majority equity holder to the minority partner. Control of the joint venture through the board, rather than through equity share, has been discussed in the literature (Geringer & Hebert, 1989), but the determinants of such a shift have not yet been examined. Moreover, if the board is such an important control mechanism that also reduces exchange hazards such as opportunism and misappropriation (Oxley, 1997), why do certain joint ventures choose not to establish it in the first place? What are the determinants of whether a joint venture decides to

establish a board from the outset and describe its roles in the initial contract? According to transaction cost economics, firms may wish to avoid the cost of establishing boards when they seem unnecessary but they also may need them to monitor opportunistic behaviors (Smith, 2005). However, using the same transaction cost logic, a board may give partner firms access to privileged information and potentially increase the chances of opportunism (Oxley, 1997). In order to further understand the governance of joint ventures, I explore which factors may affect the decision whether or not to establish a board.

Contractual safeguards

The joint venture contract is an important governance tool for this type of alliance since it creates the legal framework in which the alliance takes place (Luo, 2002). From a transaction cost economics perspective, the contract also helps lower costs associated with opportunism and exchange hazards (Harrigan, 1988; Williamson, 1979). However, crafting contracts itself is costly and time consuming (Williamson, 1979; Williamson, 1998), therefore firms should contract efficiently by balancing the exchange hazards with the complexity of the contract (Reuer & Ariño, 2007) and other governance mechanisms such as the board of directors. Because contractual safeguards cannot possibly anticipate all unexpected contingencies (Coase, 1937), and since bounded rationality limits our understanding of the future contracts, these contracts are usually referred to as *incomplete* (Hart & Moore, 1988). Previous research suggests that boards of directors substitute for contractual safeguards as they can fill the gaps of incomplete contracts by being able to react and adapt to previously unspecified contingencies (Oxley, 1997; Reuer & Klijn, 2018; Williamson, 1991). Therefore, I hypothesize that:

H1a: The lower the number of safeguards in a joint venture contract, the higher the likelihood that a joint venture board will be created.

On the other hand, as a governance mechanism, contractual safeguard clauses - specifically in terms of pre-termination, arbitration and lawsuits- indicate high asset specificity which signals a relationship in which the parties anticipate several contingencies and in which they try to reduce ex post hazards (Reuer & Ariño, 2007; Reuer & Devarakonda, 2016). In this case, contractual specificity in the monitoring roles of the parties and establishment and functions of other mechanisms such as the board may be necessary. Thus, the board of directors could play a complementary monitoring and controlling role to contractual safeguards (Contractor & Reuer, 2014; Reuer & Klijn, 2018). Therefore, it is expected that:

H1b: The higher the number of safeguards in a joint venture contract, the higher the likelihood that a joint venture board will be created.

Joint Venture Size

Ex ante governance mechanisms such as the contract are important to mitigate possible future opportunism (Coase, 1937; Luo, 2002). However, it is known that joint ventures operate under so called incomplete contracts since it is impossible for contracts to anticipate every possible future contingency (Hart & Moore, 1988). In this sense complementary -and supplementary- ex post governance mechanisms such as a board of

directors are necessary in order to increase monitoring (Klijn et al., 2017). This need of monitoring increases as organizations increase in size. Therefore, the larger a firm, the higher its complexity and the higher the need for the establishment of formal governance mechanisms to increase coordination, decision making and monitoring functions (Coles, Daniel, & Naveen, 2008). In this sense, just like in any other organization, joint venture size is related to higher monitoring needs as exchange hazards increase (Oxley, 1997; Reuer & Klijn, 2018). Therefore, I hypothesize that:

H2: The larger the joint venture, the higher the likelihood that a joint venture board will be created.

R & D joint ventures

In R&D projects uncertainty and control are a major concern. Internalization offers more control and reduces the uncertainty of misappropriation than other governance choices such as markets or hybrids (alliances) (Osborn & Baughn, 1990). In fact, the higher the technological intensity the more likelihood of internalization (Williamson, 1985). A joint venture poses a higher risk of exchange hazards than complete internalization, therefore as technological intensity increases the higher the likelihood that internalization will be chosen over joint ventures (Osborn & Baughn, 1990). However, in some cases, joint ventures provide a collaboration environment for firm that do not have enough internal resources to innovate on their own but altogether possess complimentary resources (Nakamura, Shaver, & Yeung, 1996). Moreover, the more complementarity of the partner technologies, the more likely firms will choose joint ventures over other types of

alliances (Cantwell & Colombo, 2000). Innovation itself carries a high degree of uncertainty which is a determinant of governance (Williamson, 1998), additionally, when there is an investment which high asset specificity and with exchanges of important tacit knowledge such as in the case of R&D joint ventures, the chances of opportunism and misappropriation increase (Chalos & O'Connor, 2004; Gulati & Singh, 1998; Reuer & Klijn, 2018; Teece, 1996; Williamson, 1979). In this sense, governance mechanisms should be in place to minimize exchange hazards, and since a contract cannot possibly specify all contingencies that technological uncertainty may bring, it is expected that:

H3: The likelihood that a board will be created is higher for R&D joint ventures than for non-R&D joint ventures.

International joint ventures

International joint ventures differ from their domestic counterparts in the fact that the parties are from different countries adding an additional level of complexity (D. Chen, Park, & Newburry, 2009). Moreover, joint ventures are commonly used as an internationalization strategy through which a company that wants to enter a new market decides to share risks and receive support from a local partner (Kogut, 1988). Reuer et al. (2014) find that international joint venture (IJV) boards are less involved in the venture since the uncertain conditions of the foreign nation make it inefficient to monitor the IJV's activity. Giving autonomy to local partners is important since they know how to navigate their environments (Björkman, 1995). However, independence and less involvement does not necessarily mean the foreign partner will give up control of the operation, and therefore a governance mechanism such as a board could still take place.

Therefore, the question why certain IJVs do not even establish a board in the first place remains unanswered. Since the environment is uncertain in IJVs, and the hazards of appropriability and opportunism increase, it is expected that a board will be established, therefore:

H4: The likelihood that a board will be created is higher for international joint ventures than for domestic joint ventures.

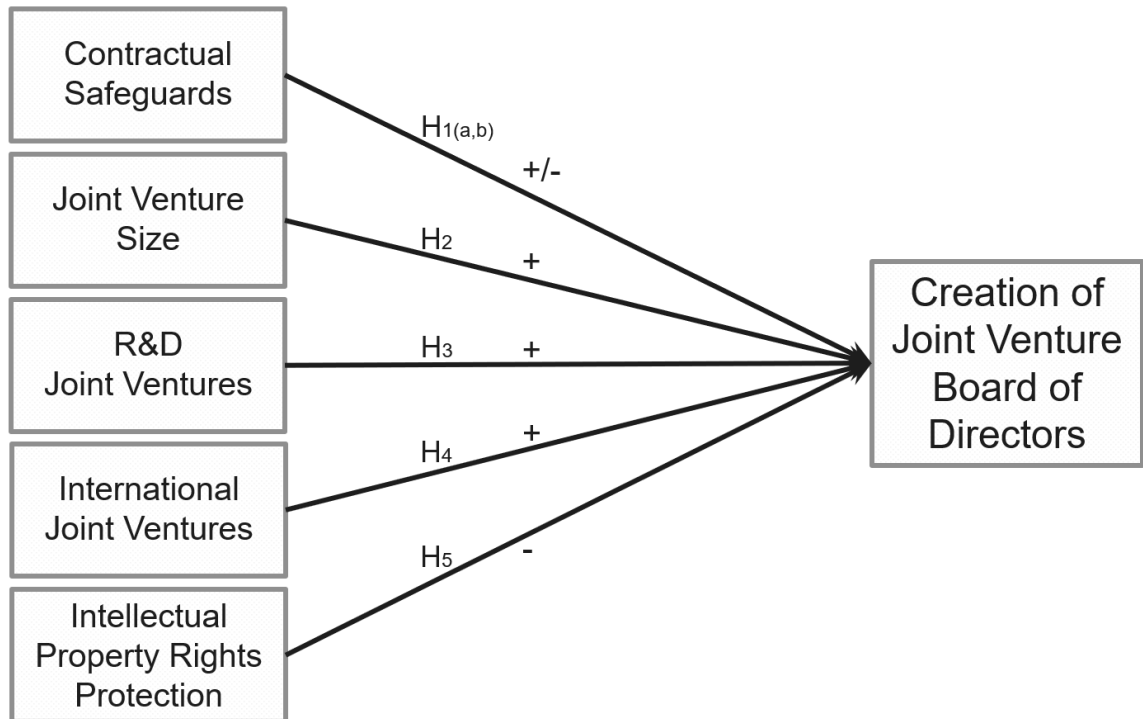
Environmental uncertainty – Intellectual property rights protection

New institutional economics (NIE) highlights the importance of institutions and their impact on economic activity (Matthews, 1986). As a branch of NIE, transaction cost economics deals with governance, specifically whether to allocate economic activity either in markets or firms (Coase, 1937) and also concerns efficient contracting (Reuer & Ariño, 2007). By using the principles of NIE and institutions, TCE also addresses possible institutional hazards such as weak property rights (Teece, 1996), which suggests that in a weak institutional environment, firms may rely more on internal governance mechanisms (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; North, 1990). An important aspect of the institutional framework of a country is the level of protection of intellectual property rights. A regulatory environment in which property rights are strong helps protect creators from misappropriation while in a weak environment appropriability hazards are high (Oxley, 1997). The joint venture is an entity hosted within a country with a unique institutional environment and specific intellectual property laws. When intellectual property rights are weak, firms need governance mechanisms such as boards

of directors to minimize opportunism and misappropriation and gain more control. On the other hand, if property rights are protected some governance mechanisms may not be necessary, therefore:

H5: The higher the IPR protection of the home country of the joint venture, the lower the likelihood that a board will be created.

Figure 5.1. Proposed Model – JV board of directors



5.3. Methods

Sample collection and description

US publicly traded companies must file their material contracts as exhibits to their annual or quarterly reports to the Securities Exchange Commission (SEC) (Overdahl, 1991). These contracts are public but are not systemically organized or catalogued, therefore each contract must be searched for manually in the exhibits of firm's filings to

the SEC. This method is tedious and time consuming and that is why few scholars have used the SEC database e.g., (Hegde, 2014; Sanga, 2014). I join these scholars in exploring this rich public repository and by using an automated program created in *Python 2.7* (and corroborated with another code in *Java 1.8*), I downloaded and created a unique database of 626 joint venture agreements filed to the Securities Exchange Commission (SEC) by publicly traded companies in the US between 2000 and 2016. Table 5.1 shows the distribution of the number of joint venture agreements in terms of industries, JV contracts that establish a board of directors, international joint ventures and R&D joint ventures. 442 of the agreements (70 %) have a board of directors while 184 joint venture agreements do not.

Table 5.1. Number of contracts: by industry, with board, IJV and R&D

Broad industry	JV contracts per industry	Contracts with board of directors (70% of total)	IJV contracts (52% of total)	JV contracts with R&D(14% of total)
Agriculture, Forestry & Fishing	1	0	1	0
Construction	4	3	1	0
Finance, Insurance & Real Estate	28	16	12	0
Manufacturing	292	226	180	81
Mining	185	126	79	3
Public Administration	4	3	2	0
Retail Trade	11	8	3	0
Services	69	40	31	3
Transportation, Communications, Electric, Gas & Sanitary Services	24	14	14	1
Wholesale Trade	8	6	3	0
Total	626	442	326	88

Measures

I test the hypotheses using a sample of 626 joint venture contracts between the years 2000 and 2016. Table 5.2 summarizes the variables, measurements and data sources.

Table 5.2. Variables, measurements and data sources.

Variable	Measurement	Data Source
JV Board Establishment	Marked one if a board of directors is established. Zero otherwise.	JV contract - Securities Exchange Comission
JV Contractual Safeguards	Weighted formula based on the presence of eight safeguard clauses.	JV contract safeguard provisions using the formula based on Parkhe (1993) as used by Reuer and Ariño (2007).
JV Size	Value of the capital contributions of the parties. Arranged in a dummy variable from 1 to 5.	JV contract - Securities Exchange Comission
Domestic Vs International JV	Country of origin the partner firms. Marked zero when both firms are from the same country (domestic) or marked one if one is from a different country (international)	JV contract - Securities Exchange Comission
R&D JVs	Marked one for R&D joint ventures. Zero otherwise.	JV contract - Securities Exchange Comission
Intellectual Property Rights Protection	IPR index. Ranges from zero to five.	Ginarte and Park (1997)
Number of parties	Number of partner firms participating in the joint venture	JV contract - Securities Exchange Comission
Industry	Industry classification of the industry of the joint venture in six broad categories based on first two SIC-digits	Securities Exchange Comission filing
Previous contact with partner	Marked zero if there has been no alliances between the partners. One otherwise.	Factiva. Securities Exchange Comission (EDGAR), SDC
Firm size difference	Absolute value of the difference between employee range of the partner firms.	Compustat, Securities Exchange Comission
Year	Indicator of the year the contract was signed	JV contract - Securities Exchange Comission

Dependent Variable:

Joint venture board establishment: I use a binary variable that takes 0 value when there is no board of directors created in the joint venture contract and 1 if a board is created.

Independent Variables:

Contractual safeguards: Based on Reuer and Ariño (2007), I used the following contractual complexity formula:

$$\text{Contractual Complexity (weighted)} = \frac{1}{36} \sum_{i=1}^8 D_i$$

The formula is based on eight safeguard provisions, where D_i is takes the value of one if the first provision is present or zero if not; two if the second provision is present or zero if not, and so on until the 8th provision. The sum ranges from zero to 36 and when divided

by 36 creates an index from zero to one. When no provisions are identified, the index is zero and when all provisions are included in the contract, the value is one.

Joint venture size: Measured as the value of the contributions of the parties as stated in the contract and then converted to the USD exchange rate of 2005. I created five dummy variables as follows: value of 1 to JVs between 1000 to 100.000 USD; 2 to JVs between 100.001 to 1.000.000 USD; 3 to JVs between 1.000.001 to 5.000.000 USD; 4 to JVs between 5.000.001 to 10.000.000; and value of 5 to joint ventures with registered capital over 10 million dollars.

Domestic or international joint venture: A binary variable coded 0 for domestic joint ventures and 1 for international joint ventures.

R&D joint ventures: A binary variable coded 0 for domestic joint ventures and 1 for international joint ventures.

Intellectual Property Rights Protection: Based on the work of authors such as Khoury, Cuervo-Cazurra and Dau (2014), I measure intellectual property rights protection by using the patent rights index from Ginarte and Park (1997). The index is an ascending scale from 0 to 5, from low protection to high protection. Some missing years were imputed based on Park (2008).

Control Variables

Number of parties: A count variable with the number of firms participating in the joint venture.

Industry: I use industry dummies to control for different industries.

Previous alliance between the partners: I control for previous collaborations between partner firms calculated as a binary variable that takes value zero if partner firms had no previous alliance with the coventurer and one if otherwise.

Partner size difference: Since the unit of analysis is the dual relationship, I control for size difference between partners (Duplat & Lumineau, 2016). The variable is calculated as the absolute value of the size of the partners in terms of employees.

Year dummies: I use year dummies to control for time fixed effects.

5.4. Results

Table 5.3 reports descriptive statistics and the correlation matrix. Multicollinearity tests show all variance inflation factors (VIFs) under 1.4 and a mean of 1.15, well below the recommended maximum of 10 (Chatterjee & Price, 1991).

Table 5.3. Correlation matrix and descriptive statistics

Variable	Obs	Mean	s.d.	1	2	3	4	5	6	7	8
1 Board of Directors	626	0.71	0.46								
2 Number of Parties	626	2.30	0.74	0.06							
3 Previous Alliances with Partner	626	0.18	0.38	-0.08	0.02						
4 Size Difference	626	1.79	1.80	0.14	0.08	0.07					
5 Contractual Safeguards	549	0.42	0.16	0.27	0.07	-0.01	0.08				
6 Joint Venture Size	394	3.41	1.36	0.29	0.10	0.09	0.11	0.21			
7 R&D Joint Ventures	626	0.14	0.35	0.18	0.10	-0.06	0.00	0.13	0.15		
8 International Joint Ventures	626	0.52	0.50	0.27	0.08	-0.10	0.05	0.18	0.08	0.16	
9 Intellectual Property Rights Protection	601	0.66	0.35	0.29	0.05	-0.09	0.07	0.06	0.21	0.14	0.30

Bold numbers p<.05.

The probit model results are reported on table 5.4. In the first model I only used control variables, in models two to six I use each independent variable along with the control variables and in model seven I include all variables and controls.

The first hypothesis (b) which stated that the likelihood that a joint venture will establish a board as contractual safeguards increase, is strongly supported (models two and seven, p<0.001).

The second hypothesis that suggests that larger joint ventures are more likely to establish a board of directors is also strongly supported (models two and seven, $p < 0.001$).

Hypothesis three which posits that R&D joint ventures are more likely to establish a board of directors was supported (model two, $p < 0.001$; model 7, $p < 0.1$).

Hypothesis four (models five and seven), show strong significant support ($p < 0.001$ and $p < 0.01$ respectively) for the likelihood that an international joint venture will establish a board of directors.

Finally, hypothesis five (models 6 and 7) which states that the likelihood that a board will not be created in joint ventures hosted in countries where intellectual property rights are high is supported ($p < 0.001$ and $p < 0.01$, respectively).

Table 5.4. Probit model results – Dependent Variable: Existence of JV board of directors

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Industry: Manufacturing	0 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Industry: Mining	-0.2 (0.13)	-0.16 (0.15)	-0.24 (0.17)	-0.03 (0.14)	-0.12 (0.13)	-0.29* (0.14)	0.03 (0.21)
Industry: Services	-0.42* (0.18)	-0.33 (0.21)	-0.05 (0.28)	-0.26 (0.18)	-0.34+ (0.18)	-0.47* (0.19)	0.23 (0.37)
Industry: Finance, Insurance, Real State	-0.42 (0.26)	-0.60* (0.30)	-0.15 (0.36)	-0.23 (0.26)	-0.33 (0.26)	-0.35 (0.26)	0.21 (0.43)
Industry: Transportation, Communications	-0.44 (0.27)	-0.62* (0.32)	0.56 (0.57)	-0.29 (0.28)	-0.45 (0.28)	-0.46 (0.28)	0.59 (0.69)
Industry: Retail/Wholesale trade	0.02 (0.33)	0.29 (0.40)	0.23 (0.47)	0.20 (0.33)	0.18 (0.34)	0.03 (0.33)	0.80 (0.53)
Number of Parties	0.12 (0.08)	0.05 (0.10)	0.08 (0.13)	0.13 (0.09)	0.09 (0.09)	0.09 (0.09)	-0.05 (0.15)
Previous Alliances with Partner	0.14 (0.15)	0.09 (0.17)	-0.18 (0.21)	0.12 (0.15)	0.13 (0.15)	0.15 (0.16)	-0.27 (0.24)
Size Difference	0.08* (0.03)	0.08* (0.04)	0.07+ (0.04)	0.07* (0.03)	0.07* (0.03)	0.08* (0.03)	0.06 (0.05)
Year	Included	Included	Included	Included	Included	Included	Included
Contractual Safeguards (H1)		2.60*** (0.41)					2.06*** (0.62)
Joint Venture Size (H2)			0.27*** (0.06)				0.26*** (0.07)
R&D Joint Ventures (H3)				0.88*** (0.22)			0.97+ (0.51)
International Joint Ventures (H4)					0.64*** (0.11)		0.51** (0.20)
Intellectual Property Rights Protection (H5)						-0.95*** (0.18)	-0.96** (0.34)
Constant	102.49*** (25.79)	123.12*** (29.75)	113.36** (37.57)	104.79*** (26.29)	108.72*** (26.46)	78.26** (27.56)	78.42+ (46.69)
LogLikelihood	-357	-263	-182	-347	-341	-324	-122
Chi-Square	44	93	51	63	76	75	96
Akaike Information Criterion	736	551	389	719	706	672	276
Number of Observations	626	549	394	626	626	601	347

+ p<0.10, * p<0.05, ** p<0.01, ***p<0.001

Robustness tests:

So far, I have tested the results with other institutional factors such as economic development, corruption, rule of law, and the results hold. I also use other measures for contractual safeguards such as unweighted measures, length and number of clauses and the results are very similar.

Discussion:

Surprisingly, research on the governance of JVs is still scant and has mainly used overly-broad indicators of governance such as equity distribution (ownership percentage), while paying less attention to important governance mechanisms such as the contract or the

joint venture board of directors (Contractor & Reuer, 2014). JV boards are an important governance mechanism because they help partner firms monitor and coordinate the venture. They also help align the interests of the partner firms and address possible conflicts (Harrigan, 1988). JV boards differ from regular boards of directors in that they have more ‘hands-on’ operational responsibilities. However, little is known the factors contributing to their establishment.

In this paper, I identify some determinants of the establishment of boards of directors in joint ventures, adding an additional level of understanding to the commonly used equity vs non-equity alliance categorization. While equity share is an important governance mechanism that gives some managerial control, mechanisms such as boards could shift the power relationship or simply delay (and even block) the decisions of the majority equity holders. Some scholars have drawn attention to the role of the board of directors in joint ventures, especially in international joint ventures (Reuer et al., 2014; Reuer & Ariño, 2007). In this study, I add to this literature by examining the antecedents which determine the establishment of a board by dissecting over 600 joint venture contracts.

I find that joint ventures with higher number of safeguards are more likely to establish a board as described in the first written agreement between the parties, meaning the board is a complement and not a substitute for contractual complexity. This provides additional empirical evidence to the discussion on the substitutive or complementary roles of boards and contracts, especially on the under researched substitutive effects (Reuer & Klijn, 2018). Moreover, large, international and R&D JVs are more likely to establish a board, while JVs hosted in countries with higher intellectual property rights

protection are less likely to create a board. Interestingly, the control variables show that the number of parties does not seem to have a relationship with the likelihood of the creation of a board.

The hypothesis regarding the likelihood of the creation of boards on R&D joint ventures was supported but not strongly ($p < 0.10$). This could be because the appropriability hazard risks associated with the exchange of knowledge in R&D joint ventures is minimized by other internal or external governance factors. Or precisely because of the high exchange hazard risks, the R&D joint venture is left self-contained and boards are avoided in order to prevent misappropriation from directors of the partner firms.

While Reuer et al. (2014) find that the intensity of board participation of the foreign partner in IJVs varies according to their roles, I find that boards are actually more likely to be established in international JVs than in domestic JVs. Therefore, the establishment of a board in IJVs is important even if the degree of its involvement in the venture could be low or high depending on their internal and external roles and country factors.

Limitations and future research

The generalizability of my results is limited to my sample size and type. 626 joint venture agreements filed to the SEC by US publicly traded companies. Another limitation is that the data is cross sectional, not showing future renegotiations between partners in which they may decide to implement a board.

This article contributes to the alliance and boards of director's literatures by studying boards in joint ventures as a control mechanism. I find a complementary

function of the board in regard to another governance mechanism, namely the contract. However, I do not cover all joint venture governance mechanisms and how they complement or substitute each other, this could be an interesting avenue for future research.

Additionally, while we know that boards in IJVs are less involved in the venture (Reuer et al., 2014), we know little about the IJVs that decide not to have a board at all. Further, exploring why certain IJVs do not establish a board could be an interesting avenue for future research.

Another interesting fact worth mentioning is that in addition to finding joint ventures in which the board shifts the power relative to equity share, I also found joint ventures with 50/50 equity share that have no board of directors and in which one party has all decision power. This means that the *myth* of the balanced 50/50 equity joint venture should be further examined, and the categorization of joint ventures as majority (or minority owned) or 50/50 should be reevaluated.

Finally, this article is about antecedents of the establishment of boards in JVs; it would be interesting to further study performance implications of such decisions.

5.6. Conclusion

In addition to equity share and a contract, boards of directors are a crucial governance mechanism of such a complex hybrid organizational entity as the JV. I find that joint ventures are more likely to establish a board as specified in the initial written agreement when the venture is large, complex, international; and less likely in joint ventures hosted in countries with high quality intellectual property rights. These results are useful to

researchers and managers regarding the negotiation and contractual establishment of the board of directors in joint ventures as an additional governance and control mechanism.

6. STUDY 3. UNDERSTANDING THE DEVIATION IN THE RELATIONSHIP BETWEEN EQUITY SHARE AND BOARD PARTICIPATION IN JOINT VENTURES

ABSTRACT

Little is known about the interactions between governance mechanisms in joint ventures, especially about the relationship between equity share and board of directors' representation. It is widely assumed that partners' equity share determines their board representation. While this correlation is high, there are JVs that deviate from this pattern. Drawing from transaction cost economics and resource dependency theories and by using a unique database of 259 bilateral equity joint venture (JV) contracts, I examine the factors that determine which JVs deviate from this correlation. I find that international JVs tend to deviate more, while JVs with a deadlock clause, with a large board, and JVs hosted in a stable country deviate less.

6.1. Introduction

Joint ventures are a hybrid organizational form in which two or more partner firms create a separate shared legal entity in order to pool resources, share risks and split profits (Kogut, 1988). This entity is governed by mechanisms such as level of ownership (equity distribution), legal contracts, voting rights, management committees (i.e. board of directors), among others (D. Chen et al., 2009; Contractor & Reuer, 2014; Madhok, 2006). The degree of ownership has been commonly regarded as a key governance mechanism that defines power and control in the new venture (Mjoen & Tallman, 1997). However, boards of directors and the share of each partner in comprising this board also have an important weight in the governance of the relationship. Partners' levels of

representation on the JV board has not attracted much attention; first, because of the unavailability of data; and second, because there is a high correlation between equity share and board representation and therefore, equity share has been used as a proxy for overall JV control (Cuypers et al., 2017). Still, in some cases, there is little or no correlation between equity share and board share. In this paper, I explore what determines whether there is a high or low deviation from this relationship. I call this deviation *JV board representation deviation* and measure it as the difference between any of the partners' percentage of equity share and its board of directors representation percentage share.

There is little research on the relationship between equity share and board of directors' representation in JVs. The only study that directly addresses this gap is Cuypers et al., (2017), which identifies moderators that affect foreign partner's board representation in IJVs. Through a survey in Chinese IJVs, the authors find that foreign partners representation is related to their internal and external roles and is moderated by environmental volatility, competitive overlap, market growth and board effectiveness. I build on this study and add to this conversation by examining a broader set of joint ventures and their contracts, including domestic and international. Moreover, I also create a different dependent variable called *board deviation*, in order to further understand what affects the correlation between equity share and board representation.

This study makes a series of contributions. First, it adds to the alliance and board of directors' literature by linking these two literature streams. Second, it offers a more finely grained analysis of governance in JVs beyond equity share and enhances our understanding of the different decisions of control within such an entity. Third, it helps

managers understand the factors that determine the interplay between equity share and board representation in the control of the JV and the importance of negotiations during the design of such governance mechanisms. Finally, this is the first study directly examining the deviants from the norm as a dependent variable and also the first using complete JV contracts.

The sections that follow this introduction are a literature review on JV equity share and boards of directors, followed by theory and hypotheses development. The data, methods and results are described and discussed. The study ends with implications for managers, limitations and directions for future research.

6.2. Literature review, theoretical background and hypotheses

The main characteristic of a joint venture is shared ownership which increases governance complexity, especially in the case of control (Kamminga & Van der Meer-Kooistra, 2007). Partner firms can govern the JV through mechanisms such as the legal contract, equity share, the board of directors, managerial positions, veto powers, etc. (Chalos & O'Connor, 2004; D. Chen et al., 2009; Kumar & Seth, 1998).

Governance mechanisms do not work in isolation; there is variation in control structures because governance mechanisms interact with each other. This variation is due to the trade-off between the partners' need to control and the autonomy of the venture (Harrigan, 1988; Kumar & Seth, 1998). Kumar and Seth (1998) use structural contingency theory, resource dependence theory and agency theory to explain how JV control structures interact and complement each other. They find that strategic interdependence and environmental uncertainty affect the design of control mechanisms.

For instance, they find that environmental uncertainty has a direct effect on the external role of boards of directors.

Of all JV governance mechanisms, equity share is widely-used in the literature, and while there is evidence that equity share (ownership) is effective in the governance of alliances (R. J. David & Han, 2004), it does not always equal control (Madhok, 2006). On the other hand, the less explored board of directors is another important governance mechanism of a JV which is directly associated with control. As in public firms, JV boards of directors have a monitoring and advising role, but unlike regular boards, they have a fiduciary role towards the venture (Shishido, 1987), and also have more decision power and direct responsibilities while maintaining an equilibrium between the interests of the parties and that of the JV (Harrigan, 1988). However, the JV board could also be a space in which the chances of opportunism and misappropriation increase, since board members have access to privileged information and may be tempted to share it with the partner company they represent (Reuer et al., 2011; Smith, 2005). Therefore, the number of seats assigned to each partner of the JV is a critical issue.

While in many cases equity share (ownership) is correlated with JV board representation (control), they are not always equal. For example, Cuypers et al. (2017), report a 0.76 correlation between Sino-foreign JV equity share and foreign partner board representation. While this is high, it leaves room for deviations that are important to examine in order to understand how certain firms balance ownership and control by dissociating their board representation share from their equity share; and also to understand under which conditions board seats are assigned differently than by following

the equity formula. In this chapter, I explore what factors increase or decrease this deviation.

Deadlock clauses

A joint venture enters a deadlock situation when the parties disagree consistently on issues that require unanimous or majority approval (Buchel, 2003). Deadlock is costly, because it delays decision making and could eventually lead to a non-breach type of termination of the JV. This means a party could purposely cause the termination of the alliance by creating a deadlock situation without directly breaching the contract (Landeo & Spier, 2014; Smith, 2005). While voting rights and other dispute resolution mechanisms help solve deadlock, they do not completely do so, therefore a deadlock clause in the contract prevents it by providing solutions such as temporarily delegating decision power on the matter or calling additional meetings (Glover & Wasserman, 2003). Even if the negotiation and design of deadlock clauses imply additional costs, these costs may be lower than the complications of solving the issue through other mechanisms (Landeo & Spier, 2014).

Joint ventures that include a deadlock clause, signal a relationship in which the parties anticipate possible decision-making conflicts and opportunism at the board level. In this sense, from a TCE perspective, in order to have tighter control of opportunistic behaviors, the JV would also likely have a closer alignment between equity share -which is related to partner firms' broad investment decisions-, and board representation -which is more focused on day to day operations-. Therefore, I hypothesize that:

H1: The deviation between partners' equity share and board representation is lower for joint ventures that contain contractual deadlock clauses than for those that do not

Board size

The corporate governance literature on the relationship between number of board members and performance in stand-alone firms is vast (D. R. Dalton, Daily, Johnson, & Ellstrand, 1999). However, there is still no consensus. Studies on the positive effect of larger boards on firm performance, draw on resource dependency theory to explain that larger boards are better able to secure external resources (Goodstein, Gautam, & Boeker, 1994; Pfeffer & Salancik, 2003). On the other hand, scholars such as Yermack (1996), argue that smaller boards are actually more beneficial to firm performance since bigger boards are too difficult to manage. Finally, other scholars argue that these results are inconsistent because board size affects each firm differently (Mak & Li, 2001), thus generalizing the results is inappropriate.

In the case of JV boards, there are no studies on the effect of board size on joint venture performance. However, for this study I will explore the effect of board size on the relationship between equity share and board representation. Building on the findings from the corporate governance and finance literatures, I draw on contingency theory, which establishes that a larger board is useful when the access to external linkages and resources are necessary (Pfeffer & Salancik, 2003). Additionally, as boards increase their size, their collective knowledge increases and therefore so do their monitoring capabilities (Pfeffer & Salancik, 2003). On the other hand, JV board members have

access to confidential information and are tempted to share this information with the partner firm they represent. In this sense, from a TCE perspective, the larger the number of members of a JV board, the higher the risks of misappropriation and opportunism, and therefore the need for additional controls is necessary, such as a closer alignment between the capital contributions of the JV and the board representation. Therefore, I hypothesize that:

*H2: The higher the number of members in a joint venture board,
the lower the deviation between partners' equity share and board
representation*

Type of Joint Venture

From a TCE lens, international joint ventures involve higher appropriation hazards, therefore tighter monitoring governance mechanisms are needed such as a complex contract and the establishment of a board of directors. This suggests, that control through a closer relationship between equity share and board representation is also necessary. However, international joint ventures are a common foreign market entry mode for firms because a foreign partner provides local knowledge, connections and access to resources that would be difficult to a foreign firm to obtain (Kogut & Singh, 1988). In line with resource dependency theory (Pfeffer & Salancik, 2003), the foreign partner, through its board representation becomes an important vehicle for the venture's success since foreign board representation has access local resources, including connections. Therefore,

because of the higher need in IJVs to provide to the foreign partner more importance, I hypothesize that:

H3: The deviation between partners' equity share and board representation is higher for international joint ventures than for domestic ones

Host Country – Rule of Law

Harrigan (1985) notes that governance in JVs is an interplay between partner's need to control and the venture's autonomy. According to resource dependency theory, in the case of environmental uncertainty represented as weak rule of law, the need for autonomy rises, and the board is usually the mechanism used to deal with such uncertainty (Pfeffer & Salancik, 2003). Therefore, in case of high environmental uncertainty the board is likely to be given autonomy and flexibility in order to adapt and respond to changes in the environment (Kumar & Seth, 1998) and its representation is less likely to reflect the equity share.

The opposite can also occur. For example, in the joint venture agreement between the Canadian firms *Amarc Resources* and *Rockwell Ventures*, the contract specifies:

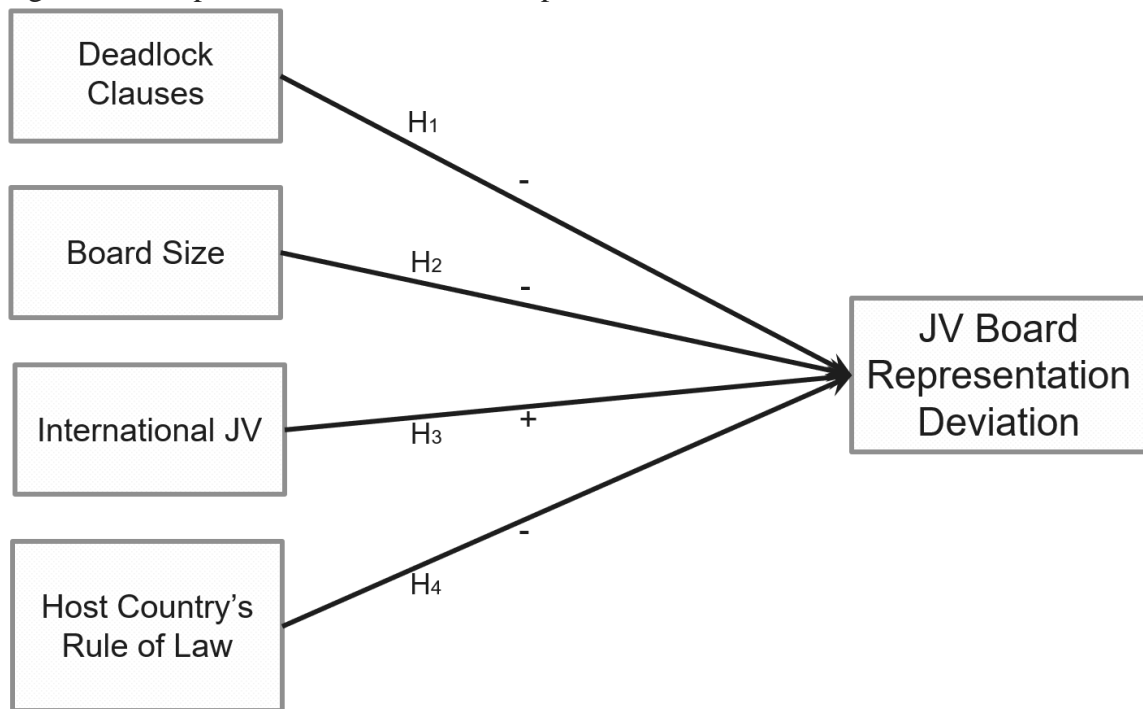
“(c) the operations of the Joint Venture will be overseen by a management committee, with each party to have voting rights on such committee equal to their Interest in the Joint Venture”
(*Amarc Resources Ltd.*, 2004)

In this case, partner firms use the formula of equity share or interest in order to compose the number of board (or committee) members and their voting rights. From a TCE perspective, if there is less environmental uncertainty, risks of exchange hazards are

less, boards require less autonomy and firms may tend to avoid the costs of additional board design or additional contractual clauses, therefore:

H4: The deviation between partners' equity share and board representation is lower for joint ventures hosted in countries with a higher rule of law index than for the ones hosted in countries with a lower rule of law index.

Figure 6.1. Proposed Model – JV board representation deviation



6.3. Methods

Sample collection and description

There is one study on the relationship between international joint venture equity share and board representation with data collected through a survey in Chinese IJVs (Cuypers et al., 2017). I build on that study and use domestic and international joint venture contracts filed by US publicly traded companies to the Securities Exchange Commission

(SEC). I used an automated algorithm to obtain 626 JV contracts from 2000 to 2016 from the EDGAR database of the SEC.

For this study, I leave out multiparty joint ventures in order to study the relationship between equity share and board participation in bilateral JVs, that narrows down the sample to 519 agreements. Of these contracts 348 had a management committee or board of directors. The final sample consists of 259 contracts that had information on equity share and each parties number of members in the board.

Measures

Dependent Variable: I created a dependent variable called *JV board representation deviation*. This variable is the absolute value of difference between any of the partners' representation in the board of directors (measured as the number of members of the partner divided by the total members of the board) and its equity distribution. The value is zero when the correlation between equity share and board representation is perfect (1.0) since there is no difference between the percentage of board representation and equity share (for example 40% equity share and 40% share on the board). On the other hand, the value is 100 when there is no correlation between equity share and board of director's representation. Therefore, the higher the deviation between equity share and board representation, the lower the correlation between them and vice versa. In this sense, I can directly test the effects of the independent variables on this correlation.

Independent Variables:

Deadlock: variable based on the existence of a deadlock clause in the joint venture contract. It's a binary dummy variable marked one when there is a deadlock clause and zero otherwise.

Board Size: is the sum of each partner's number of members on the board of directors of the JV.

Domestic or international joint venture: a binary dummy variable coded 0 for domestic joint ventures and 1 for international joint ventures.

Host country's Rule of Law: relates to how rules are followed, contracts enforced, property rights protected, quality of courts and police and likelihood of violence. I use the World Banks' Databank to obtain the rule of law index for each of the host countries and for the year the contract was signed. The index goes from -2.5 to 2.5, the higher the number the better the rule of law.

Control Variables:

Year dummies: A year dummy to control for time fixed effects.

Number of parties: A count variable with the number of firms in the joint venture.

Joint Venture Activity (high-tech): A high tech joint venture implies the sharing of important resources such as tacit knowledge, and therefore control mechanisms like the board play an important role in monitoring and also facilitating exchange (Richards & Yang, 2007). Additionally, in line with resource dependency theory, the board plays a critical role in accessing external resources which are especially needed in the case of high-tech (Pfeffer & Salancik, 2003; Richards & Yang, 2007). Therefore, I control for high-tech joint ventures with a binary dummy variable that takes value of one when the JV is high-tech or zero otherwise.

Previous JV experience: Based on Dupland and Lumineau (2015), I create a binary dummy variable that takes value zero if partner firms had no previous joint venture with each other and the value of one if otherwise.

Firm size difference: I control for difference in size between partner firms. Calculated as the absolute value of the difference in employee size between the partners.

Industry: I use six industry dummies to control for different industries.

Estimation

I use a generalized linear model (GLM) to test the hypotheses with the following model:

$$\begin{aligned} \text{JV Board Representation Deviation} = & \beta_0 + \beta_1 \text{ Deadlock} + \beta_2 \text{ Board Size} + \\ & \beta_3 \text{ International JV} + \beta_4 \text{ Host Country's Rule of Law} + \beta_4 \text{ High-Tech JV} + \\ & \beta_5 \text{ Year} + \sum_{i=1}^5 \beta_{6,i} \text{Industry}_i + \beta_7 \text{ Firm size differences} + \beta_8 \text{ Previous JV} \\ & \text{experience} + \varepsilon \end{aligned}$$

6.4. Results

Table 6.1 reports the correlation matrix including descriptive statistics (means and standard deviations). I tested for multicollinearity by calculating the variance inflation factors (VIFs). All VIFs were below the recommended 10 ceiling (Chatterjee & Price, 1991), with the highest at 1.41 and an average of 1.16.

Table 6.1. Correlation matrix and descriptive statistics

Variable	Obs.	Mean	s.d.	1	2	3	4	5	6	7	8
1 Board Representation Deviation	289	7.68	10.48	1.00							
2 Deadlock	626	0.22	0.41	-0.22	1.00						
3 Board Size	296	4.30	1.76	-0.11	0.06	1.00					
4 International JV	626	0.52	0.50	0.12	0.15	0.27	1.00				
5 Host Country Rule of Law	604	4.56	0.89	-0.22	0.16	-0.41	-0.27	1.00			
6 Size Difference	626	1.79	1.80	-0.06	0.11	0.10	0.01	-0.06	1.00		
7 High-Tech JV	626	0.33	0.47	0.00	0.13	0.27	0.26	-0.33	0.01	1.00	
8 Previous JV between the partners	626	0.04	0.20	-0.12	0.14	0.08	0.07	0.07	0.02	0.15	1.00

Bold numbers p<.05.

Regression models are reported in table 6.2. I use the control variables in model one and for the next models I add a new independent variable according to the hypotheses. Model six shows the final regression with all independent variables and controls.

The first hypothesis suggests that the deviation between equity share and board representation is lower for joint ventures that include a contractual deadlock provision.

This is supported in models two and six ($p < 0.01$). This means that the presence of this contractual clause is related to a higher correlation between equity share and board representation.

The second hypothesis, states that the higher the number of board members, the lower the deviation between JV partners' equity share and board representation share. This is supported in models three and six ($p < 0.10$ and $p < 0.001$) with a negative relationship on *JV board representation deviation*. This also means that the correlation between equity share and board of directors' representation is higher in JVs with higher number of board members.

Hypothesis three is supported in models four and six ($p < 0.01$). This hypothesis states that the deviation between equity share and board of directors' representation is higher for international joint ventures than domestic joint ventures. Results show a significant positive relationship between international joint ventures and board of directors' deviation, hence less correlation between partners' equity share and board of directors' representation in IJVs. This is confirmed by a correlation analysis from the sample in which the correlation between equity share and board of directors in domestic JVs is 0.72 while in IJVs is 0.56.

Hypothesis four is also supported. It posits that the deviation between partners' equity share and board representation is lower for JVs hosted in countries with a higher rule of law index than for the ones hosted in countries with a lower rule of law index. This is confirmed in models five and six ($p < 0.001$ and $p < 0.01$). Results show a negative relationship between a higher rule of law index and board of directors' deviation, therefore higher correlation between equity share and board of directors' representation.

Table 6.2. Regression results – Dependent Variable: JV Board representation deviation.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Year	Included	Included	Included	Included	Included	Included
Industry	Included	Included	Included	Included	Included	Included
High-tech JV	2.2 (1.69)	2.39 (1.67)	2.99+ (1.76)	1.53 (1.69)	0.75 (1.71)	1.69 (1.73)
SizeDifAll	-0.18 (0.33)	-0.11 (0.33)	-0.19 (0.34)	-0.17 (0.33)	-0.24 (0.33)	-0.13 (0.33)
Previous JV between the parties	-4.85+ (2.89)	-4.17 (2.86)	-4.85+ (2.93)	-5.22+ (2.86)	-4.11 (2.96)	-3.33 (2.93)
Deadlock (H1)		-4.08** (1.40)				-4.09** (1.45)
Board Size (H2)			-0.73+ (0.41)			-1.40*** (0.42)
JV Type (Domestic vs International) (H3)				3.58** (1.33)		3.79** (1.41)
Host Country Rule of Law (H4)					-2.84*** (0.71)	-2.48** (0.80)
Constant	1.45 (13.25)	2.85 (13.07)	6.18 (13.44)	(3.19) (13.20)	16.85 (13.55)	18.57 (13.82)
LogLikelihood	-1,073	-1,068	-1,010	-1,069	-1,041	-972
Chi-Square	30	40	34	38	46	68
AIC	2,201	2,194	2,077	2,195	2139	2009
NumberofObservations	289	289	272	289	282	266

+ p<0.10, * p<0.05, ** p<0.01, ***p<0.001

Discussion

When designing a JV agreement, a critical managerial choice is whether to align the ownership percentage of the venture with the representation percentage on the board of directors, or to change the balance of the equation of ownership, control and decision making. Changing this equilibrium is costly because a new formula has to be devised and specified in the contract, but may reap benefits, therefore a careful analysis of the factors that may help chose the right deviation from equity share is important. A tight relationship between ownership (equity share) and control (board representation) helps mitigate opportunistic behavior but may reduce the venture's flexibility and autonomy. In this study, I find that JVs with a contractual deadlock clause, larger boards and JVs hosted in stable countries are more aligned in terms of equity share and party representation on the board, while in IJVs the deviation is higher, meaning the correlation

between equity share and board participation is lower. The case of IJVs is interesting because they have higher risks of opportunism and a TCE lens would recommend to keep tighter control, however resource dependency theory suggests that some partners may have access to specific sought out resources. Therefore, IJVs assign more representation to the foreign partner because they have access to contacts and resources from their host country that are strategic for the JV (Cuypers et al., 2017).

This study contributes to the alliance governance literature by increasing our understanding on the factors that affect the interplay between partner's contributions measured as equity share and board of directors' representation.

Limitations and future research

The results presented in this study are restricted by the sample and type of alliance (JVs). This sample includes all bilateral joint ventures filed by US publicly traded companies to the SEC between 2000 and 2016.

This study finds a higher number of JV board members has a positive impact on the correlation between equity share and board participation. It would be interesting to study the implications of JV board size on JV performance in order to contribute to the unsolved dilemma of board size and firm performance in the governance and finance literatures. Additionally, it would be interesting to study what determines JV board size.

This study also finds that IJVs deviate more from the equity share-board representation relationship, which is in line with previous studies. However, I find that the correlation between IJV ownership and board representation is 0.59, while Cuypers et al. (2017) report a 0.76 in Sino-foreign IJVs. Perhaps in China, foreign firms want to keep the ownership control formula tighter than in other regions in order to mitigate

opportunism and loss of intellectual property. Therefore, it would be interesting to further explore host country differences in IJV board representation and structure.

Finally, it seems that the important contractual provisions on board representation and deadlock tend to be taken more lightly in some contracts than in others. This could be related to the costs of negotiation, board and contractual design. This would be an interesting avenue for future research since it is important for managers to understand the importance negotiating the board representation clause, specifically to understand in which cases it makes sense to equate board representation with share representation.

6.5. Conclusion

Equity share is not the only determinant of control and decision power in a JV; there are other governance mechanisms that interact within this form of hybrid organizational structure. We know that boards play an important governance role within JVs but we know little about its relationship with equity share. I find that there is a relationship between equity share and board of directors' representation which reflects the stakes companies have on the venture, however, there are partnerships that deviate from this correlation. In this study, I find that IJVs tend to have a higher deviation while board size and host country's rule of law are negatively related to board deviation along with JVs that include a deadlock clause. These results give insights to researchers and managers about the balance of governance in JVs since control is not always determined by equity share.

7. DISSERTATION CONCLUSIONS

“So, what’s your new knowledge?”

Anonymous high school student.

7.1. Summary of dissertation and findings

Alliances comprise a series of complex decisions. First, decisions must be made whether to internalize, acquire or ally. After deciding to ally, decisions about partner choice and type of alliance come next. After an alliance choice has been made, the next steps involve decisions on how to manage the alliance, which include alliance design and governance mechanisms (Reuer et al., 2016). This dissertation concerns this last set of decisions, specifically regarding joint venture decisions. I contributed to our knowledge on joint venture governance mechanisms and design by addressing the following questions: How are joint ventures governed? Which governance mechanisms are involved in joint ventures? What determines the existence of some of these governance mechanisms? How do these governance mechanisms interact? Do they supplement or complement each other?

The success of a joint venture lies greatly on how the partnership is managed or governed. Governance mechanisms such as the contract, equity ownership, and the board of directors help monitor the parties and mitigate opportunism while increasing coordination. The contract is the major ex-ante governance mechanism in which the parties’ duties and responsibilities are described, and where other governance mechanisms are defined and established such as the equity share and the board of directors. However, specific or complex contracts are costly and only necessary when the returns surpass the costs (Argyres et al., 2007; Reuer & Ariño, 2007).

In this dissertation, I use a unique database of 626 joint venture contracts that helps expand our understanding of these governance mechanisms and how they interact. Additionally, I provide scholars and practitioners with a guide to understanding how companies file their contracts to the US securities exchange commission and how to access them, either to use them as benchmarks in strategic decisions or to help advance academic research.

The first chapter introduces the dissertation and its motivation. It also describes the anatomy of a joint venture contract and singles out the most important and widely used clauses. I find that a joint venture agreement should at least contain 48 clauses which are described in table 1.1.

The second chapter is an account of the research on alliance and joint venture governance including governance mode choice, type of alliance choice, alliance governance structure and design choice, and finally, joint venture structure and governance mechanisms such as the contract, equity share and board of directors. This chapter also highlights the need for a systematic review of the hundreds of published alliance governance studies. The model proposed by Gaur and Kumar (2017) for systematic reviews seems ideal to get the picture of such a great amount of work on the topic.

In the third chapter, using the collection process of my sample of 626 joint venture contracts from the SEC's EDGAR system as an example, I explain the *raison d'être* of the securities exchange commission, how companies file their information and how anyone can access it. I provide detailed guidelines on how to navigate the EDGAR system, how to look for financial reports and how to find the contracts which are attached

to those reports. Additionally, I provide examples of two programs written in different programming languages that can be customized to automatically search for anything filed with the SEC and stored in their EDGAR system. Finally, I describe the sample and make the first dissection of the contracts and display their anatomy. I find that the most widely used clauses are those that define the type of joint venture, its scope, the laws that govern the contract and the description and roles of the parties (refer to figure 3.3 for a complete summary).

The fourth chapter is the first empirical study of this dissertation in which I mine the JV contracts, create a unique joint venture contract complexity index and explore institutional determinants of this complexity. Drawing from transaction cost and institutional theories, results show that JV contractual complexity is greater for international JVs than for domestic ones. Additionally, contractual complexity is also related to institutional variables of the country in which the contract is enforced. Contract complexity appears to be higher in countries with a civil law system as opposed to common law, in countries with inefficient court systems, and where corruption levels are low.

The second empirical study (Chapter 5) addresses another crucial governance mechanism in JVs: The board of directors. A board is often used to help partner firms monitor and manage the JV, align the interests of the partners and address possible conflicts (Contractor & Reuer, 2014; Cuypers et al., 2017). However, little is known about what determines whether a board is actually created. By analyzing the contracts and by drawing from agency theory, results show that JV boards complement contractual governance and are more likely to be created for JVs with a higher number of contractual

safeguards, larger JVs, international JVs, and finally for JVs hosted in countries with lower quality of intellectual property rights protection.

Finally, in the third empirical study (Chapter 6), I explore the relationship between equity share and board participation, two important JV governance mechanisms that are presumed to be correlated. Results confirm that this correlation is indeed high (0.58). Drawing from resource dependency theory, I examine which factors determine whether joint ventures deviate in their percentage of board representation share in relation to their equity share. I find that international JVs tend to deviate more, while JVs with a large board, JVs hosted in a stable country, and JVs which include a contractual deadlock clause deviate less.

7.2. Contributions to theory

The overarching theory of the dissertation is transaction cost theory, with the contract of the alliance as the compass guiding the researcher to find out more about how joint ventures are governed from the outset. I add to our understanding of alliance governance by not only using transaction cost theory but also using insights from institutional, agency and resource dependence theories to understand governance decisions that are not fully explained when only analyzed through a transaction cost perspective. For example, I contribute to agency theory by providing some empirical evidence of the complementary--instead of substitutive--role of the JV board of directors versus the contract.

Additionally, in line with TCE, results show that IJVs implement governance mechanisms to mitigate appropriation hazards in terms of a more complex contract and establishing a board of directors. However, interestingly enough, they do not possess a tighter control through the alignment of their equity share and their board representation.

In this case, resource dependence theory explains the higher deviation between equity share and board representation because of the need of higher board representation from the foreign partner in order to access local resources (Cuypers et al., 2017).

I also provide additional evidence and understanding of the balance of power and control in JVs. The broadly used equity share measure of control--whether shared or dominant--has been criticized (Madhok, 2006) but is still widely used. Choi and Beamish (2004) created an additional measure called split control, however the need for fine grained data has made it difficult for researchers to operationalize this measure (Merchant, 2014). Chen, Park and Newburry (2009) extended the discussion by applying three types of control--output, process and social--from organizational theory. I provide some insights on JV governance and control by showing how equity share is not always mirrored in board representation, as well as how some joint ventures basically give full control to one of the parties by choosing not to establish a board of directors. In this sense, while many JVs do reflect the equity share formula in their board participation, it is important to know in which instances this correlation is likely to deviate.

Finally, this dissertation also builds interdisciplinary bridges between the International Business-Strategy field and other disciplines such as accounting, finance and law. Researchers in all of these fields have worked extensively on joint ventures but cross-pollination could be greatly improved.

7.3. Contributions to practice

This dissertation provides a clear guide for understanding the role of the Securities Exchange Commission, how companies file information with the SEC and how the EDGAR system and database works. Additionally, I explain how to access company data

and provide an example of how to obtain joint venture contracts either manually or via an automated program for which the programming codes are provided. Having access to information that has been mostly used by investors can help management teams benchmark their own contracts and learn from them, in addition to providing current information that can help craft better corporate strategies.

From the empirical studies in this dissertation, practitioners can also develop a clearer picture of the importance and interaction of governance mechanisms such as the contract, the board and equity ownership. For example, understanding how country level factors that are not under the firm's control have an effect on contract complexity raises awareness of the importance of the choice of law clause and its negotiation. Also, managers could have a broader picture of when it is not necessary to record every possible contingency in a contract, and therefore reduce the costs of contracting. Additionally, learning about the complementary role of a board of directors could help balance the costs of expensive contract negotiation and design.

While research in the legal literature has paid great attention to the choice of law provisions and their negotiation, the strategy literature has overlooked these decisions. In this dissertation, managers can see that the choice of law clause is the third most widely used clause in a JV contract and that its negotiation has great implications on the design and complexity of the rest of the contract and other governance mechanisms. In this sense, this dissertation makes a step toward improving negotiators' and practitioners' abilities for crafting agreements by creating awareness and showing the relationship between the choice of law and JV governance.

For policy makers it is useful to see how institutions shaped by regulations affect business transactions, specifically joint ventures, which are good sources of foreign direct investment.

7.4. Limitations and directions for future research

This dissertation has its limitations. While selection bias was addressed, the results are limited to the 626 joint venture contracts sample collected from the SEC. Also, even though the contracts are a rich source of information, the data is cross-sectional by nature and does not account for changes and adaptations of the JV. In this sense, contract data could be complemented with interviews and surveys that could shed light on more details of joint venture design mechanisms and their negotiation.

The *choice of law* or *applicable law* provision in contracts determines all the institutional factors that affect not only the complexity of the contract but its enforcement. Therefore, I identify a need and opportunity to connect the choice of law literature from legal studies (Sanga, 2014) with the strategy literature and to revisit the alliance negotiation literature (Contractor, 1985; Contractor & Ra, 2000; Hooton, 1993). By establishing this link, strategy and IB scholars could help deepen our understanding of the strategic implications of the choice of law clause of the joint venture contract, how it is negotiated and which factors influence its choice.

Finally, alliance contracts are rich sources of data which can also help understand other strategic considerations. For example, where do companies draw the line between cooperation and competition in JVs? The answer seems to lie in the scope of the joint venture clause and the covenants not to compete. Further analyses of these clauses would provide interesting insights in the strategy literature on competition and cooperation.

8. REFERENCES

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9. APPENDICES

9.1. Python 2.7 Code (Scrapy package) for extracting joint venture contracts from the SEC

```
# -*- coding: utf-8 -*-
from scrapy.spiders import Spider
from scrapy.selector import Selector
from getedgar.items import GetedgarItem
from scrapy.spiders import CrawlSpider, Rule
from subprocess import call
from Read import *
import scrapy
import urllib
import re
#import pdfkit
#from pdfkit import Configuration

class GetEdgarSpider(CrawlSpider):
    name = "search"
    allowed_domains = ["sec.gov"]
    cont = 1
    numero = 0
    #def __init__(self,sic=None, *args, **kwargs):
    #    super(GetEdgarSpider, self).__init__(*args, **kwargs)
    #keydocs = conf.getKeydocs()
    #endFile = conf.getEnd()
    #keywords = conf.getKeyWords()
    #keywords_false = conf.getFalseWord()
    SICs = open('SICs.txt','r')
    SICs = SICs.readlines()
    urls = []
    option = 0 # change to 1 if a specific firm is needed
    if option == 0: #Search by SICs
        for sic in SICs:
            urls.append('https://www.sec.gov/cgi-bin/browse-
edgar?action=getcompany&SIC='+sic+'&owner=include&match=&start=00&count=100&hidefilings
=0')
        start_urls = urls
    else: #Search for a specific firm
        start_urls = option

    #=====lower case=====
    # MODIFY KEY DOCS AND FALSE WORDS TO PERSONALIZE THE SEARCH
    #=====

    keydocs = ['10-K','10-Q','8-K','S-8','20-F','F-10','F-8','6-K','S-1/A','S-
8/A','10KSB','10-12B','10-12B/A','10-12G','10-D','10-D/A','10-
Q/A','10KSB40','10SB12B','10SB12G/A','11-K/A','18-K','18-K/A','10-
KT','20F/A','20FR12B','20FR12B/A','20FR12G','20FR12G/A','F-4']
    keywords = ["joint venture agreement",
                "joint venture contract",
                "joint venture framework agreement",
                "jv agreement",
                "jv contract"]
    keywords_false = ['press release']
    endFile = 100 #DEPTH OF SEARCH
```

```

#=====

def parse(self, response):
    try:
        selector = Selector(response)
        companys = selector.xpath('//table[@class="tableFile2"]//tr')
        a = companys[0].xpath('th[1]//text()').extract()[0]
        can = 100
        if (str(a) == 'CIK'):
            for i in range(1,len(companys)):
                item = GetedgarItem()
                tr = companys[i]
                self.number = self.number + 1
                item['CIK'] = tr.xpath('td[1]/a/text()').extract()[0]
                item['SIC'] = response.url[63:67]
                item['Company'] = tr.xpath('td[2]/text()').extract()[0]
                item['UrlAll'] = "www.sec.gov" +
tr.xpath('td[1]/a/@href').extract()[0]
                item['DocType'] = {}
                item['UrlDoc_array'] = {}
                item['Finish'] = 0
                for j in range(0,len(self.keydocs)):
                    link = "http://www.sec.gov/cgi-bin/browse-
edgar?action=getcompany&CIK="+item['CIK']\
+ "&type="+str(self.keydocs[j])+"&dateb=&owner=exclude&count="+str(can)
                    item['UrlDoc_array'][j] = {'Link':link}
                    request = scrapy.Request(link,callback=self.parseGetFillings)
                    request.meta['item'] = item
                    request.meta['i'] = j
                    yield request
                #Reload page with more companies
            try:
                next_companys = selector.xpath('//input[@value="Next
100"]/@onclick').extract()
                if next_companys:
                    new_url = 'https://www.sec.gov'+str(next_companys[0])[17:-
1] #Obtains new url
                    new_request = scrapy.Request(new_url,callback=self.parse)
                    yield new_request
                else:
                    pass
            except:
                pass
        else:
            if(str(a) == 'Filings'):
                item = GetedgarItem()
                item['CIK'] =
response.xpath('//input[@name="CIK"]/@value').extract()[0]
                item['SIC'] =
response.xpath('//p[@class="identInfo"]/a/text()').extract()[0]
                item['Company'] =
response.xpath('//span[@class="companyName"]//text()').extract()[0]
                item['DocType'] = {}
                item['UrlDoc_array'] = {}
                item['Finish'] = 0
                for j in range(0,len(self.keydocs)):
                    link = "http://www.sec.gov/cgi-bin/browse-
edgar?action=getcompany&CIK="+item['CIK']\
+ "&type="+str(self.keydocs[j])+"&dateb=&owner=exclude&count="+str(can)

```

```

        item['UrlDoc_array'][j] = {'Link':link}
        request = scrapy.Request(link,callback=self.parseGetFillings)
        request.meta['item'] = item
        request.meta['i'] = j
        yield request
    except IOError as e:
        print "I/O error({0}): {1}".format(e.errno, e.strerror)
        print('=====Company not
found=====')

#=====
# Method for obtaining company data with KeyDocs filter
# Data: Filling, Date, Url where the documents are
#=====

def parseGetFillings(self,response):
    item = response.meta['item']
    sel = Selector(response)
    next_companys = sel.xpath('//input[@value="Next 100"]/@onclick').extract()
    if next_companys:
        fillings = sel.xpath('//table[@class="tableFile2"]//tr')
        if len(fillings)>1:
            for j in range(1,len(fillings)):
                tr = fillings[j]
                fill = tr.xpath('td[1]/text()').extract()[0]
                date = tr.xpath('td[4]/text()').extract()[0]
                link = "https://www.sec.gov"+tr.xpath('td[2]/a/@href').extract()[0]
                request = scrapy.Request(link, callback=self.parseGetDetailsDocs)
                request.meta['item'] = item
                request.meta['i'] = j
                request.meta['Date_doc'] = date
                yield request
            else:
                print "-----No data-----"
                new_url = 'https://www.sec.gov'+str(next_companys[0])[17:-1] #Obtains new
URL
                new_request = scrapy.Request(new_url,callback=self.parseGetFillings)
                new_request.meta['item'] = item
                yield new_request
        else:
            fillings = sel.xpath('//table[@class="tableFile2"]//tr')
            if len(fillings)>1:
                for j in range(1,len(fillings)):
                    tr = fillings[j]
                    fill = tr.xpath('td[1]/text()').extract()[0]
                    date = tr.xpath('td[4]/text()').extract()[0]
                    link = "https://www.sec.gov"+tr.xpath('td[2]/a/@href').extract()[0]
                    request = scrapy.Request(link, callback=self.parseGetDetailsDocs)
                    request.meta['item'] = item
                    request.meta['i'] = j
                    request.meta['Date_doc'] = date
                    yield request
                else:
                    print "-----No data-----"
            yield item

def parseGetDetailsDocs(self,response):
    item = response.meta['item']
    i = response.meta['i']
    date_doc = response.meta['Date_doc']
    sel = Selector(response)

```

```

dates = sel.xpath('//table[@summary="Document Format Files"]//tr')
find = False
if len(dates) > 1:
    for k in range(1,len(dates)):
        try:
            nameDoc = dates[k].xpath('td[3]/a/text()').extract()[0]
            descriptionDoc = dates[k].xpath('td[2]/text()').extract()[0]
        except:
            nameDoc = "nullo.gif"
            descriptionDoc = "nullo"
            extencions = ['htm','html','txt']
            if nameDoc[-3:] in extencions:
                urlDoc =
"https://www.sec.gov"+dates[k].xpath('td[3]/a/@href').extract()[0]
                arr_details =
[item['Company'],item['CIK'],nameDoc,descriptionDoc,urlDoc,item['SIC'],response.url,date_doc]

                if not self.falsePositive(descriptionDoc.lower()):
                    if self.searchWords(descriptionDoc.lower()):
                        item['Doc'] = [nameDoc,urlDoc,descriptionDoc,response.url]
                        self.toPDF(urlDoc,nameDoc[:-
4],descriptionDoc,item['Company'],item['CIK'],
                            item['SIC'],response.url,date_doc)
                    else:
                        request =
scrapy.Request(arr_details[4],callback=self.searchInDoc)
                        request.meta['Dates'] = arr_details
                        yield request
                else:
                    pass
            yield item

def searchInDoc(self,response):
    sel = Selector(response)
    date = response.meta['Dates']
    #text = ''.join(sel.xpath('//font/text()').extract()[0:15])
    text = ''.join(sel.xpath('//text()').extract()[0:int(self.endFile)])
    text = text.lower()
    for key in self.keywords:
        if key in text:
            self.toPDF(response.url,date[2][:-
4],date[3],date[0],date[1],date[5],date[6],date[7])
            return True

#=====
# Method to search for keywords on the titles of the tables
#=====
def searchWords(self,line):
    for i in self.keywords:
        if i in line:
            return True
    return False

def falsePositive(self,line):
    for i in self.keywords_false:
        if i in line:
            return True
    return False

```


9.2. Java 1.8 Code (Spring Boot 4.2.3.) for extracting joint venture contracts from the SEC

```

import java.io.FileWriter;
import java.util.concurrent.ExecutorService;
import java.util.concurrent.Executors;
import java.util.concurrent.TimeUnit;

import org.w3c.dom.Document;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;

public class CikThread implements Runnable {

    private FileWriter controlFileWriter;
    private FileWriter fileWriter;
    private Scraper scraper = new Scraper();
    private Document coco1;
    private int j;
    private Node cikNode;
    private String[] codes;
    private Node sicNode;
    private String fileToGenerate;

    public void setSicNode(Node sicNode) {
        this.sicNode = sicNode;
    }

    public void setFileToGenerate(String fileToGenerate) {
        this.fileToGenerate = fileToGenerate;
    }

    public void setCodes(String[] codes) {
        this.codes = codes;
    }

    public void setDocument(Document document) {
        this.coco1 = document;
    }

    public void setJ(int j) {
        this.j = j;
    }

    public void setCikNode(Node cikNode) {
        this.cikNode = cikNode;
    }

    public void setControlFileWriter(FileWriter controlFileWriter) {
        this.controlFileWriter = controlFileWriter;
    }

    public void setFileWriter(FileWriter fileWriter) {
        this.fileWriter = fileWriter;
    }

    @Override
    public void run() {

```

```

    processCik();
}

private void processCik() {
    if (cikNode != null) {
        int cnIdx = j + 2;
        NodeList companyNameNode = scrapper.xpath(coco1,
            ".*[@id='seriesDiv']/table/tbody/tr["+
                cnIdx + "]/td[2]");
        String companyName = null;
        if (companyNameNode != null && companyNameNode.getLength() > 0)
            companyName = companyNameNode.item(0).getTextContent();
        int stepCik = 100;
        int maxResults = 1000;
        for (int cikPage = 0; cikPage < maxResults; cikPage = cikPage + stepCik) {
            String cikURL = "https://www.sec.gov/cgi-bin/browse-
edgar?action=getcompany&CIK="+
                cikNode.getTextContent() + "&owner=include&start="+cikPage+"&count="
                + stepCik + "&hidefilings=0";
            scrapper.setUrl(cikURL);
            scrapper.setFileToGenerate(fileToGenerate);
            Utils.writeControlFile(j + ": Cik URL: " + cikURL, controlFileWriter);
            Document coco2 = scrapper.scrap();
            if (coco2 == null) {
                Utils.writeControlFile("Errors", controlFileWriter);
                continue;
            }
            NodeList filings = scrapper.xpath(coco2,
                ".*[@id='seriesDiv']/table/tbody/tr/td[1]");
            Utils.writeControlFile("Filings Length: " + filings.getLength(),
                controlFileWriter);

            for (int k = 0; filings != null && k < filings.getLength(); k++) {
                int nThreads = 1;
                ExecutorService executorService = Executors.newFixedThreadPool(nThreads);
                for (int t = 0; t < nThreads; t++) {
                    Node codeNode = filings.item(k);

                    if (codeNode == null)
                        continue;

                    FilingThread cikThread = new FilingThread();
                    cikThread.setCikNode(cikNode);
                    cikThread.setControlFileWriter(controlFileWriter);
                    cikThread.setFileWriter(fileWriter);
                    cikThread.setCoco2(coco2);
                    cikThread.setCodeNode(codeNode);
                    cikThread.setCodes(codes);
                    cikThread.setCompanyName(companyName);
                    cikThread.setK(k);
                    cikThread.setSicNode(sicNode);
                    cikThread.setFileToGenerate(this.fileToGenerate);
                    executorService.execute(cikThread);
                    k++;
                }
                executorService.shutdown();
            }
            try {
                executorService.awaitTermination(Long.MAX_VALUE, TimeUnit.NANOSECONDS);
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    }
}

```

```
}  
}  
}  
}  
}
```

9.3. Correlation between joint venture contract clauses

Clause	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43							
1 Preamble or Recitals	1.00																																																	
2 Contractual definitions	0.19	1.00																																																
3 Description of the parties	0.17	0.17	1.00																																															
4 Name of the joint venture	0.16	0.07	0.09	1.00																																														
5 Location of the JV	0.14	0.05	0.12	0.41	1.00																																													
6 Equity share	0.06	0.04	0.04	0.11	0.17	1.00																																												
7 Contributions of the Parties	0.20	0.08	0.11	0.20	0.24	0.62	1.00																																											
8 Parties duties and responsibilities	0.03	0.06	-0.02	0.09	0.09	0.13	0.12	1.00																																										
9 Organization and management	0.14	0.32	0.10	0.31	0.23	0.21	0.30	0.18	1.00																																									
10 Appointment of key personnel	0.18	0.25	0.09	0.36	0.24	0.14	0.26	0.05	0.49	1.00																																								
11 Right to recruit and dismiss personnel	0.08	0.07	0.31	0.24	0.14	0.18	0.22	0.25	0.38	1.00																																								
12 Access to information	0.10	0.37	0.06	0.06	0.01	-0.01	0.04	0.09	0.18	0.21	0.09	1.00																																						
13 Actions requiring consent (vetoes)	0.22	0.29	0.09	0.08	0.02	0.08	0.13	0.11	0.31	0.21	0.11	0.28	1.00																																					
14 Change in control of a party	0.06	0.22	0.02	0.03	0.00	-0.05	0.00	0.02	0.15	0.20	0.06	0.21	0.14	1.00																																				
15 Replacement of a party	0.24	0.33	0.11	0.28	0.19	0.18	0.26	0.08	0.41	0.39	0.20	0.30	0.34	0.17	1.00																																			
16 Call option	0.09	0.23	0.02	-0.07	0.04	0.06	0.08	-0.03	0.10	0.05	-0.06	0.21	0.17	0.18	0.19	1.00																																		
17 Put option	0.02	0.13	-0.01	0.07	0.02	-0.06	0.02	-0.06	0.07	0.15	0.03	0.14	0.10	0.18	0.14	0.35	1.00																																	
18 Board of directors	0.18	0.34	0.13	0.30	0.21	0.24	0.28	0.10	0.61	0.59	0.30	0.24	0.24	0.16	0.44	0.16	0.08	1.00																																
19 Voting rights	0.24	0.47	0.13	0.26	0.20	0.13	0.20	0.11	0.50	0.46	0.23	0.33	0.36	0.23	0.50	0.23	0.16	0.58	1.00																															
20 Meetings (board of management committee)	0.15	0.46	0.13	0.28	0.20	0.14	0.26	0.17	0.52	0.51	0.34	0.37	0.28	0.23	0.50	0.19	0.15	0.64	0.64	1.00																														
21 Performance mandates	0.08	0.22	0.07	0.05	-0.02	-0.10	-0.04	0.05	0.04	-0.02	-0.06	0.27	0.19	0.22	0.15	0.09	0.13	-0.02	0.17	0.06	1.00																													
22 Distribution (share) in profits and losses	0.11	0.25	0.14	0.32	0.19	0.15	0.21	0.19	0.39	0.37	0.26	0.21	0.24	0.14	0.39	0.08	0.14	0.35	0.43	0.42	0.13	1.00																												
23 Tax considerations	0.06	0.34	0.16	0.16	0.12	0.12	0.15	0.16	0.37	0.25	0.24	0.25	0.24	0.17	0.31	0.16	0.08	0.32	0.39	0.43	0.10	0.40	1.00																											
24 Accounts (accounting and reporting)	0.19	0.38	0.12	0.29	0.18	0.11	0.23	0.22	0.50	0.43	0.22	0.31	0.38	0.16	0.46	0.10	0.14	0.44	0.53	0.52	0.15	0.45	0.46	1.00																										
25 Products to be produced	-0.02	0.00	-0.02	0.06	0.03	-0.05	-0.03	0.10	0.05	0.03	0.12	0.00	-0.05	0.03	0.02	0.05	0.02	0.03	0.08	-0.10	0.00	0.04	-0.02	1.00																										
26 Exclusivity	0.08	0.13	0.03	-0.09	-0.07	-0.02	-0.02	0.09	0.06	0.02	-0.02	0.10	0.17	0.15	0.01	0.15	-0.02	0.06	0.15	0.06	0.08	0.04	0.14	0.05	0.12	1.00																								
27 Sales territory	0.07	0.12	0.01	0.09	-0.04	-0.08	-0.09	-0.05	0.09	0.18	0.10	0.10	0.18	0.14	0.00	0.08	0.13	0.19	0.14	0.08	0.13	0.13	0.09	0.05	0.27	1.00																								
28 Intangible assets, know-how, IP	0.15	0.30	0.09	0.14	0.01	-0.03	0.06	0.07	0.23	0.22	0.02	0.25	0.24	0.22	0.23	0.08	0.11	0.17	0.34	0.26	0.23	0.21	0.17	0.25	0.05	0.20	0.23	1.00																						
29 Research and development	0.01	0.10	0.05	0.13	-0.02	0.00	0.00	0.13	0.23	0.22	0.06	0.05	0.12	0.13	-0.04	0.02	0.19	0.14	0.21	0.04	0.11	0.12	0.06	0.02	0.11	0.27	0.21	1.00																						
30 Duration of the Joint Venture	0.00	0.00	0.10	0.16	0.02	0.04	0.10	0.18	0.09	0.12	0.31	-0.01	0.10	-0.07	0.08	-0.04	-0.07	0.08	0.04	0.12	0.00	0.17	0.13	0.11	0.06	0.09	0.11	0.04	0.19	1.00																				
31 Termination of the Joint Venture	0.14	0.31	0.18	0.10	0.03	0.11	0.13	0.13	0.27	0.21	0.14	0.25	0.32	0.12	0.35	0.15	0.10	0.27	0.40	0.33	0.14	0.32	0.36	0.40	0.05	0.16	0.13	0.21	0.10	0.16	1.00																			
32 Force Majeure	0.16	0.23	0.10	0.15	0.17	0.15	0.17	0.24	0.29	0.25	0.35	0.14	0.19	0.01	0.25	0.09	-0.04	0.37	0.32	0.38	-0.05	0.19	0.19	0.28	0.09	0.14	0.07	0.11	0.16	0.23	0.29	1.00																		
33 Confidentiality	0.14	0.42	0.14	0.00	0.01	0.08	0.11	0.05	0.25	0.21	0.08	0.34	0.41	0.17	0.35	0.25	0.15	0.27	0.41	0.37	0.16	0.23	0.32	0.30	0.03	0.20	0.17	0.32	0.09	0.05	0.44	0.22	1.00																	
34 Liability	0.15	0.38	0.17	0.17	0.10	0.14	0.18	0.33	0.25	0.19	0.27	0.39	0.13	0.35	0.16	0.09	0.28	0.39	0.37	0.19	0.37	0.41	0.47	0.02	0.09	0.06	0.29	0.11	0.07	0.43	0.23	0.35	1.00																	
35 Breach of obligations / Default	0.26	0.25	0.20	0.09	0.09	0.04	0.19	0.12	0.23	0.26	0.17	0.29	0.50	0.14	0.33	0.17	0.10	0.22	0.41	0.35	0.19	0.28	0.25	0.38	0.04	0.18	0.12	0.24	0.08	0.10	0.44	0.29	0.34	0.41	1.00															
36 Non-competition - solicitation	0.06	0.13	0.05	0.11	0.01	0.03	0.00	0.16	0.17	0.19	0.16	0.19	0.17	0.05	0.21	0.20	0.18	0.01	0.14	0.13	0.10	0.04	0.05	0.20	0.17	0.18	0.07	0.18	0.14	0.28	0.12	0.18	1.00																	
37 Deadlock	0.11	0.25	0.02	0.11	0.06	0.04	0.11	0.03	0.21	0.23	0.10	0.23	0.20	0.28	0.24	0.17	0.12	0.27	0.34	0.33	0.13	0.28	0.15	0.24	0.01	0.08	0.22	0.24	0.13	0.07	0.16	0.12	0.26	0.18	0.18	0.29	1.00													
38 Resolution of disputes	0.19	0.31	0.10	0.26	0.15	0.13	0.18	0.21	0.36	0.35	0.31	0.19	0.25	0.17	0.36	0.13	0.14	0.43	0.41	0.48	0.11	0.31	0.30	0.39	0.08	0.10	0.09	0.15	0.15	0.18	0.26	0.39	0.31	0.37	0.33	0.14	0.17	1.00												
39 Arbitration/Mediation	0.24	0.29	0.18	0.26	0.17	0.15	0.24	0.12	0.29	0.28	0.18	0.22	0.32	0.12	0.32	0.15	0.12	0.36	0.38	0.41	0.12	0.31	0.27	0.41	0.05	0.07	0.07	0.17	0.10	0.12	0.33	0.25	0.36	0.33	0.37	0.17	0.18	0.54	1.00											

9.4. Heuristic search method for calculating JV contract complexity

For chapter four, I used a conservative measure of JV contractual complexity which uses 32 joint venture clauses. However, I include this additional computational experiment that was carried out using the DEoptim package in R. The results of this experiment are merely inductive; however, they are not completely irrelevant and could shed light on which contractual clauses are most affected by the institutional variables used in that chapter.

The experiment starts with the 32 clauses used in chapter four that result in an adjusted R-Squared of 0.22, and consists on a search for a specific weighted combination of those clauses that when regressed on the study's independent and control variables, results in the best model fit (higher adjusted R-squared). Global optimization studies commonly use differential evolution algorithms to perform heuristic searches (Storn & Price, 1997), which is derived from a genetic algorithm. The search finds solutions that represent a population that evolves over several generations. And just like any population, this evolution creates mutations and mixing of genes. These genes form the solutions which represent the weighted values of the clauses of my study. The values that increase the adjusted R-squared the most, survive just like the best genes, and can even improve their values through the permutations and mixing. Weight values that decrease the adjusted R-squared are the bad genes and are dropped, they do not survive.

I set the program to perform 600 iterations and integer weights from 0 to 10. Figure 9.1 shows how the adjusted negative R-squared increases and stabilizes at 0.5 at around 300 hundred iterations. Table 9.1 shows five final clauses that amount for an

adjusted R-squared of 0.5. The weights of all clauses are 1 except for *Right to recruit and dismiss personnel* with a weight of 9.

Figure 9.1. Heuristic search iterations for JV contractual clauses

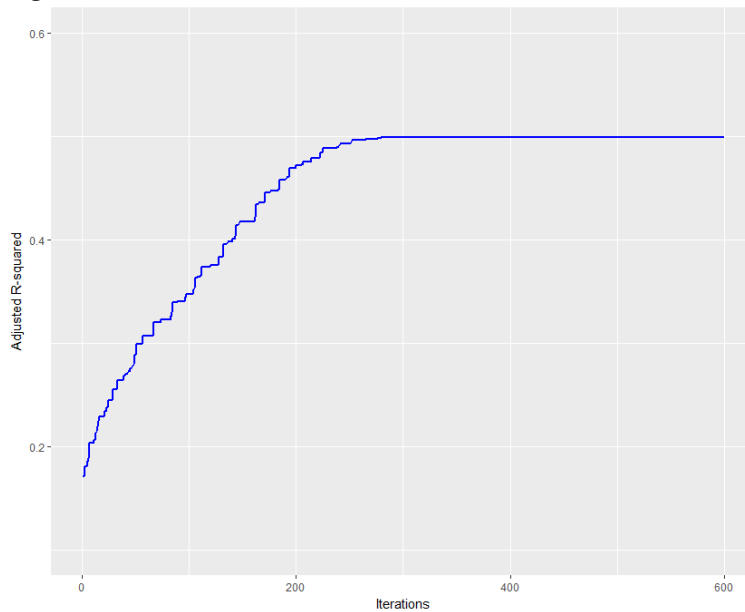


Table 9.1. Experiment results of heuristic search method: Five contractual clauses

Clause	Weight
Right to recruit and dismiss personnel	9
Location of the JV	1
Duration of the Joint Venture	1
Force Majeure	1
Resolution of disputes	1

Regression results using these clauses and weights are shown Table 9.2

Table 9.2. Regression results of heuristic search experiment. Weighted
Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	2.154825	0.352263	6.117	1.73e-09	***
Domestic vs IJV	1.137834	0.265898	4.279	2.19e-05	***
Civil Law	0.950242	0.511659	1.857	0.0638	.
Chinese Law	7.697768	0.638245	12.061	< 2e-16	***
Hybrid Law	1.396606	0.649775	2.149	0.0320	*
Corruption	0.102155	1.297251	0.079	0.9373	
Cost to Enforce	0.002526	0.003257	0.776	0.4383	
Time to Enforce	-0.047354	0.019469	-2.432	0.0153	*

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Residual standard error: 3.078 on 593 degrees of freedom (25 observations deleted due to missingness)					
Multiple R-squared: 0.5055, Adjusted R-squared: 0.4997					
F-statistic: 86.6 on 7 and 593 DF, p-value: < 2.2e-16					

For the sake of comparisons, table 9.3 shows the results of the regression of the five clauses but in this case unweighted, meaning all with a value of one. The adjusted R-squared is still high at 0.36. These additional results, suggest that weighted measures may be arbitrary and should be taken with caution.

Table 9.3. Regression results of heuristic search experiment. Unweighted
Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	0.4160699	0.0261217	15.928	< 2e-16	***
Domestic vs IJV	0.0920995	0.0197174	4.671	3.71e-06	***
Civil Law	0.0769670	0.0379416	2.029	0.0429	*
Chinese Law	0.4129534	0.0473285	8.725	< 2e-16	***
Hybrid Law	0.0994376	0.0481835	2.064	0.0395	*
Corruption	0.0104857	0.0961965	0.109	0.9132	
Cost to Enforce	-0.0002175	0.0002415	-0.901	0.3681	
Time to Enforce	-0.0071895	0.0014437	-4.980	8.35e-07	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					
Residual standard error: 0.2282 on 593 degrees of freedom (25 observations deleted due to missingness)					
Multiple R-squared: 0.3689, Adjusted R-squared: 0.3615					
F-statistic: 49.52 on 7 and 593 DF, p-value: < 2.2e-16					