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**Moderating Effects of Asymmetric Power on the Relation between Specific Investments  
and Mode of Governance**

A research proposal

By

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This thesis was written as a part of the master program at NHH. Neither the institution, the supervisor, nor the censors are - through the approval of this thesis - responsible for neither the theories and methods used, nor results and conclusions drawn in this work.

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## Abstract

This master thesis is a research proposal focusing on the extent to which asymmetric power impacts the effects of specific investments on governance mode. Williamson's (1975, 1981, 1985, 1991a, 1991b) transaction cost economics (hereafter, TCE) has been a leading theory of inter-firm governance. Although TCE has received widely recognition, it has been subject to criticisms. One of which I pay particular attention is its empirical validity and applicability, since TCE seems to give insufficient explanation on mode of governance used in asymmetric power relationships.

TCE focuses on the dichotomy between market and hierarchy. However, researchers critique that TCE overstates the desirability of partners on integration and explicit contract. In facts, firms conduct collaborative exchange which is neither market nor hierarchy (Dyer, 1997). Moreover, Geyskens's et al. (2006) meta-analysis shows that studies support that as asset specificity increases relational governance becomes preferred over market governance. In general the logic is the same with original TCE that if specific investments are high, an investing firm exposes itself to its partner's opportunisms, so that a firm needs to safeguard such investments. In this proposal I incorporate relational governance in the model to improve TCE's ability to explain the relation between specific investments, firm power, and mode of governance.

Asymmetric power is hypothesized to increase the degree of hierarchical governance when specific investments are deployed by the stronger firm in a dyadic relationship because a stronger firm will exploit its weaker partner (Bannister 1969; Robicheaux & El-Ansary 1975) by prescribing its weaker partner to agree with a contract that governs both parties to work more closely than usual, enabling the stronger firm to gain more protection of its assets at risk, and increase its access to the weaker partner's information (Dwyer & Walker, 1981; Frazier & Rody, 1991; Frazier et al., 1989; Heide & John, 1992; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). On the contrary, asymmetric power is expected to lower the degree of hierarchical governance when the investing party is the weaker party in the relationship. A stronger partner is likely to prefer market based governance because it can gain benefits from market competition when it has no assets at risk (Williamson, 1985). A

weaker firm is prone to accept a high tolerance level for the use of power by its strong partner (Bucklin, 1973; Blalock and Wilkin 1979).

On the other hand, symmetric power where two parties possess the same levels of power is hypothesized to increase the degree of relational governance when both parties hold mutual specific investments. TCE suggests that under such conditions firms will tend to employ integrated governance to safeguard their specific assets and reduce transaction costs. However, under such conditions it seems hard to develop hierarchical governance where one party will have a legitimate authority to direct another party because both parties possess the same degree of power. They are, therefore, likely to employ relational governance that expresses the sentiment of joint responsibility (Cannon et al., 2000). Moreover, under relational exchange both partners can avoid high costs of establishing and maintaining the bilateral contract (Harrigan, 1983).

Expected contribution of this research is to improve TCE's ability to explain make, buy, or ally decisions across exchange partners. Other constructs may be needed to augment TCE perspective. This research proposes that TCE should be augmented with a construct of asymmetric power.

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## **1. Introduction**

### **1.1. Research problem**

Williamson's (1975, 1981, 1985, 1991a, 1991b) transaction cost economics (hereafter, TCE) has been a leading means of operationalization regarding transaction costs used to determine mode of governance (Coase, 1937). Although TCE has received widely recognition, it has been subject to criticisms. One of which I pay particular attention is its empirical validity and applicability, since TCE framework seems to be insufficient to explain mode of governance used in asymmetric power relationships between stronger and weaker partners.

In this proposal, I argue that, for example, under condition involving high deployment of specific investments by both parties in dyadic relationship a degree of hierarchical governance is expected to be higher than usual when relationship between exchange partners is characterized as asymmetric power. Under asymmetric power relationship the degree of bilateral governance is expected to be higher than in the symmetric power relationship because a firm with relatively high power will exploit its exchange partner (Bannister 1969; Robicheaux & El-Ansary 1975). I anticipate that a stronger firm would prescribe its weaker partner to employ a contract that governs both parties to work even more closely than usual – i.e., more formalized and centralized, to gain more protection of its assets at risk and more access to its partner's information (Dwyer & Walker, 1981; Frazier & Rody, 1991; Frazier, Gill, & Kale, 1989; Heide & John, 1992; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). Such contract may provide legitimate authority to a stronger partner to monitor weaker partner's behavior or nominate this stronger party to be a party who has the authority to modify contractual provisions in order to safeguard its specific investments (Stinchcombe, 1985). The positive relation between specific investments and the degree of formalization and centralization of the contract is likely to become stronger as asymmetric power increases. The higher the asymmetric power the closer collaboration the stronger party prefers to employ with its weaker partner under high degree of specific investments.

In the theoretical model relational governance is incorporated in order to improve TCE's ability to explain relation among specific investments, firm's power, and mode of governance. Originally TCE framework focuses on the dichotomy between market and

hierarchical governance. However, researchers critique TCE that it overstates the desirability of exchange partners on integration and explicit contract. In fact, many firms conduct collaborative exchange which is neither market nor hierarchy (Dyer, 1997). Moreover, Geyskens, Steenkamp, and Kumar's (2006) meta-analysis shows that many studies support the incorporation of relational governance – i.e., as asset specificity increases relational governance becomes preferred over market governance. In general the logic is the same with original TCE that if specific investments are high, an investing firm exposes itself to opportunistic behavior of its exchange partner, so that the investing firm needs to safeguard its specific investments.

Example of my proposition is that under symmetric power relationships with mutual specific investment both exchange parties possess the same degree of power and hold high degree of specific investment, TCE framework suggests that as specific investments increase, firms will tend to employ integrated governance to safeguard their specific assets and reduce transaction costs. However, under such condition it seems hard to develop hierarchical governance that one party will have a legitimate authority to direct another party because both parties possess the same degree of power. Contracting firms are, therefore, likely to employ relational governance that expresses the sentiment of joint responsibility (Cannon, Achrol, & Gundlach, 2000). None can direct any decision to its partner. Moreover, reliance on relational exchange both partners can avoid the high costs of establishing and maintaining the bilateral contract (Harrigan, 1983).

Mode of governance was traditionally casted in terms of two polar extremes – i.e., market and hierarchy as alternative governance arrangements by Coase (1937), suggesting that mode of governance between market and hierarchy is determined by differences in transaction cost. Williamson further develops Coase's proposition by indicating three alternate forms of governance – i.e., market, hybrid, and hierarchy, which each associates with transaction dimensions, including specific investments, uncertainty, and frequency.

TCE has been as a guideline for various types of research on governance arrangements, including study on the integration of production within the firm –i.e., make or buy (e.g. Gulati, Lawrence, & Puranam, 2005; Hoetker, 2005; Jacobides & Winter, 2005; Leiblein, Reuer, & Dalsace, 2002; Leiblein & Miller, 2003;), the integration of services within firm

(Delmas & Tokat, 2005; Murray & Kotabe, 1999; Nickerson, Hamilton, & Wada, 2001; Poppo & Zenger, 1998), the management and performance of multinational enterprises (Goerzen & Beamish, 2003, 2005), the functioning and performance of joint ventures (Luo, 2002; Pearce, 1997; Reuer, 2001), the coordination of inter-organizational relationships (Michael, 2000; Poppo & Zenger, 2002; White & Lui, 2005), and the international mode of market entry (Brouthers, Brouthers, & Werner, 2003; Chang & Rosenzweig, 2001).

Moreover, there is now much evidence to support the tenets of TCE that transactions will be handled in the most efficient way, meaning that firms adopt governance that aligns with exchange hazards (David & Han, 2004; Geyskens et al., 2006). For example, Anderson (1988) suggests that integration among channel partners might increase the efficiency when there are high specific investments. Joskow (1988) empirically studies the relationships between the specific investments and the complexity of contracts.

In additions, TCE have been further tested what may moderate the effect of transaction dimensions to choices of governance. For example, Noordewier, John, and Nevin (1990) suggest that norms might mediate the transaction costs by decreasing the logistical costs under high degree of environmental uncertainty. Artz and Brush (2000) prove that relational norms moderate the relationship between specific investments and negotiation costs. Buvik and Jonh (2000) found that trust could lower the transaction costs. Buvik and Haugland (2005) study how relationship duration may mediate the effect of the allocation of specific investments on contractual coordination across buyer-seller relationships.

However, as mentioned above, TCE has been subject to five critical comments. First, the TCE contribution and role of economic models may be insufficient to the applied field of strategic management (David & Han, 2004; Rumelt, Schendel, & Teece, 1991; Schendel, 1991).

Second, TCE's empirical validity and applicability may be insufficient to explain the extremely complex relationships in the field of strategic management. More empirical research is, thus, needed (Chen, Peng, & Saporito, 2002; Coase, 1993; David & Han, 2004; Ghosal & Moran, 1996).

Third, TCE overstates the exchange partners' desirability of integration, or hierarchical governance, and of explicit contractual safeguards, or market governance, to protect against transaction hazards (Poppo & Zenger, 2002). It overemphasizes the ability of hierarchical governance to govern relationships (Maitland, Bryson, & Van de Ven, 1985) and fails to account for the social structures within which exchange is embedded (Granovetter, 1985). Relational governance is, thus, established. Further on, relational governance will be delineated.

Fourth, the TCE's presumption that governance continuum runs from markets to hierarchies seems to be misleading because these approaches rest on the premise that market and hierarchy are independent and mutually exclusive means to control the industries. Bradach and Eccles (1989), however, prove that firms simultaneously employ distinct governance forms for the same function. This phenomenon is named "plural forms." As mentioned, plural forms is also included in the proposed model and is explained more in detail in the further chapter.

Last and foremost, there is limited extant research examining the extent to which scope conditions, contextual variables, or moderator variables affect the explanatory or predictive power of TCE. More thorough empirical grounding of TCE's foundation is, thus, needed (David & Han, 2004).

This research proposal is concerned with three issues mentioned above: (a) the "scope conditions" that explain the conditions under which TCE works well and under which it does not (David & Han, 2004: 54), and (b) the incorporation of relational governance to TCE framework. The particular scope condition is the relationship between exchange partners that have different degree of power. One firm is a firm with relatively high power and the other with relatively low power. Under this asymmetric relationship exchange partner may make different decision from what TCE predicts. There should be a moderating effect of asymmetric power on the relations between transaction dimensions and mode of governance.

There is one extent research focusing on this particular scope condition. That is Shervani, Frazier, & Challagalla's (2007) study in the context of forward integration, where power is a firm market power indicated by market positioning and product differentiation; and mode

of governance is a choice between non-integrated or integrated distribution channels. To offer different approach, this research proposal is intended to conduct in the buyer-seller context and firm's power is reflected by the resource availability and motivational investment. Greater choices of mode of governance are under consideration, including hierarchical governances and relational exchange.

Power asymmetry shows the phenomenon that a firm with relatively high power has ability to prescribe its exchange partner's decision making and behaviors. In this research proposal the decision making and behavior pertain to the degree of hierarchical governance (Williamson, 1975, 1981, 1985, 1991a, 1991b) and relational governance (Macneil, 1978, 1980). It is of interest to study how asymmetric power would moderate the association between transaction dimensions and governance forms.

Under asymmetric relationships, the degrees of hierarchical governance may be lower or higher than usual depending on the degrees of power of investing party. TCE overlooks the situation that different modes of governance become preferred by different partner parties, depending on what exchange hazards each party face. Such situation seems to occur with unilateral investment of specific assets that only one partner firm makes an investment. For example, according to the tenets of TCE, hierarchical or hybrid governance should become preferred over markets for the firm which makes specific investments to a nontrivial degree, the investing firm. On the contrary, market governance should become preferred over hierarchical or hybrid governance for a partner firm that makes no specific assets, a receiving firm. As exchange partners may have different costs and preferences, what mode of governance should be used? Drawing on the power asymmetry thesis, the selected governance should be more aligned with the exchange hazards of a firm with relatively high power in the asymmetric power relationships, although it may raise transaction costs for another a party with relatively low power.

This research proposal intends to explore the effect of asymmetry in power in inter-organizational exchange to determine if power asymmetry would moderate the effects of specific investments –i.e., the core transaction dimension, on mode of governance, how asymmetric power would affect mode of governance, and/or if there are variable that moderate the effect of power asymmetry on mode of governance. However, the symmetric

power will be included in the study in order to explore how low degrees of power asymmetry influences mode of governance. Symmetric power relationship is the case where both partners have the same level of power – i.e., no dependency before any transaction occurs. No firm can prescribe its exchange partner's decision making and behaviors.

The proposed research context is Norwegian upstream oil and gas (hereafter, O&G) industry. There are three key factors making it of interest. First, this industry demonstrates various types of governance structures, including market (Reve & Johansen, 1982), hierarchy, hybrid (Ernst & Steinhubl, 1997), relational (Green, 2003), and plural forms (Olsen, Haugland, Karlsen, & Husøy, 2005). Second, this industry exhibits the phenomenon of asymmetry power between buyer and seller that can occur in two directions: (a) The case that buying firm is the firm with relatively high power, since there are a small numbers of O&G firms serving as operator firms but there are a large numbers of industrial vending firms that provide products and services for the construction and maintenance of offshore fields (Reve & Johansen, 1982). Vending firms are direct competitors to each other in the open market (Green, 2003). (b) On the contrary, the case that supplier firm holds power over its buyer firms. Given O&G context, specialist firm, normally a small firm, holds specialized knowhow and technology that an oil firm, normally a large firm, would like to acquire (Ernst & Steinhubl, 1997). For example, under the harsh and potentially hazardous conditions operator oil firms rely heavily on specialist contractors to support their operations (Green, 2003). Such technology may create technical dependency (Reve & Johansen, 1982).

Third factor making Norwegian upstream O&G of interest, Norwegian O&G production is increasingly important because the natural gas production within EU entered a state of decline in 2004 (IEA, 2008). In fact, the gas production of the UK, the major producer, is decreasing by 8 – 10% per year. Likewise, the gas production in the Netherlands peaked in thirty years ago and has been at a slightly declining plateau level. Denmark gas production is more likely to enter a state of decline next year (Søderbergh, Jakobsson, & Aleklett, 2009).

All three reasons of various types of existing governance forms, power asymmetry phenomenon, and importance of NCS consequently make it of interest to examine how

asymmetric power would moderate the effect of specific investments and mode of governance in the context of Norwegian O&G industry.

Expected contribution of this research is to improve TCE's ability to explain make, buy, or ally decisions across exchange partners. Other constructs may be needed to augment TCE perspective. This research proposes that TCE should be augmented with a construct of asymmetric power. Moreover, this research proposal uses a multi-theoretical approach to create a more comprehensive conceptualization of inter-organizational relationships by integrating economic and sociological perspectives to explain the determinants of governance form. The two combined perspectives are expected to explain a significantly greater proportion of the variance in the structural manifestation of governance forms of inter-organizational relationships.

## **1.2. Thesis structure**

The remainder of this thesis is organized as follows. Chapter 2 focuses on the inter-organization relationship. I first examine the literature on definition and purpose of IR and related consequences, such as benefits and pitfalls. I then proceed to the empirical findings in this discipline.

Chapter 3 focuses on inter-organizational governance used between exchange parties. I present three key streams of literature, including transaction cost economics, relational contracting exchange, and plural forms. I end this chapter with empirical findings in the discipline of transaction cost economics and relational contracting exchange.

In Chapter 4 I focus on power between exchange partners. Key concepts of power are introduced, including definition, composition, scale, base, and effect. Empirical findings are provided.

Chapter 5 presents the upstream oil and gas industry. I introduce in short its basic products and production, and then demonstrate the importance of this industry. Five forms of inter-firm relationships and asymmetric power in the industry is detailed.

Chapter 6 describes research model and hypothesis development. Basic transaction cost economics tenet and the incorporation of relational governance will be first hypothesized. I further augment and hypothesize them with a construct of asymmetric power.

Chapter 6 presents the proposed research design and methodology. I first explain the research design; then validity concerns and empirical setting are described. I proceed to the sample frame and sample procedures. I end this chapter and this research proposal with the measurement, including the measurement process and the measures.



## **2. Inter-organizational relationship**

### **2.1. Introduction**

As markets are becoming more and more competitive both globally and locally, firms are struggling to reach all dimensions of their business goals. Very few firms are endowed with necessary resources and capabilities to operate under such market conditions. Firms with few endowments may choose to collaborate with other firms and form relationships in order to acquire complementary resources. The purpose of this chapter is therefore to explore the occurrence of inter-organizational relationship (hereafter, IR), reasons supporting IR formation, its benefits and shortcomings, and empirical findings in this discipline.

### **2.2. What is inter-organizational relationship?**

An IR occurs when firms transact firms' resources among each other temporary or long-lasting in order to attain collective and self-interest goals that they could not achieve easily alone through structure and interdependent processes (Lambe, Spekman, & Hunt, 2002; Van de ven, 1976). IR is, therefore, defined as the set of practices and routines that support economic exchanges between firms (Kotabe, Martin, & Domoto, 2003). The collaboration between firms can be made in a variety of forms, such as, manufacturer-supplier partnerships, strategic purchasing arrangements, joint ventures, outsourcing (Morgan & Hunt 1994; Varadarajan & Cunnigham, 1995).

### **2.3. Why do firms form inter-organizational relationship?**

Generally firms conduct IR because they do not have some resources required to achieve their business goals (Hunt, 1997; Das & Teng, 2000; Day, 1995). Alternatively, large firms can use IR to leverage their depth of resources (Day, 1995). Firms can design what kinds of mixed resource they like to have after they establish IR. Many firms establish IR with other firms on the hope of the value creation, such as competitive advantage which might be developed by unique resources. Firms may choose to seek advantage by making specific

investments dedicated for the conjunction with assets of exchange partners (Klein, Crawford, & Alchian, 1978; Teece, 1987). For firms that intend to adopt IR to achieve their goals, extant studies indicate that prospective partners must possess complementary resources that then constitute a relationship portfolio that complements existing resources of firms (Hunt, 1997; Lambe et al. 2002).

Moreover, exchange firms form an IR because they expect to attain a supernormal profit called a relational rent that is defined as “a supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners.” (Dyer & Singh, 1998:662).

IR can offer exchange partners a number of different types of benefits, e.g., increased efficiency, greater flexibility, and more organizational learning (Cannon et al., 2000). Asanuma (1989) is among the first to document how the relation-specific skills developed between Japanese suppliers and their automakers generate surplus profits and competitive advantages for collaborating firms (Dyer & Singh, 1998).

Strategic alliance, one form of IR, may be account for as firm’s valuable resources, since investment analysts explicitly evaluate the quality of firm’s relationships with outside partners. Higher quality partnerships result in higher market valuations (Powell, 1996). Similarly, Powell, Koput, and Smith-Doerr (1996) found that the locus of innovation in the biotechnology industry was the network – not the individual firm. Patents were typically filed by a large number of individuals working for a number of different organizations, including biotech firms, pharmaceutical companies, and universities. Powell et al. (1996) argue that biotech firms who are unable to create (or position themselves in) learning networks are at a competitive disadvantage.

#### **2.4. *Disadvantages of inter-organizational relationship***

IR comes with pitfalls. Van de Ven (1976:28) suggest that “from an agency’s point of view, to become involved in an inter-agency relationship implies (a) that it loses some of its freedom to act independently, when it would prefer to maintain control over its domain and affairs,

and (b) that it must invest scarce resources and energy to develop and maintain relationships with other organizations, when the potential returns on this investment are often unclear or intangible. For this reasons an agency prefers not to become involved in an IR unless it is compelled to do so.” Cannon et al. (2000) suggest that close relationship among firms comes with shortcomings, e.g., greater vulnerability to opportunism that, in short, refers to self interest-seeking behavior embodied in calculated efforts to mislead and confuse exchange partners (Williamson, 1985).

## **2.5. Empirical findings**

Much extant empirical research in IR studies factors influencing success of IR. For examples, several researchers suggest that relational factors (e.g., trust and commitment) lead to IR success (e.g. Ganesan, 1994; Jap, 1999; Morgan & Hunt, 1994). Others pay attention to the inter-firm resources of exchange partners that would make productivity in the value chain increases when exchange partners are willing to make specific investments and combine resources in unique ways (Asanuma, 1989). Some extent research focuses on the commitment of senior management, such as Lambe et al. (2002) found that the commitment of senior management to the use of IR has a strong effect on development of IR competence. Another factor benefiting IR involves the supplier performance improvement that is influenced by long-established relationships between supplier and manufacturer because not all benefits occur in newly established ones (Kotabe et al., 2003). Review of each literature is provided as follows.

Ganesan (1994) whose empirical research focuses on the buyer-seller relationship suggest that trust and dependence play key roles in determining the long-term orientation; and such long-term relationships can create competitive advantage for both buyers and sellers. He concludes that dependence alone is not sufficient to explain long-term orientation because it focuses on existing condition; and if a firm with high dependency perceives that it does (or will) not get the fair division of the pie of resource, it will seek constantly to escape from the dependence. It is, therefore, necessary to include trust for explaining long-term relationship, since with trust the focus is on future conditions. To create a perception of fair division of resources in the future a firm must believe that its exchange partner is trustworthy.

Morgan and Hunt's (1994) empirical study focuses on relationship marketing whose forms, interestingly, do not limit within the buyer-seller relationship but include lateral and internal partnerships –i.e., competitors, non-profit organizations, governments, functional departments, employees, and business units. Relationship market, therefore, refers to “all marketing activities directed toward establishing, developing, and maintaining successful relational exchange” (Morgan & Hunt, 1994: 22). They theorize that successful relationship marketing requires relationship commitment and trust because they engender cooperation which is required if firms aim to be effective competitors in today's global marketplace.

Similarly, Jap's (1999) empirical research on buyer-seller relationship explains how collaborative process creates mutually beneficial strategic outcomes between buyers and suppliers. Two factors are suggested to facilitate this process – i.e., coordination efforts and specialized investments which in turn are facilitated by goal congruence and interpersonal trust.

Regarding literature focusing on inter-firm resources, Asanuma's (1989) empirical study in the manufacturer-supplier relationships in automobile industry and electric machinery industry suggests that long-standing relationships attribute to relation-specific skill accumulated by supplier and ratings thereon exercised by a manufacturer. Relation-specific skill is defined as exerting and visible supplier's abilities exerting dedicated for manufactures; and rating is on supplier in terms of performance and potential capabilities. The higher relation-specific skill and rating, the longer is the relationships.

Regarding senior management commitment, Lane's et al. (2002) empirical study supports that senior management commitment to the use of alliances has a strong effect on the development of an alliance competence which in turn has an effect on complimentary resources, idiosyncratic resources, and alliance success. The reason behind is that a firm strategic direction is driven by senior management.

Regarding long-established relationships benefitting IR, Kotabe et al. (2003) study the supplier-manufacturer relationships in automotive industry and argue that long-established inter-firm relationship can enable value-adding mechanisms by conditioning the effectiveness of more complex and higher-level of technology transfer which in turn can be associated with supplier performance improvement.

## **2.6. Summary**

This chapter focuses on IR which has attracted the attention of both managers and academics, because it provides strategic solutions for most firms to achieve their goals that they could not achieve easily alone, especially when markets are becoming more and more competitive and globalised. In this chapter, I first introduce the occurrence of IR that exhibits when firms transact their resources in order to achieve collective and self-interest goals. I define the IR as the set of practices and routines supporting economic exchanges between firms.

I proceed to describe why firms form IR. A number of motives influence firms to form IR. For example, (a) acquiring lacking desirable resources, (b) leveraging excess of resources, (c) aiming for competitive advantage, (d) aiming for supernormal profit, (e) increasing efficiency, (f) becoming more flexible, (g) attaining more organizational learning, (h) increasing firm value, (i) accessing to innovation. However, disadvantages of IR toward firms are also provided. For example, (a) losing their freedom, (b) making investments when returns are often unclear, (c) becoming greater vulnerable to opportunism.

Unavoidably, IR comes with pitfalls. Disadvantages of IR are provided before this chapter ends with empirical findings in the field of IR. Much research pays attention to factors influencing success in IR. For example, Ganesan (1994) argues that trust and dependence determines long-term orientation, which in turn creates competitive advantage. Dyer and Singh (1998) emphasized the strategic importance of inter-firm resources and governance mechanisms.

### **3. Inter-organizational governance**

#### **3.1. Introduction**

After firms enter IR and start to collaborate with other firms, they become part of shared agreements with partner firms. In practice, such inter-firm agreements show in different forms such as subcontracting, franchising, licensing, and strategic alliance.

Such agreements or governance mechanisms have been an interesting topic for both managers and academics because their business challenges are different from those of conventional organization. Their unique characteristics require further research development.

The purpose of this chapter, therefore, is to provide descriptive and explanatory of extant theories in the field of inter-organizational governance (hereafter, IG). Different theoretical frameworks make different assumptions about the nature of IG. There are two main perspectives on IG: transaction cost economics (hereafter, TCE) and relational contracting theory (hereafter, RCT).

TCE was built in part on Coase's (1937) concept on market and hierarchy and operationally developed by Williamson (1975), while RCT's Macniel (1978, 1980) develop a typology of discrete versus relation exchange. The final section of this chapter contains a discussion of plural forms.

#### **3.2. What is governance?**

Governance has traditionally been defined very broadly as a mode of organizing transactions (Williamson & Ouchi, 1981). It is the control structure, formal or informal rules of exchange (Ghosh & John, 1999), which enables exchange partners to constrain the level of opportunism in the relationship. Since its definition is very broad, there is a large number of different mechanisms that firms can adopt to establish, structure, monitor, and enforce transactions with its exchange partners. For example, price mechanism is a kind of control mechanism that price drive partner firms to behave according to an agreement (Stern & Reve, 1980). Other example form of governance can be the developed norms of behaviors

between exchange partners (Macneil, 1980). In addition, many firms rely on a mix of contracts, such as pricing and credit programs, bonus programs, merchandizing aids, among others (Frazier, 1999). Therefore, it can be said that IG is a heterogeneous syndrome (Heide, 1994).

### **3.3. Transaction cost economics**

The preceding sub-chapter explains the meaning of governance and specifies that in this research proposal I focus only two main perspectives of IG – i.e., TCE and RCT. In this sub-chapter the TCE will be delineated.

Coase's (1937) explicating on market and hierarchy seems to be the very first and widely accepted study on governance mechanism. He suggests that the mode of governance between markets and hierarchies is determined by differences in transaction cost. A firm, hierarchical governance, exists because costs of economic exchange in market exceed the costs of organizing it within a firm. Bradach and Eccles (1989:99) observe many scholars' works on the insight of Coase (1937) and conclude the basic argument as "transactions will be governed by the institutional arrangement that is most efficient."

Transaction costs are expenditures associated with an economic exchange that vary independently of competitive prices and the product exchanged (Robins, 1987). Williamson (1985) shows that transaction costs are composed of ex ante costs and ex post costs. Ex ante costs are costs associated with bargaining costs; and ex post costs are cost associated with monitoring and maladaptation costs.

*Bargaining costs* are expenditures associated with negotiation among exchange partners that was made to modify contractual terms periodically (Dahlstrom & Nygaard, 1999; Milgrom & Roberts, 1991).

*Monitoring costs* are expenditures paid for guaranteeing the fulfillment of contractual obligations or ensuring that exchange partners act in the best interest of all parties (Lal, 1990; Dahlstrom & Nygaard, 1999).

*Maladaptation costs* are expenditures associated with communication and coordination failures among exchange partners and occur, for example, when product's information does not accompany the delivery (Dahlstrom & Nygaard, 1999; Reve, 1986).

Among much prior research on transaction costs, Williamson's (1985) TCE has been a primary means of operationalization regarding transaction costs. TCE explicitly considers the efficiency implications of adopting alternative forms of governance and suggests three alternate modes of governance, including market, hybrid, and hierarchy. The central question of TCE is whether a transaction is more efficiently performed within a firm – i.e., hierarchical governance, or outside it, by autonomous exchange parties – i.e., market governance (Geyskens et al., 2006).

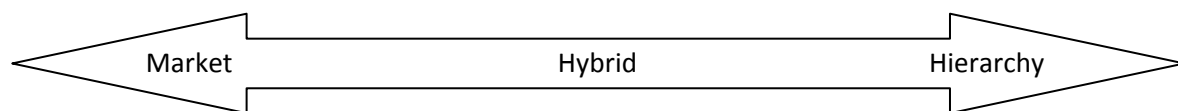


Figure 3.1 The continuum of exchange and mode of governance (Williamson, 1985)

### **3.3.1. Market governance**

Market governance corresponds formal contracts, representing promises or obligations to perform particular actions in the future (Macneil, 1978) and defining remedies for foreseeable contingencies or specifying processes for resolving unforeseeable outcomes (Poppo & Zenger, 2002). The more sophisticated is the contract; the precise is the promises, obligations, and processes for dispute resolution, whereby the identity of the transacting partners is irrelevant and no dependency relation exists between them –i.e., each exchange partner is autonomous. It is, therefore, easy for firms to switch exchange partners with little penalty because other prospective partners offer virtually identical resources (Dyer & Singh, 1998). Transactions are governed by formal terms, interpreted in a legalistic way, and characterized by “hard bargaining” between parties. Market governance occurs in many forms in inter-organizational relationships, such as in the industrial sourcing situation where a buyer (manufacturer) acquires subassembly components from independent (external) suppliers (Heide, 2003).



Market governance benefits firms by providing cost advantage of external specialists and enabling firms to focus on their core business (Quinn & Hilmer, 1994). However, Dyer and Singh (1998:662) suggest that market relationships are not able to gain relational rent because “there is nothing idiosyncratic about the exchange relationship that enables the two parties to generate profits above and beyond what other seller-buyer combinations can generate.”

### **3.3.2. Hierarchical governance**

The second mode of TCE’s governance is the hierarchy or internal organization which provides more elasticity and adaptation than market governance. Adaptation to disturbances comes in form of fiat, meaning that parties in hierarchies resolve disputes internally, rather than relying of the courts. This form of governance is supported by means of an authority structure, providing one partner with ability to develop rules and impose decisions on the others. It describes the rules of internalized or vertically integrated exchange.

### **3.3.3. Hybrid governance**

Hybrid governance or ideal type (Bradach & Eccles, 1989) is characterized in between markets and hierarchies. It corresponds to neoclassical law which is more adaptable and elastic than the classical one used in market governance but less than the internal organization or hierarchies. Therefore, unanticipated disturbances are foreseen and any misalignments are absorbed in a “tolerance zone”. Once adaptation occurs, information disclosure is required. As disagreement occurs, the hybrids facilitate the arbitration (prior to resorting to the courts). In hybrid form, exchange parties maintain autonomy while mutually dependent to a nontrivial degree. The identity of the exchange parties matters, meaning that each partner cannot be replaced costlessly by the other.

The definition of hybrid governance indicates similarity in concepts of strategic alliance that refers to *relatively enduring inter-firm co-operative arrangements, involving cross-border*

*flows and linkages that utilize resources and/or governance structures from autonomous organizations, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm (Parkhe, 1991: 581).*

#### **3.3.4. Explication of TCE tenet**

Transaction costs are very difficult to measure because they represent potential consequences of alternative decisions. Not much extant research measures such costs directly (e.g. Oxley, 1999; Poppo & Zenger, 1998), but rather examine whether organizational forms align with the attributes of transactions. TCE provides “rational economic reasons” for crafting the governance mechanism (Williamson, 1985: 52) as transaction are different in its attributes and aligned with governance mode in a discriminating way, meaning that any mode of governance that minimize the transaction costs become preferred over other modes. TCE is based on five assumptions: (a) bounded rationality, (b) opportunism, (c) specific investments, (d) uncertainty, and (e) transaction frequency. The first two assumptions pertain to human behaviors. The latter three are the primary transaction attributes. Among transaction attributes, the specific investments or asset specificity is the most frequently considered as determinant (independent variable) for mode of governance in many studies (David & Han, 2004).

##### **3.3.4.1. Bounded rationality**

The first TCE assumption, bounded rationality refers to the extent to which decision maker has constrains on his/her cognitive capabilities and limits on his/her rationality. Although firm managers do their best to act rational, they have limited capabilities to predict and handle very complex situations.

Rationality is generally used as a concept in the field of microeconomics. Rationality expectation is based on three assumptions (Wassås, 2004). First, when manager makes his/her decision, he/she has to consider all data available. Second, manager totally

understands the reality and circumstances of the exchange. Lastly, manager predicts to what extent the exchange would affect the future relation.

#### **3.3.4.2. Opportunism**

The second TCE assumption is the opportunism whose definition is “self-interest seeking with guile” (Williamson, 1985: 47), such as “cheating, shirking, distorting information, misleading partners, providing substandard products/services, and appropriating partners’ critical resources” (Das & Teng, 1998: 492). However, opportunism does not include other forms of self-interest seeking, such as hard bargaining, intense or frequent disagreement, and similar conflictual behaviors (John, 1984).

Originally, opportunism behavior shows the differences of interest between dealers and public (Wassås, 2004). Williamson (1985), further, narrows it to the business aspect as managers seek to serve their self-interests. A firm acts opportunistically to raise its unilaterally short-term gains which subsequently hinder the long-term gains potentially accruing to both parties. Opportunism is typically measured as constant. Not all managers act opportunistic but it is impossible to know who would act. We only know that there is a risk of it. For this reason, the normative goal of TEC is to prevent, or at least minimize, the impact of opportunism.

#### **3.3.4.3. Specific investments**

Specific investments or asset specificity refers to the degree to which the assets that are tailored to a given transaction and cannot be redeployed easily to “alternative uses and by alternative users without sacrifice of productive value” (Williamson, 1991b: 282). For example, investments in buildings, equipment, learning, and/or brand name capital that is specific to a particular relationship.

Specific investments create dependency relationship and switching costs because such investments have little or no value outside the relationship (Barney & Ouchi, 1986). It, consequently, gives rise to a safeguarding problem. As asset specificity increases,

redeployability decreases, increasing bilateral dependency and contracting hazards between parties (David & Han, 2004). TCE predicts that market governance hinder the adaptability among transacting parties because market competition will not restrain opportunistic exploitation (Geyskens et al., 2006).

TCE suggest that the occurrence of specific investments transforms a governance arrangement from classical contracting which the identity of parties is irrelevant into neoclassical contracting which the identity of exchange partners is important (Williamson, 1991b). Transactions with high specific investments are prone to go for more integrated form of governance, hierarchical governance.

However, bureaucratic costs increase as parties become more integrated but these costs will be offset by the gains from bilateral adaptation obtained from the new form.

In short, TCE predicts that transaction whose specific investments are present to a nontrivial degree will be controlled under hierarchical governance, those to an intermediate degree under hybrids, and those to a trivial degree under markets.

Williamson (1985) identifies three forms of specific investments (or asset specificity) which are site specificity, physical asset specificity, and human asset specificity. However, prior research includes dedicated assets to group asset that does not belong to the first three forms.

#### **3.3.4.3.1. *Site specificity***

Site specificity refers to the situation whereby successive production stages that are immobile in nature are located close to one another. Dyer (1996a) suggest that site-specific investments can make cost reduction substantially in transportation and inventory and can also lower the cost of coordinating activities.

#### **3.3.4.3.2. *Physical asset specificity***

Physical asset specificity refers to transaction-specific investments that tailor processes or operations to particular exchange partners, such as customized machinery. Physical asset specificity leads to product differentiation and may improve quality by increasing the degree of product fit or integrity (Clark & Fujimoto, 1991; Nishiguchi, 1994).

#### **3.3.4.3.3. *Human asset specificity***

Human asset specificity refers to transaction-specific know-how accumulated by transaction makers through long-standing relationship (Dyer & Singh, 1998). For example, dedicated computer programmers from supplier firms who learn customer systems are dedicated human asset specificity that supplier firms invest. As exchange partners work together, they accumulate specialized information, language, and know-how. Moreover, they can make more efficient and effective communication, reducing communication errors and delivery time and enhancing quality (Asanuma, 1989; Dyer, 1996a).

#### **3.3.4.3.4. *Dedicated asset specificity***

Dedicated assets refers to transaction-specific investments that are not site, physical, or human asset specificity, for example, the idiosyncratic investments in brand name capital. This transaction dimension has received limited attention in extant literature.

#### **3.3.4.4. *Uncertainty***

The second transaction dimension, uncertainty is a property of the environment where exchange takes place. It occurs either when (a) the relevant contingencies are too unpredictable to be specified ex ante in a contract – i.e., environmental or external uncertainty or (b) performance evaluation problem exists. Exchange partners are not certain whether contractual compliance has been taken place – i.e., behavioral or internal uncertainty (Alchian & Demsetz, 1972).

#### **3.3.4.4.1. *Conditional effect of uncertainty***

The effect of uncertainty on the choice of governance mode is conditional. The original TCE suggests that the association between uncertainty and specific investments is the key determinant of governance choice, rather than the individual variable. When specific investments is present at a trivial degree, market governance should be employed whatever degree of uncertainty because continuity between exchange partners matters little and new transaction arrangements can be easily arranged if necessary (Williamson, 1985: 59).

When asset specificity is present at a non-trivial degree, the continuity of exchange partners becomes important, and adaptive capabilities become necessary. Therefore, in the presence of specific investments, increases in uncertainty render market governance subject to an adaptation problem and increase the attraction of hierarchical and hybrid governance (Williamson, 1985: 79). However, when the uncertainty is present at the high degree, the high uncertainty renders both market and hierarchical governance to hybrid governance because, at that degree of uncertainty, hybrid adaptations require mutual consent (Williamson, 1991b). It cannot be made unilaterally (as with market governance) or by fiat (as with hierarchy).

#### **3.3.4.4.2. *Environmental uncertainty***

The first form of uncertainty, environmental or external uncertainty occurs when the relevant contingencies surrounding an exchange are too unpredictable to be specified ex ante in a contract.

The occurrence of environmental uncertainty may cause an adaptation problem that is difficulties in adjusting agreements, raising transaction costs. Given bounded rationality, high environmental uncertainty precludes the writing and enforcement of contingent claims contracts that specify every eventuality and consequent response. It allows negative information asymmetry to occur and provides the potential for exchange partner to act opportunistically. Therefore, transaction costs are likely to be high under high degree of environmental uncertainty. Such problem, as TCE originally suggests, can be addressed through hierarchical governance because internalization may facilitate an adaptive and

sequential decision process that can confront a dynamic and complex environment. Parties in hierarchies resolve disputes internally, rather than relying of the courts.

This general TCE tenet has received some degree of support in empirical research. For example, Anderson (1985) proves that the difficulty on evaluation the salesperson performance is positively related to the employment of a firm-owned sales force. John and Weitz (1988) show that the difficulty on evaluation the downstream performance is positively related to the adoption of integrated channels.

Despite the original TCE tenet that specific investments and uncertainty shift market exchange toward hierarchical governance, many researchers argue that high degree of environmental uncertainty also encourages firms to maintain flexibility, which is contradictory to the characteristics of hierarchical governance. For example, Klein (1989) mentions that the concept of uncertainty is very broad. Different of its facets lead to both a desire of flexibility (market governance) and motivation to reduce transaction costs (Hierarchy). Similarly, Shervani et al. (2007) find that external uncertainty overall exhibits a strong negative relationship with forward channel integration.

Walker and Weber's (1984) influential classification on environmental uncertainty provides good explication on this concept. They distinguish and identify two types of environmental uncertainty: volume uncertainty and technological uncertainty.

#### **3.3.4.4.2.1. Volume uncertainty**

Volume uncertainty is defined as the inability to accurately forecast the volume requirements in a relationship (Walker and Weber, 1984). When volume uncertainty occurs, the supplying partners may incur the problems of excess capacity or unexpected production costs, and buying partners may face the stock-outs or excess inventory. Such problems can be addressed more efficiently if exchange partners coordinate variations in a hierarchically organized production stream. Volume uncertainty, therefore, increases the likelihood of hierarchical over market governance.

#### **3.3.4.4.2. Technological uncertainty**

Technological uncertainty is defined as the inability to accurately forecast the technological requirements in a relationship (Walker and Weber, 1984). This type of uncertainty is caused by the unpredictable changes in the standards or specifications of technology. When technological uncertainty occurs, by relying on market governance, firms should terminate the existing relationship and switch to the new exchange partners who have more appropriate technological capabilities (Balakrishnan and Wernerfelt, 1986).

#### **3.3.4.4.3. Behavioral uncertainty**

The second form of uncertainty, behavioral or internal uncertainty is a problem of a performance evaluation or difficulty in ensuring ex post whether contractual compliance is taken place (Geyskens et al., 2006). TCE suggests that by adopting hierarchical governance firms can address the problem caused by behavioral uncertainty because internal organization provides firms a greater degree of control which is assumed to embody greater evaluation capabilities.

#### **3.3.4.5. Transaction frequency**

The last transaction dimension suggested by TCE is transaction frequency that refers to the extent to which transaction recur. TCE suggests that when asset-specific transaction recurs, it requires constant monitoring effort. Overhead cost of hierarchical governance will be easier to recover than the one of market governance. Therefore, in the presence of specific investments, transaction frequency pushes transactions away from market into hierarchy. Transaction frequency has received limited attention in the TCE as Geyskens et al. (2006) note that they did not include transaction frequency in their meta-analysis because of the lack of research including the construct of transaction frequency.



### 3.4. Relational contracting theory

As mentioned in the beginning of this chapter that in this research proposal I focus only two main perspectives of IG – i.e., TCE and RCT. In this sub-chapter relational contracting theory or RCT will be delineated.

Macneil (1978, 1980) propose relational contracting theory (hereafter, RCT), characterizing the buyer-supplier relationship and built in part on Macaulay's 1963 study on non-contractual relations. RCT views IR on a continuum from discrete transactions to relational exchange. Therefore, IR varies by extent of bonding.

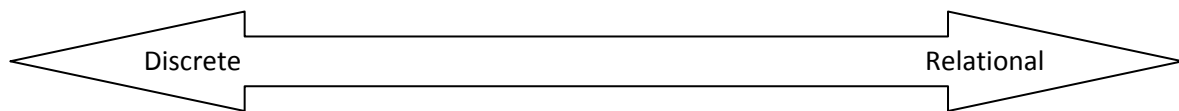


Figure 3.2. The continuum of exchange and mode of governance (Macneil, 1978, 1980)

#### 3.4.1. Discrete exchange

Consistent with the assumptions of neoclassical economic theory, under discrete exchange individual transactions are assumed to (a) be independent of past and future relations between exchange partners, and (b) constitute nothing more than the transfer of ownership to products or services (Goldberg, 1976). Discrete transactions, thus, are characterized by minimal personal relationship, very limited communications, and narrow content. Discrete exchange normally is between two partners whose identity must be ignored. Complete transferability can be made, meaning that rights, obligations, and satisfactions can be transferred to other parties.

Exchange partners under discrete exchange remain autonomous and maintain desire to reach their goal vigorously. As a result, conflicts of interest and little unity are expected. They use economic and legal sanctions to enforce contractual obligations. However, power may be exercised since promises are made until they are executed.

Basically, discrete exchange appears when products or service performances are obvious and can be easily evaluated and carted away. Exchange partners can pay little attention to measurement and specifications. Payment normally is made cash (Dwyer et al., 1987).

### **3.4.2. Relational exchange**

Relational exchange, in contrast with discrete transactions, refers to an exchange that occurs over time, reflecting an ongoing process. Each Individual transaction must be viewed in terms of its history and anticipated future. Generally, more than two exchange partners involve in the exchange; and they can be expected to obtain complex, personal, and noneconomic satisfactions and engage in social exchange.

#### **3.4.2.1. Occurrence of relational exchange**

Relational exchange starts to appear when dependence is extended, performance is not easy to evaluate, uncertainty leads to deeper communication, the rudiments of cooperative planning and anticipation of conflict arise, and expectations of trustworthiness may be cued by personal characteristics. For example a buyer pays by check or seller schedules delivery for next week (Dwyer et al., 1987).

#### **3.4.2.2. Explication of relational exchange**

Since relational governance is a non-judicial mechanism, it is not easily legally enforceable but it operates as a self-enforcing safeguard by many informal and diverse components, such as mutual dependence, trust, and norms.

Relational mechanisms can be explicated through two perspectives: economic and sociological. Economist emphasizes the rational or calculative origins of relational governance which is that exchange partners expect the payoffs from the future and are motivated to deliver present cooperation (Axelrod, 1984). In other words, the value of a

future relationship is sufficiently large that neither party wishes to renege (Telser, 1980). The expected pay-offs from a pattern of future exchange discourage the pursuit of short-run gains that deteriorate the longevity of the relationship (Poppo & Zenger, 2002).

Sociologist emphasizes relational norms generated in a historical and social context in which transactions take place between highly committed exchange partners (Uzzi, 1997). Norms are designed to enhance the well-being of the relationship as a whole (Dwyer et al., 1987; Heide & John, 1992; Kaufmann & Stern, 1988). The acceptance of norms by all exchange parties and the harmonization with the fundamental values of the society are required to render norms (Cannon et al., 2000).

### **3.4.2.3. Relational norms**

Macneil (1980, 1983) proposes identifies and discuss a total of twenty eight norms that “govern” a relationship. These norms partially overlap and have been reduced by researchers to between three to seven contractual norms (Cannon et al., 2000; Gundlach, Achrol, & Mentzer, 1995; Kaufmann & Stern 1988; Noordewier et al., 1990). In this research proposal I mainly follow Cannon et al. (2000) who reduce to a core set of five norms that particularly relevant: (a) flexibility, (b) solidarity, (c) mutuality, (d) harmonization of conflict, and (e) restraint in the use of power. I conclude that the literature on relational norms is divided, and chose to follow the acknowledged work by Cannon et al. (2000), Heide and John (1992), and Poppo and Zenger (2002). Therefore, in asymmetric power relationship, the following norms should be of utmost importance according to literature:

*Flexibility:* The attitude among parties that an agreement could be modified as the market, the exchange relationship, and the fortunes of the parties evolve and develop (Cannon et al., 2000). Therefore, flexibility provides adaptation to unforeseeable future events (Poppo & Zenger, 2002)

*Solidarity:* The attitude that success comes from working cooperatively together, not competing against one another. It dictates that parties stand by one another in the face of adversity and the ups and downs of marketplace competition (Cannon et al., 2000).

“Solidarity promotes a bilateral approach to problem solving, creating a commitment to joint action through mutual adjustment.” (Poppo and Zenger, 2002: 710).

*Mutuality*: The attitude that a party cannot succeed on the cost of its partner. Each party’s success is a function of everyone’s success and that one cannot prosper at the expense of one’s partner. Success depends on joint responsibility. (Cannon et al., 2000)

*Harmonization of conflict*: The attitude that conflicts are solved in the spirit of mutual accommodation toward cooperative ends (Cannon et al., 2000). Conflicts and unforeseen contingencies will be handled in good faith.

*Restraint in the use of power*: The attitude that power asymmetry and dependency should not be opportunistically exploited. It reflects the view that the use of power exacerbates conflict over time and undermines mutuality and solidarity, leading to opportunism (Cannon et al., 2000).

#### **3.4.2.4. Criticism of TCE’s forms of governance**

Although TCE’s alternative forms of governance are widely recognized, TCE has been subject to criticism. Researchers argue that TCE traditionally describes departures from market-based exchange to hierarchical governance. It, most obviously, overstates the exchange partners’ desirability of integration and of explicit contractual safeguards to protect against transaction hazards (Poppo & Zenger, 2002). Moreover, it overemphasizes the ability of hierarchical governance to govern relationships (Maitland et al., 1985) and fails to account for the social structures within which exchange is embedded (Granovetter, 1985). RCT, therefore, introduce that the departures from market governance – i.e., discrete exchange, is the establishment of relational governance as Macneil (1980: 159) mentions “contract without the common needs and tastes created by society is inconceivable [...] and contract without social structure is – quite literally – rationally unthinkable.”

### **3.4.2.5. Incorporating relational governance into TCE framework**

Recent research on transaction cost analysis incorporates relational governance into transaction cost theory's explanation framework (Geyskens et al., 2006). When specific investments are present to a non-trivial degree, relational governance should be preferred over market governance. However, Williamson (1991) argues that relational governance addresses problem of uncertainty less effectively than market governance because relational adaptations cannot make unilaterally but market adaptations can. Relational adaptations need mutual consent that takes time to acquire, which may not be in supply in uncertain environments.

However, Poppo and Zenger (2002) suggest that relational governance does not replace market or hierarchy but it functions as complements. They propose that when exchange hazards are present to a high degree, the combination of formal and informal safeguards may provide greater exchange performance than exclusive reliance on one governance form. Formal safeguards in their proposal are clearly articulated contractual terms, remedies, and processes of dispute resolution; and informal safeguards are relational norms of flexibility, solidarity, bilateralism, and continuance.

Poppo and Zenger's (2002) logic is that exchanges in the early stages are more vulnerable, exchanges need formal contracts to ensure the success through formal specification of a long-term commitment and clearly articulated clauses that specify punishments to limit the gains from opportunistic actions. The collaboration in the present then helps to build cooperation in the future. The process of developing complex contracts requires exchange partners to make a mutual determination, promoting expectations of cooperation and developing relational governance. In addition, all exchange dimensions prove impossible to contractually specify. When change and conflict arise, relational governance becomes a necessary complement to the adaptive limits of contracts (Macneil, 1978). Specifically, the relational norm of solidarity foster exchange into the future because with this norm exchange partners have a "keep on with it" attitude, making partners to be mutually dependent. Therefore, as the contracts become highly customized, relational governance increase the continuance and safeguard specific investments from premature and costly termination.

### **3.5. Plural form of governance**

#### **3.5.1. What is plural form?**

The TCE's presumption that governance continuum runs from markets to hierarchies seems to be misleading because these approaches rest on the premise that market and hierarchy are independent and mutually exclusive means to control the industries. Bradach and Eccles (1989) prove that firms simultaneously employ distinct governance forms for the same function - i.e., the plural form. They suggest that modes of governance can be combined in a variety of ways, such as market and trust are sometimes integrated to govern transactions between partner firms, while franchises (market) and company-own (hierarchy) units are operated under the same trademark.

Bradach and Eccles (1989) show that franchising system is an excellent example of the plural forms. In general franchising systems are composed of company-own units and franchised units. Hierarchical governance is employed in company-own units. However, the market governance shows some of its elements due to the profit centers and management incentive programs. On the contrary, franchised units employ the market governance as the independent franchisees sign the long-term contracts with the franchisers. However, franchisees are not fully independent entrepreneurs since hierarchical governance shows itself in many activities since franchisers identify in great detail the manner how franchise is to be operated in order to protect the brand value.

#### **3.5.2. Why do firms employ plural form?**

Prior empirical findings suggest that firms may inhibit opportunism and attain cost advantage from employing plural forms. For example, Walker and Weber (1984) suggest that buy with experience in production may be able have the cost advantage over the supplier because such buyer has better information about the manufacturing. Supplier is, therefore, less able to engage in opportunistic bargaining. Similarly, Harrigan (1984) shows that firms with backward or forward integration that also rely on outsourcing for a portion of their suppliers or distribution can balance economies of scale in the value chain and

reduce their vulnerabilities to strikes and shortages. Harrigan calls this organizational form as “taper integration.”

Heide (2003) examines the phenomenon of plural governance in industrial purchasing and suggest that a plural governance strategy might solve problems of asymmetric information – i.e., adverse selection and moral hazard. A firm manages its procurement task through market governance in order to exploit the cost advantage of external specialists and concentrate on its core competencies (e.g., Quinn & Hilmer, 1994). Simultaneously, exclusive reliance on market governance may give rise to problems of asymmetric information that one exchange party is better informed than the other about aspects of the exchange (MacMillan, 1990). Reliance on both market contracting and vertical integration simultaneously,

### ***3.6. Empirical findings***

What have empirical literatures in TCE and RCT found? Regarding TCE, there was significant variation in support for its predictions (David & Han, 2004). Some literatures empirically support for TCE tenets, while others do not. Given TCE support is mixed, some empirical studies focus on scope conditions or moderating variables that affect TCE tenets. Regarding RCT, much research incorporates relational governance into TCE. Reviews of example literatures are grouped and provided below.

#### ***3.6.1. Empirically support regarding specific investments***

Buvik and Grønhaug (2000) empirically explore the effects of inter-firm dependence and environmental uncertainty on vertical co-ordination in industrial purchasing relationships between manufacturing firms and their suppliers. Buvik and Grønhaug (2000) show that when specific investments that supplying firms made are modest, the safeguarding problem is trivial and substantial environmental uncertainty leads to higher inter-firm co-ordination in order to handle the need for environmental adaptation. As specific investments become substantial, their findings show that the interaction effect of specific investments and

environmental uncertainty on vertical co-ordination is negative. This means that when substantial specific investments and high environmental uncertainty are present simultaneously, hybrid relationship is a less appropriate safeguarding arrangement.

### ***3.6.2. Empirically support regarding uncertainty***

Walker and Weber (1987) focus on make-or-buy decisions made by managers in a large U.S. automobile firm for components. They define two types of uncertainty – i.e., change in volume and change in product specification. Their empirical analysis suggests that when market competition is low, adjustment costs for suppliers in response to changes in volume requirement raise transaction costs, influencing a buyer to make rather than buy, consistent with the TCE tenet. In contrast, adjustment costs in response to change in product specifications do not increase contracting costs when competition is strong, leading a buyer to buy rather than make. For the latter case, Walker and Weber (1987) argue that the distinction between the two effects may be due to the simplicity of the context that components produced are not complex.

### ***3.6.3. Empirically non-support regarding specific investments***

Klein, Frazier, and Roth (1990) conduct an empirical study focusing on channel integration decision in foreign markets of Canadian export firms. In fact, this study is the first in which a model based on TCE has been applied within distribution channels in international markets. Empirical findings show the variation in support for TCE tenet regarding specific investment. Results suggest that specific investments are necessary to facilitate marketing activities in foreign countries. Market governance has limited ability to handle opportunistic tendencies of outside intermediaries. Hierarchical governance is, therefore, likely to be preferred because legitimate authority, including monitoring of behaviors and offering various incentives, can manage the opportunism. These findings are consistent with TCE tenet. However, in this empirical research, specific investments do not distinguish the use of intermediate exchange – i.e., hybrid governance, from the use of either market or



hierarchical exchange. A firm may believe it can maintain control of channel and associated transaction costs irrespective of the levels of specific investments.

#### ***3.6.4. Empirically non-support regarding uncertainty***

Russo (1992) empirical studies the extent to which regulation would influence a firm on diversification and integration in the US upstream electric generating industry during 1974 - 1986. In this study uncertainty is the changes in regulatory monitoring. Results suggest that the threat associated with increases in regulatory monitoring lead to decreases in backward integration but increases in diversification, since electric generating firms remove their presence in the threatened domain. Analysis from this empirical research is in the opposite direction of TCE tenet.

#### ***3.6.5. Empirically study the scope condition and moderating effect***

Coles and Hesterly (1998) examine the impact of uncertainty and its interaction with specific investments in determining make or buy decision in the context of service industry. Their findings are variation in support for TCE and suggest that TCE predictions are subject to contextual factors. In private hospital TCE are supported as the presence of specific human assets increase, uncertainty will induce firms to integrate hospital services. However, TCE provide less power in explaining make or buy decisions in public hospitals, since public organizations likely subject to less severe efficiency pressure, having different incentive than private organizations operating in the same market.

Shervani et al. (2007) raise a question whether TCE framework is equally appropriate for all types of firms in all business settings and conduct an empirical research in manufacturer-distributor relationship in the context of electronic and telecommunications industry where manufacturer are firms with high market power. Analysis suggests that firms with high market power may be able to lower transaction costs although they make high specific investments under high uncertainty in non-integrated distribution channels because such firms are likely to have significant monitoring and surveillance capabilities as well as the

ability to exercise legitimate authority and offer various incentives. On the contrary, firms with low power do not such capabilities. Such firms, therefore, need to conduct highly integrated forward channel.

### **3.6.6. Empirically incorporate relational governance into TCE**

Artz and Brush (2000) whose literature draws on TCE and relational exchange theories examine the determinants of the cost of coordinating exchange between buyers and suppliers who rely on relational contracting. Their empirical analysis supports the TCE tenet that that specific investments and environmental uncertainty increase coordination costs. In addition, their study empirically finds that relational norms, including collaboration, continuity expectations, and non-coercive communications, lower the effect of specific investments on negotiation costs, since such norms play a significant role in the maintenance of purchasing alliances.

### **3.7. Summary**

Inter-organizational governance has been the focus of this chapter. In the first part I introduce that governance provides different business challenges from those conventional organization, causing it to become an interesting topic for both managers and academics. Then I explain its occurrence and definition. Governance is a mode of organizing transactions, involving initiation, ongoing IR maintenance, and termination.

Next, two main perspectives on governance, TCE and RCT are introduced. They make different assumptions about the nature of governance and propose choices of governance mechanism. First, TCE proposes governance in term of designing particular mechanisms supporting economic transactions. Three TCE governance forms are market, hierarchical, and hybrid exchanges. Market governance is based on price mechanism, while hierarchical governance is characterized by a unified authority structure. Hybrid exchange situates in between the market-hierarchy exchange continuum. Firms choose governance form that provides performance advantages over other forms – i.e., minimizing transaction costs.

However, transaction costs are very difficult to measure directly, since they represent potential consequences of alternative decisions. TCE propose to test whether organizational relations align with transaction dimensions, including specific investments, uncertainty, and frequency. Core tenets of TCE predict that as specific investments increases, transaction costs associated with markets increase, hybrids and hierarchies become preferred over markets; at high degree of specific investments, hierarchy becomes preferred form. When specific investments are present to a non-trivial degree, increasing uncertainty renders hybrids preferable to markets and hierarchies preferable to both hybrids and markets.

Second, RCT suggests a typology of discrete and relational exchange. Individual transactions in discrete exchange are independent of past and future relationship of exchange partners, while relational exchange accounts explicitly for historical and social context. Relational governance operates as a self-enforcing safeguard by many informal and diverse components, such as mutual dependence, trust, and norms. Economist suggests that present cooperation between exchange partners are motivated by the expectation of payoffs from the future, while sociologist argues that relational norms take place between highly committed exchange partners.

Then I proceed to the criticisms of TCE's forms of governance and the incorporating of relational governance into TCE framework. TCE overemphasizes the ability of hierarchical governance to govern relationships, recent research on transaction cost analysis incorporate relational governance into transaction cost theory's explanation framework, either as a replacement of hierarchical form or as a complement.

Given distinctive characteristics of each governance form, firms may employ the multiple and distinct types of governance for the same function – i.e., plural forms, which may inhibit opportunism and attain cost advantage.

I ended the chapter with empirical findings in the discipline of TCE and RCT. There was significant variation in support for TCE prediction. For example, Buvik and Grønhaug's (2000) analysis support for its prediction as specific investments lead to greater coordination between buyers and sellers of industrial goods, while Klein's et al. (1990) empirical findings do not support for TCE tenets regarding specific investments that lead to the use of hybrid

over market and hierarchy over hybrid. Given TCE support is mixed, some empirical studies focus on moderating variables that affect TCE tenets. For example, Coles and Hesterly (1998) find different results in public and private hospitals. Consistently, Shervani et al. (2007) find that TCE tenets are better at explaining forward channel integration for firm with low market power than for firm with high market power.

## **4. Inter-organizational power**

### **4.1. Introduction**

Inter-organizational power and its use play pivotal roles in the management of IR. It operates closely with bargaining process in the exploration and expansion phase of IR development framework (Dwyer, Schurr, & Oh et al., 1987). Power is brought to bear in bargaining, both in the exploration phase and in day-to-day commitment, in the hope that concessions of resources, which exchange partners require, will be granted or obtained. However, exercise of unjust power source may lead other exchange partner to terminate the association when interdependencies are minimal. Indeed, the affect of power is a crucial topic for both managers and academics. The purpose of this chapter is, therefore, to explore the extant studies in this field.

### **4.2. What is power?**

Power is not an attribute of the actor but a property of the social relation (Emerson, 1962). Dependence and power “rests on the extent to which B is dependent on A for valued resources” (Dwyer, 1984:682). A firm has power over its exchange partner when its exchange partner perceives that a firm has expertise, information, attractiveness, a right to prescribe an exchange partner’s behavior, or the ability to mediate punishments and rewards for an exchange partner (e.g. French & Raven, 1959; Gaski, 1986; Gaski & Nevin, 1985; Scheer & Stern, 1992; Wilkinson, 1979). In other words, its exchange partner is dependent on a firm when a firm possesses valued resources, such as capitals, products, services, information, or status (Dwyer et al., 1987; Scheer and Stern, 1992) that create its exchange partner rewards and benefits that are not easily replaced; the exchange partner is dependent on the firm (Emerson, 1962). As a result, a firm obtains power by possessing and controlling of resources that are valued to its exchange partner (Patchen, 1974; Tjosvold, Johnson, & Johnson, 1984).

### **4.3. Occurrence of power exercise**

When power is exercised in IR? The answer to this question can be taken from IR development process. Dywer et al. (1987) explicate IR develop process into five general phases: (1) awareness, (2) exploration, (3) expansion, (4) commitment, and (5) dissolution. Power exercise is a sub-phase in the exploration process. After a firm recognizes that there is a feasible exchange partner, as in the first phase, a relationship enters the exploration phase as a firm considers all aspects of exchange, including benefits, obligations, burdens, and possibility. This exploration phase is conceptualized in five sub-phases: (1) attraction, (2) communication and bargaining, (3) development and exercise power, (4) norm development, and (5) expectation development. After buyer and seller achieve a reward-cost outcome in excess of some minimum level in the attraction sub-phase, relationship enter the second and third sub-phase simultaneously, since bargaining and power exercise are adjoining processes. Exchange partners rearrange their mutual distributions of obligations, benefits, and burdens. Power is brought to bear in bargaining in order to obtain the concessions.

### **4.4. Composition of power**

Pfeffer and Salancik (1978) demonstrate the composition of power “First, there is the importance of the resource, the extent to which the organization requires it, ... second is the extent to which [the other party]...has discretion over the resource..., and third, the extent to which there are few alternatives...”.

### **4.5. Scale of power**

Heide and John (1988) suggest four means that power or dependence is increased. First, the dependence is suggested to be increased if the outcomes obtained from a relationship are important or highly valued or if the exchange magnitude itself is high – i.e., a firm provides a large fraction of an exchange partner’s business. This means is consistent with the “sales and profit” approach developed by El-Ansary and Stern (1972). In this approach, the greater

the percentage of sales and profit contributed by a firm, the greater an exchange partner's dependence on a firm. Many extant studies use the importance and/or magnitude of exchange explaining the dependence between firms (e.g., Dickson, 1983; El-Ansary & Stern, 1972; Etgar, 1976; Pfeffer & Salancik, 1978).

Second, if outcomes obtained from relationship are higher or better than outcomes obtained from alternative relationships, the dependence is suggested to be increased. Prior studies use the role performance and/or comparison of outcome levels as the basis of dependence (e.g. Anderson & Narus, 1984; Frazier, 1983b). Role performance, developed by Frazier (1983a), refers to how well a firm fulfills its role in a relationship with its exchange partner.

Third, the dependence is suggested to be increased if there are fewer alternative exchange sources. The concentration of exchange and/or the fraction of business done with a particular exchange partner is used in previous empirical and conceptual studies (e.g., Dickson, 1983; El-Ansary & Stern, 1972; Etgar, 1976; Pfeffer & Salancik, 1978).

Fourth, if there are fewer potential alternative sources of exchange available for replacing an exchange partner, make it difficult for a firm substitute its exchange partner. The dependence is, therefore, suggested to be increased. Prior empirical studies use the replaceability of the incumbent exchange partner a measure of the dependence (e.g., El-Ansary & Stern, 1972; Brown, Lusch, & Muehling, 1983; Buchanan, 1986; Etgar, 1976; Phillips, 1981).

#### **4.6. Power base**

Extant researches on power share the French and Raven's (1959) bases of power typology. According to this view, power is identified in six forms: reward power, coercive power, legitimate power, referent power, expert power, and information power. Each power base is defined as its ability on bringing tangible or intangible consequences into use for a target. It is noteworthy that power base can also be divided into coercive and non-coercive power where non-coercion includes all forms except coercive power.

#### **4.6.1. Reward power**

Reward power refers to the granting of consequences that a receiving firm considers as desirable, or relief which is the withdrawal of consequences that a receiving firm considers as aversive. Using non-coercive power may take considerable time to implement effectively (Frazier & Summers, 1984; Kasulis & Spekman, 1980). A firm which uses the non-coercive power can expect the return of the use of non-coercive power from its exchange partners, contributing the supportive exchange atmosphere (Frazier & Rody, 1991).

#### **4.6.2. Coercive power**

On the contrary, coercive power or punitive power refers to the granting of aversive consequences, or penalty, as well as the withdrawal of desirable consequences (Hinkin & Schriesheim, 1989; Woods, 1974). To possess punitive power a firm might possess destruct resources that can create wound to an exchange partner (Molm, 1989). When a firm intentionally inflicts damaging consequences on its exchange partner such act is defined as punitive action (Gaski & Nevin, 1985; Lusch, 1976). Kumar, Scheer, & Steenkamp (1998:226) dissect punitive action and use the term “punitive capability” to explain the firm’s ability and willingness to deliver negative consequences to an exchange partner. Firm might develop its punitive capability by investing in the systems that control the withdrawal of valued resources and/or exercising of destruct resources and having the will to deliver negative consequences to an exchange partner.

#### **4.6.3. Legitimate power**

Legitimate power occurs when an exchange partner is perceived to have a right – i.e., legitimate right, to influence its partner who is obligated to comply with this influence. There, usually, may not be any direct consequence granting involved. Legitimate power in IR can be divided into two types: traditional legitimate and legal legitimate (Kasulis & Spekman, 1980). The former refers to the perceived hierarchies within IR where larger firms may be felt to have legitimate power and consequently can influence certain policies (Stern & El-Ansary, 1977). The legal legitimate power is based on contractual agreements that all



exchange partners made for govern their exchange, such as franchising agreements between franchisor and its franchisees (Stern & El-Ansar, 1977).

#### **4.6.4. Referent power**

Reference power is based on exchange partner's desire to be closely associated with its partner. Some exchange partners pride themselves on being associated with certain firms or brands. Such exchange partners are willing to be influenced by its partners.

#### **4.6.5. Expert power**

Expert power occurs when a firm perceives that its exchange partner is knowledgeable about a certain area and allows its exchange partner to influence its decision and behaviors.

#### **4.6.6. Information power**

A firm has information power over its exchange partner when it has the ability to (a) provide information that previously unavailable to its exchange partner, and (b) interpret existing information to be meaningful but not yet known by its exchange partner (Raven & Kruglanski, 1970).

#### **4.7. Contingency of power effect**

Positive and negative effects can be delivered either contingently or non-contingently. For a contingent influence, a firm promises or threatens to signal explicitly that it mediates positive or negative consequences that it will grant or withhold contingently after an exchange partner's behavioral response. For non-contingent influence, a firm mediates consequences for an exchange partners but it grants those consequences unilaterally in the hope that an exchange partner will subsequently behave which is sought by a firm. A firm exercises resources before an exchange partner's compliance (Scheer & Stern, 1992).

#### **4.8. Power asymmetry**

Total power is the sum of both exchange partners' power while power asymmetry is the difference between both exchange partners' power; both affect behavior and attitude (Bacharach & Lawler, 1981; Lawler, 1986). In this research proposal, asymmetric power is paid particular attention. Bilateral deterrence theory, a sociological theory, seems to well explain effects of interdependence between exchange partners. It views relationship with asymmetric power as unstable, consistent with many research findings that proves asymmetric relationships to be less stable and less beneficial than symmetric one (e.g., Buchanan, 1992; Kumar, Scheer, & Steenkamp, 1995).

A firm with relatively high power is expected to exploit its exchange partner by frequently using coercive power (Bannister, 1969; Robicheaux & El-Ansary, 1975). A firm with relatively low power due to lacking alternatives and status is prone to have high tolerance for the use of coercive power by its exchange partner and to have minor equity concerns; a relatively low power firm, therefore, does not, or barely, attempt to retaliate (Blalock & Wilkin 1979; Bucklin, 1973). In contrary, a firm with high power due to the availability of alternatives and the status levels present with the channel system has low level of tolerance for the use of coercive power (Frazier & Rody, 1991). Prior empirical studies show that the possession of power encourages a firm to act opportunistically by gaining a share of profit from an exchange unfairly (Dwyer & Walker, 1981; Frazier & Rody, 1991; Frazier, Gill, & Kale, 1989; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978).

Only a firm with relatively high power in dyadic relationship is likely to be able to utilize non-coercive strategies effectively, as it will have the prerequisite time and attention from its exchange partner, while a firm with relatively low, or lacking, power is likely to be forced to use coercive power more frequently in order to make its presence felt and demands know, although its effort might be ineffective (Emerson, 1962; Frazier & Rody, 1991).

#### **4.9. Empirical findings**

Many researchers focus on the use of power for obtaining effective coordination in inter-firm relationships. For example, Hunt and Nevin (1974) study franchising relationships and

suggest that coercive power might be used only when the use of non-coercive power fails to draw a satisfactory response, given that the cooperation in franchising relationships can be very beneficial. Consistently with the findings of Frazier and Summers (1986) that in franchising relationships the use of manufacturer's power is related positively to the non-coercive power and related inversely to the coercive power. When coercive power is used, it means that there should be inter-firm incompatibility which is highlighted in such condition. If the coercive strategy is used frequently in the inter-firm relationships, the shared beliefs between exchange partners should be relatively low (Etgar, 1979; Gaski & Nevin, 1985; John, 1984). Moreover, the frequency use of coercive power is likely to promote competitive behaviors which each firm strives to gain at the expense of the other (Schurr & Ozanne, 1985). In contrast, when non-coercive power is used heavily in relationships, a firm is likely to perceive its exchange partner as being accommodative, responsive to its concerns, and willing to work toward solutions to problems (Frazier & Rody, 1991). In-depth reviews of each example mentioned above are provided as follows.

Hunt and Nevin (1974) empirically investigate on the relations between power and the source of power in a distribution channel of the fast-food franchise system. Results suggest that consequences of exercising power depend on the sources of power exercised. Franchisee satisfaction increases when non-coercive sources of power are used by franchisor, while coercive sources of power reduce satisfaction. Examples of non-coercive sources in franchising context are providing higher quality assistance, site location, national and local advertising, on-the-job training, pricing assistance, product deletions and additions. The coercive sources are, for example, control of land, fairness of the contractual agreement, restriction of the right to sell the franchise, and control of building.

Frazier & Summers (1986) examine the relationships between new car dealers' perceptions about manufacturers' power and the use of coercive and non-coercive influence strategies. Results suggest that coercive strategies are used with great reluctance and only used when other influence forms have failed to produce a satisfactory response on an important issue. Two reasons explain this regard: (a) manufacturer has high power which makes dealers tend to be more congruent with manufacturer's position. Information exchange is more effective. Either coercive or non-coercive influence strategy is less needed, and (b) if needed, non-

coercive influence strategy is utilized more effectively when appropriate, avoiding the use of coercion.

Etgar's (1979) empirical study focuses on the types of causes of conflict, namely attitudinal and structural-based causes, associated with the different types of intra-channel conflict, namely affective and manifest conflicts. Results suggest between these two, attitudinal causes of conflict are the main factor generating affective and manifest conflicts. However, the use of communicative programs equipped with additional and more precise information about role expectation, goals, and future projections may substantially reduce the attitudinal conflicts.

John (1984) focuses on the opportunistic behaviors and examines their determinants in franchise relationships. Results show that opportunism can be viewed usefully as endogenous variable that is evoked by certain antecedents. Individuals may not always act opportunistically even if conditions permit such actions. Analysis suggests that power between exchange partners effects on attitudinal and opportunism. Self-reported opportunism is inhibited by a positive orientation that is attributed to expert, legitimate and referent power. On the contrary, more opportunistic behavior is induced by influence effects of rewards and coercion. Coercive and reward power use direct control outcome – i.e., rewards and punishments, to achieve effects. When coercive or reward is used, the strong external factors (rewards and punishments) reduces partner's intrinsic motivation. Exchange partner's attitude toward the interaction becomes less favorable. The degree of shared beliefs decreases, disaffection increases, and unwillingness to cooperate increase.

Gaski and Nevin (1985) investigate whether there is different effect between exercised and unexercised power source in context of distribution system of a large manufacturer of heavy industrial machinery. Results prove that exercise of coercive power source by a supplier has stronger effect on the satisfaction of dealer than the mere presence of that power source. On the contrary, exercise of the reward power source has a marginal impact.

Schurr and Ozanne (1985) focus on the effects of trust and tough/soft bargaining postures on buying behaviors and buyer-seller interactions. Experiments with M.B.A. students are used. Key findings suggest that a buy's preconception about a seller's trustworthiness moderates reactions to an expected tough bargaining stance. When a buyer believes that a

seller is untrustworthy and will adopt tough bargaining stance, a buyer-seller interaction is least favorable to seller and characterized by competitive behavior direct toward self-gain at the expenses of other party. On the contrary, high trust creates a more favorable attitude toward the current seller and source of loyalty that does low trust.

Frazier and Rody (1991) focus on the inter-organizational influence strategies used in channel relationship between suppliers and distributors of industrial products in which both the dependence and the inter-firm cooperation levels between exchange partners are moderate in magnitude due to a great number of both suppliers and distributor and limited time that each partner can devote to one another. Empirical results suggest that type of influence strategies tend to be returned in kind, supporting the basic tenets of reciprocal action theory. Tolerance for the use of coercion is likely to be low between exchange partners due to the availability of alternatives. Consequently, supportive channel atmosphere is created by the use of non-coercive strategies that encourage the use of same type of strategies by other exchange partners.

#### **4.10. Summary**

This chapter focuses on inter-organizational power whose use plays pivotal roles in the management of IR. Power has attracted the attention of both managers and academics, because it may be conducive to the concessions or resources obtaining. In this chapter, I first introduce what power is. Power is not an attribute of an actor but a property of the social relation. A firm has power over its exchange partner when its exchange partner perceives that a firm has expertise, information, attractiveness, a right to prescribe an exchange partner's behavior, or the ability to mediate punishments and rewards for an exchange partner.

I proceed to describe the occurrence of power exercise which co-occurs with bargaining after buyer and seller achieve a reward-cost outcome in excess of some minimum level. Power is brought to bear in bargaining in order to obtain the concessions. Next, I delineate the composition of power that determined by (a) the importance of resource, (b) the discretion by the party, and (c) numbers of alternatives. There are four factors increasing

power: (a) highly valued outcomes obtained from relationships, (b) better outcomes than outcomes obtained from alternative relationships, (c) fewer alternative sources, and (d) fewer potential alternative sources.

In the field of power, it is important to describe of power base which is identified in six forms: reward power, coercive power, legitimate power, referent power, expert power, and information power. Each power base is defined as its ability on bringing tangible or intangible consequences into use for a target. Furthermore, I explain the contingency of positive and negative power effect that can be delivered either contingently or non-contingently.

Total power is the sum of both partners' power, while asymmetric power is the difference between both partners' power. I pay particular attention to asymmetric power, since this research proposal focuses on the moderating effects of asymmetric power on the common relations between transaction dimension and mode of governance. Relationship with asymmetric power is less stable. A firm with relatively high power is expected to exploit its exchange partners by frequently using coercive power, while a firm with low power is prone to tolerate such coercion.

This chapter ended with empirical findings. Much research pays attention to the use of power for obtaining effective coordination, such as Frazier and Summers (1986) that in franchising relationships the use of manufacture's power is related positively to the non-coercive power and related inversely to the coercive power. When coercive power is used, it means that there should be inter-firm incompatibility which is highlighted in such condition. If the coercive strategy is used frequently in the inter-firm relationships, the shared beliefs between exchange partners should be relatively low (Etgar, 1979; Gaski & Nevin, 1985; John, 1984).

## **5. Upstream oil and gas industry**

### **5.1. Introduction**

Oil and gas (hereafter, O&G) industry is concerned with exploration and production of oil and gas field. Oil production can be divided into three forms: crude oil, condensate, and natural gas liquids (hereafter, NGL) (Hook & Aleklett, 2008). Norwegian Petroleum Directorate describes these three terms in a popularized way (“ABC of oil”, 2011). Crude oil refers to liquid petroleum from the reservoir. Most of the water and dissolved natural gas have been removed. Condensate refers to a mixture of the heaviest components of natural gas. It is fluid at normal pressure and temperature. NGL refer to a collective term for the petroleum qualities, ethane, propane, isobutane, normal butane and naphtha. NGL are partially liquid at normal pressure. They are valuable by-products indirectly generated in the natural gas processing at the centralized gas treatment plants.

Green and Keogh (2000) explain the production of O&G in brief. Offshore O&G is produced from wells drilled from seabed to reservoir and then transported to shore by pipeline or by ship. O&G is processed on a production platform which can be either a standing unit on the seabed or a floating one on the sea. Production platform is an extremely complex installation that requires complex procurements for building, involving a large number of actors (Olsen et al., 2005). Building the production platform can cost thousands of million NOK and employ many hundreds of people in design, construction and commissioning over a period of three to five years. Maintenance and modification of the production platform requires various types of products and services, such as engineering, painting, diving, catering, and medical support. Helicopters are the main transportation for people and materials to go to and come from between the platform and on-shore office.

### **5.2. Norwegian continental shelf**

Norway’s first discovery of oil and gas was in the North Sea in the early 1960s; and its first commercial production started in early 1970s (Hook & Aleklett, 2008). By the mid 1970s O&G became a crucial part of world’s economic life. Since then Norway has been a very important O&G exporter for the world, particularly after the oil crisis that the OPEC

embargo of the West in 1970s. In fact, Norway is currently the world third largest oil exporter (Alekklett, 2006) as well as the world third largest natural gas exporter (British Petroleum, 2008). In 2006 Norway is the second largest supplier of natural gas to the EU with a 21% share of EU gas imports, following Russia with 41% of EU gas imports; consequently Norwegian continental shelf (hereafter, NCS) became a potentially substantial contributor to the Norwegian economy (Kashani, 2005). In 2008, most of Norwegian gas production was exported to the UK and continental market, 97 billion cubic meters (hereafter, bcm) of 99 bcm total productions (Søderbergh's et al, 2009). In addition, the decline in gas production of EU will result in an increasing importance for future gas supplies from Norway to EU. The natural gas production within EU entered a state of decline in 2004 (IEA, 2008). In fact, the gas production of the UK, the major producer, is decreasing by 8 – 10% per year. Likewise, the gas production in the Netherlands peaked in thirty years ago and has been at a slightly declining plateau level. Denmark gas production is more likely to enter a state of decline in 2011 (Søderbergh et al., 2009).

NCS is composed of three petroleum systems: the North Sea, the Norwegian Sea, and the Barents Sea. Each system has distinctive characteristics regarding the amount of gas, environmental concerns, geographic location, and climate. Initial, O&G production first began in the North Sea and then moved northwards since the petroleum discoveries in the North Sea are becoming increasingly smaller in size (NPD, 2008). However, the North Sea is Norway's main area for production of natural gas because infrastructure is well developed, which make it possible for small discoveries can be brought on stream at relatively small investments.

At the Norwegian Sea, Norway's last large gas discovery was found in this sea and there are many other areas with potential exploration. Particularly, in the northernmost parts of the Norwegian Sea are considered to be the most interesting areas of the entire NCS. However, these areas are not open for petroleum activities. They must give precedence to fisheries, tourism, and environment over the development of the petroleum industry due to the strong opinions among the public and in the government (Søderbergh et al., 2009).



The third system, the Barents Sea is the primary frontier area and characterized by less detailed geological knowledge and significant technical challenges due to the distance to the shore, severe weather conditions, and a lack of infrastructure.

### **5.3. Inter-organizational relationship in oil and gas industry**

Firms in O&G industry can be broadly classified into three types: oil firms, their supplier firms, and their customer firms. Oil firms refer to firms whose core business is concerned with exploration and production of oil and gas. Supplier firms or vending firms are firms that provide services and/or products that enable oil firms to complete their missions, such as drilling service providers. Lastly, customers of oil firms are downstream trading partners who transport O&G to final consumers.

In general exchange in O&G industry occurs in three forms. It occurs either among oil firms themselves, between oil firms and their supplier firms, or between oil firms and customer firms. The first two forms of exchange are in upstream industry but the last one is in the downstream one.

First, an oil firm collaborates with other oil firms often occurs when a number of oil firms form a partnership or consortium for conducting O&G operation which requires large resources of capital (Kashani, 2006). One major oil firm assumes the full responsibility for development and operations of oil fields. Other partner firms act simply as investors. This relationship is known as operate by others (Ernst & Steinhubl, 1997). Second, the exchange between an oil firm and their suppliers, it is quite common and seem to be necessary since many oil firms often rely heavily to their contractors to supply many services or products needed to support their operations (Green, 2003), as Ernst and Steinhubl (1997) suggest that about seventy five percent of O&G industry's upstream capital expenditure is sourced externally. For example, oil firm may outsource the building task of a new oil platform to contractors (Olsen et al., 2005). Lastly, exchange between oil firms and their customers occurs in order to transport O&G to the market in which oil firms act as producer and their customers act as distributors (Leitzinger & Collette, 2002; Vahtra & Lorentz, 2005; Von Hirschhausen & Neumann, 2008).

IR established among firms in O&G industry can take many forms ranging from market arrangement, hierarchical governance, to hybrid form, or even toward relational governance. For example, in the industrial sourcing situation, buying of drilling fluids is characterized as a low complexity buying transaction that operator firms can buy from any vender among several in the international markets, and vice versa. The identity of exchange partners is irrelevant. No dependence exists among partners. Thus, buying of drilling fluids can take the market form of governance (Heide, 2003; Reve & Johansen, 1982). Regarding the hierarchical form of governance, Olsen et al. (2005) prove that a project alliance between the operator firm and three contractors on building and installing the topside of an oil platform industry communicates in the form of authority, while example of hybrid governance in O&G industry can be demonstrated by the long-term contractual relations between natural gas producers and wholesale buyers that is involved significant specific investments but where vertical integration is not feasible (Hirschhausen & Neumann, 2008). Regarding relational governance, Green (2003) measures the levels of goodwill trust, which refers to mutual expectations of open commitment to each other, and shows that goodwill trust between oil firms and their contractors can be used to promote operational effectiveness and create longer term changes in competitive advantage and strategic change.

#### **5.4. Inter-organizational relationship in upstream oil and gas industry**

This research pertains to the buyer-supplier exchange between oil firms and their suppliers in an upstream market. Only upstream O&G industry is therefore more delineated here. The article of Ernst and Steinhubl (1997) can be a good starting point for us to get an insight into the extent to which firms in this industry conduct their exchange. However, it must be mentioned here that Ernst and Steinhubl (1997) focus on the extent to which firms can develop their relationship more closely to each other. It can, thereby, be assumed that exchange between firms in upstream O&G can employ market arrangement or even go further to more integrated exchange – i.e., hierarchical form.

Ernst and Steinhubl (1997) dissect alliances in upstream O&G industry in North America and show that IR are very beneficial to the investors and industry per se, since it is the means to

unlock many billions of US dollars of shareholder value and generate new growth for the industry. Ernst and Steinhubl (1997) explicate five forms of alliance relevant to upstream O&G industry: (a) consolidation joint ventures, (b) alliances with specialist, (c) enhanced supplier relationships and outsourcing alliances, (d) advantaged networks of producers and suppliers, and (e) new operated-by-others relationships. The first two types and the last type of relationships are among oil firms themselves. The third type is clearly for exchange between oil firms and their supplier firms. The fourth type is similar to the third one but it goes beyond an arrangement with individual relationships, involving suppliers, service providers, and other operating firms.

#### **5.4.1. Consolidation joint ventures**

Consolidation joint ventures involve the combination of parent Oil firms' assets across a wide area of activities or rationalize overlapping oilfield assets and operations. It is expected to acquire exchange partners many benefits, such as increasing efficiency in the use of equipment and infrastructure, reducing labor costs, extending the oilfield life and increasing recoveries, increasing bargaining power with suppliers, and sharing of better operating practices. For example, since building pipelines require fixed cost, so that pipelines exhibit scale economies with respect to the amount of gas they are designed to transport. The lowest cost can be reached if a single pipe (monopoly) can serve the entire volume of a group of reservoirs with a know production capacity (Leitzinger & Collette, 2002).

Consolidation joint ventures are suitable in areas where production reached the peak and ownership and operating structures are fragmented. It can take several forms. Exchange partners may merge all their operations, assets, and underground reserves, or form an above-the-ground joint venture services company.

Although consolidation of reserve and other physical assets may benefit exchange partners, it causes hurdles, including valuing reserves, meeting the regulatory requirements, and difficulties in persuading minority shareholders to accept consolidation and in creating a single culture.

#### **5.4.2. Alliances with specialist**

Specialist alliance refers to an IR form that a major oil firm, normally a large oil firm, combines its resources and technology with knowhow, business approaches, and cost structure of a specialist oil firm, normally a small oil firm, in the hope that a major oil firm would acquire specialized knowhow and technology. In return a specialist oil firm may access resources that it would normally not be able to do so. For example, Amoco (a large firm) contributes its land of 75,000 acres and extensive three-dimensional seismic data to an alliance, while Union Pacific Resource Group (a small specialist firm) brings its expertise in the horizontal drilling. This form of IR is less suitable for areas where requires immense exploration costs and massive infrastructure. The challenges for a major firm are to preserve its small specialist partner's unique culture, skills, and approaches. A major firm should specify its partner's expert personnel to operate in its assets and to craft compensation mechanisms to lock them in.

#### **5.4.3. Enhanced supplier relationships and outsourcing alliances**

Most purchasing in both products and services in upstream industry is outsourced. Some purchases have evolved from market arrangement toward enhanced supplier relationships and outsourcing alliances that involve risk and reward sharing. O&G operator firms can enhance their resource development by focusing their capital and resources elsewhere. Service or specialist firms can expand their activities by sharing in revenues from the field.

Outsourcing in upstream O&G industry can appear, for example, when oil operator firm outsources one or more of its function to service company in order to acquire cost savings. In O&G industry, oil firm often outsource drilling operations, well completion, geophysical logging, facility construction and modification. On the NCS some O&G operator firms only own and administer the field but outsource the production facility to service firms (Kumar & Marqueset, 2007).

Reve and Johansen (1982) dissect the buying processes for various types of products and services in North Sea O&G fields and prove that, in general, there are a small number of large oil firms acting as operator firms. Currently there are six hundred and fifteen license

operators on the NCS (“FACTPAGES”, 2011). They tend to be large multi-nationals, such as Chevron Norge AS, ConocoPhillips Skandinavia AS, or A/S Norske Shell. On the contrary, there are a large number of industrial supplier firms whose size varies from large to very small, and which provide products and services for the construction and maintenance of offshore oil fields. The exchange between oil firms and their supplier firms demonstrates the IR.

However, nature of O&G production facilities is extremely complex (Kashani, 2006). The procurements in O&G, consequently, are highly complex and cause hurdles (Olsen et al., 2005). For example, if an operator firm outsources the building of new platform or rebuilding the existing one, several contractors, sub-contractors, and vendors will be involved. Since such procurements are complex and difficult to fully specify in advance. They are, thus, associated with high level of transaction costs and production time.

#### **5.4.4. Advantaged networks of producers and suppliers**

Alliance with multiple exchange partners occurs when a major company acts as “systems integrator” (Ernst & Steinhubl, 1997: 153) organizing and managing a group of exchange partners in order to (a) reduce overall system cost and cycle times and (b) ensure an access to crucial technology and inputs. This type of relationship is suitable for areas characterized by technologically complex frontier and expensive and risky exploration and development.

#### **5.4.5. New operated-by-others relationships**

Operated-by-others (OBO) relationship refers to an exploration joint venture in which only one exchange partner assumes full responsibility for operations and other exchange partners act as investors who typically have little management influence and receive detailed reports. Kashani (2005, 2006) demonstrates the oil production in the North Sea which Norwegian authorities have discretion to allocate each field to a number of oil companies, which normally formed a partnership or consortium. In each consortium, there is usually one oil company nominated as the operator who is responsible for decisions

regarding oil field development and daily operation once the production has started. However, all decisions are bounded with the cost limit set by the consortium. For the O&G in many developing countries, multinational oil firms operate partnership with the local government under a concession system. The government authority is the concessionaire, while major oil firms are operator. Such operations are normally under the Joint Operating Agreements or Production Sharing Contracts (Jaiyeoba, 2009).

New OBO has been considered in order to improve the administration of OBO positions. For example, consolidating OBO holdings into operations with fewer exchange partners and larger stakes may reduce administrative costs. Minority stakes are considered as a vehicle for learning and sharing technology and process knowhow.

### **5.5. Asymmetric relationship in oil and gas industry**

Asymmetric power relationship in O&G industry can be seen between exchange partner firms. It occurs when one firm values other firms' resources and cannot find alternative sources of these resources (e.g. French & Raven, 1959; Gaski, 1986; Gaski & Nevin, 1985; Scheer & Stern, 1992; Wilkinson, 1979). Reve and Johansen (1982) argue that in this industry technical interdependency is a major factor influencing organizational buying because building platform start from technical designing that later influence the subsequent components needed for construction and maintenance the complex technical installation. However, dependency in O&G industry is not limited to the building production platform. It spreads over all kinds of services and supplies, such as in accounting and finance, which one party benefits from the relationship and cannot find alternative sources.

Power base used in the industry shows in various types. Green (2003) claims that operator firms rely heavily on specialist contractors who provide services necessary for O&G operation. In many cases specialist firms is knowledgeable about a certain area that oil firms benefit. As a result, specialist firms may have more power over oil firms where the power base is expert power. Ernst and Steinhubl (1997) argue that consolidation joint ventures formed by O&G firms across wide area of activities have more power with suppliers or specialist companies where the power base that consolidation has is reward power – i.e.

purchasing order. However it is not always the case that oil firms form alliance with each to generate the power because consolidation presents hurdles, not always easy for an oil firm to consolidate its operations or assets with other oil firms. In conclusion, it depends on the type product or service, oil-producing region, and the number of players, including oil firms, specialist, and supplying firms. For example, in North Sea there are a small number of large oil firms while there are a large number of industrial vender firms (Reve & Johansen, 1982).

## **5.6. Empirical findings**

What does the literature say about IR in an upstream O&G context? There seems to be not much recent research that studies the IR in this context. However, we can divide it into two main streams – i.e., one involving mode of governance and the other involving the improvement of operational functions.

The first stream is more relevant to this research proposal. Researchers in this stream focus on forms of IR. For example, Ernst and Steinhubl's (1997) five forms of alliance seems to be consistent with TCE, as increases in specific investments and uncertainty hierarchy is preferred over market governance. Green (2003) pays attention to relational exchange – i.e., goodwill trust. Olsen et al. (2005) dissect the plural forms of governance. More detail of each literature is described as follows.

Ernst and Steinhubl (1997) demonstrate the advantage of establishing alliance among oil firms and their supplier firms, and identify five forms of alliance in upstream O&G industry: (a) consolidation joint ventures, (b) alliances with specialist, (c) enhanced supplier relationships and outsourcing alliances, (d) advantaged networks of producers and suppliers, and (e) new operated-by-others relationships. More detail of each form is available in sub-chapter 5.4 of this chapter.

Green and Keogh (2000) consider the development of collaborative relationships that aim for the benefit of all exchange partners. They summarize the business environment of upstream O&G industry and suggest some of the characteristics of collaborative working between oil firms (customers) and their contractors: (a) five years or more relationships, (b) emphasize on contractors' values, policies, and personnel's behaviors rather than on cost,

(c) “best person for the job” used for building single integrated team from exchange partners (d) emphasizing the team building, (e) Emphasizing the contribution to the end result by all exchange partners, (f) Early involvement of influential personnel, (g) Commercial alignment is achieved through sharing of rewards or penalties. Green and Keogh (2000) also dissect the literature and identify factors encouraging the success in alliance and collaborative relationships in upstream context: (a) commitment and example from senior management, (b) clear objective understood and accepted by everyone, (c) understanding where the ‘win win’ comes from, (d) stretch objectives, (e) change of beliefs, attitude, and behaviors, (f) no-blame culture, (g) integrated team – no duplication of roles, (h) frequent and open communication, (i) training in collaboration and in developing new ideas.

Furthermore, Green (2003) focuses on a particular type of trust between oil firms and their contractors, namely, goodwill trust that refers to mutual expectations of open commitment to each other. He suggests that goodwill trust increases as exchange partners gain experience of working together; and it is essential and necessary to measure the levels of it between involving personnel of exchange partner firms, since they can be used to increase operational effectiveness between partner firms and to fashion longer term changes in competitive advantage and strategic change.

More interestingly, Olsen et al. (2005) focus the complex procurements in the O&G industry in order to find possible improvements that could make the industry less vulnerable in periods of low oil price. They investigate the use of contracts and governance mechanisms for handling complex procurements and suggest that such procurements can be governed by different combinations of governance forms: market, hierarchy, and relational. In fact, these forms complement each other. There is a multiplier effect or interplay between the specific uses of these forms of governance. In some cases the combinations of mechanisms enhance each other but in other cases they hamper each other.

The second stream of IR research in the context of upstream O&G involves the improvement of operational tasks. For example, Reve and Johansen (1982) develop a model of organizational buying in terms of groups and departments participating in the various phases of the procurement processes in the context of the offshore O&G industry of the



North Sea fields. A pattern of organizational participation is dependent on the complexity of the buying transaction. Low complexity transactions are largely handled by boundary units, such as purchasing department. High complexity ones involves high influence department that are able to clear up the uncertainties associated with complex transactions. Likewise, Kumar and Markeset's (2007) propose a case study on external and internal services needed to support (or perform) O&G operation and maintenance and suggest that operator firms of complex O&G production facilities are becoming increasingly dependent on service providers. Contracts are used as a governance form between exchange partners and developed based on traditional approaches, and the service content based on basic needs.

## **5.7. Summary**

I first introduce O&G industry, indicating the three basic products and explaining O&G production. I then demonstrate the importance of this industry to Norway economy and, more importantly, to EU countries. Further, three petroleum systems of NCS are detailed, describing their characteristics and current conditions. The North Sea is where the first Norway O&G production commenced and then moved northwards to the Norwegian Sea and the Barents Sea.

I proceed to the IR in O&G industry, starting with distinguishing three generic type firms in the industry: oil firms, their supplier firms, and their customer firms, and identify three generic forms of exchange: (a) exchange occurred among oil firms, (b) exchange occurred between oil firms and their supplier firms, and (c) exchange occurred between oil firms and their customer firms. The first two generic forms are in the upstream industry but the last belongs to the downstream industry.

I pay particular attention to IR in upstream industry, since thesis intended to study the relationships between oil firms and their supplier firms. To get a comprehension of IR in upstream O&G industry, I use five alliance forms of Ernst and Steinhubl (1997) as a starting point: (a) consolidation joint ventures, (b) alliances with specialist, (c) enhanced supplier relationships and outsourcing alliances, (d) advantaged networks of producers and suppliers, and (e) new operated-by-others relationships. Each form is delineated with

examples and supported by other extent research. Among these five forms, the third form, enhanced supplier relationships and outsourcing alliances are most relevant to this thesis and, therefore, emphasized.

Next, I explain that asymmetric power exists and functions in upstream O&G industry when firms depend on each other for valuable outcomes from their relationships. The major and common power base in this industry is the expert power where specialist firms are knowledgeable in some areas necessary for supporting the operation. However, source of dependency is not limited to expert. Other bases can also be possible, such as reward – i.e., purchasing order. Nevertheless, number of alternative sources must also be considered.

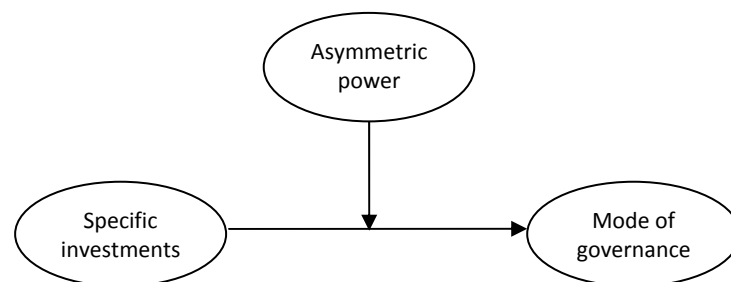
This chapter ended with empirical findings in the discipline of upstream O&G industry, composing of two streams: (a) research involving mode of governance, and (b) research involving improvement of operational functions. The first stream is more relevant to this research proposal; and all four pieces of extent research in this stream (i.e., Ernst & Steinhubl, 1997; Green, 2003; Green & Keogh, 2000; Olsen et al., 2005) seem to be equally important.

## 6. Research model and hypotheses

### 6.1. Introduction

The theoretical framework of this research proposal was presented and elaborated in Chapter 2 – Chapter 5. As argued earlier, the research model is based on an integration of transaction cost economics theory, relational contracting theory, and inter-organizational power. The contribution of this research is to study the moderating effects of power asymmetry on the relation between specific investments and mode of governance.

In this chapter, the full research model is presented and accounted for, and based on the theoretical framework. Testable hypotheses are developed based on to what extent the power asymmetry would moderate the effect of specific investments on mode of governance in TCE framework, as shown in figure 6.1. However, as many researchers argue that relational contracting (or trust) can also be a non-market based governance, it is, thus, included in proposed model.



**Figure 6.1** The basic conceptual model

Power asymmetry shows the phenomenon that a firm has power over its exchange partner when its exchange partner perceives that a firm has expertise, information, attractiveness, and/or a right to prescribe an exchange partner's behavior, or the ability to mediate punishments and rewards for an exchange partner (e.g. French & Raven, 1959; Gaski, 1986; Gaski & Nevin, 1985; Scheer & Stern, 1992; Wilkinson, 1979). The mentioned decision making and behaviors in this study pertain to the choice of governance between hierarchical and relational modes.

According to the complete TCE framework (Williamson, 1985), transaction constituting the economic exchange between buyer and supplier is considered as the unit of analysis. Three

principal attributes of transaction are specific investments (or asset specificity), uncertainty associated with the exchange of resources between parties, and frequency of economic exchange. The combination of these three transaction dimensions determines the most cost efficient mode of governance.

However in this proposal I focus only on specific investments which refer to the degree to which the assets are tailored to a particular transaction and cannot be redeployed to “alternative uses and by alternative users without sacrifice of productive value” (Williamson, 1991b: 282). Williamson (1985) argues that asset specificity is the critical determinant of the choice between markets and hierarchies, and “the big locomotive to which transaction cost economics owes much of its predictive content” (Williamson, 1998:36). As a result, asset specificity is the most frequently considered as an independent variable in TCE studies (David & Han, 2004).

A basic TCE framework holds that as the specific investments increase exchange partners become more inter-dependent. High asset specificity transforms trade conditions from market transactions to small-number conditions (Williamson, 1975). Under such high asset specificity, an investing partner becomes vulnerable because its specific investments cannot be re-deployed for other purposes without a substantial sacrifice of productive values if its exchange partner is able to act opportunistically. Specific investments are assumed to lead to a safeguarding problem for transaction specific investing partner. Under such condition, hybrid and hierarchical mode is assumed to replace market governance to safeguard asset specificity (Williamson, 1985).

However, TCE does not explicitly distinguish between the relationship where only one party make specific investments and relationship where both parties mutually hold such investments. Extant studies show that allocation of asset specificity affects governance mode (e.g., Buvik & Haugland, 2005; Buvik & Reve, 2001, 2002). Moreover, asymmetric power relationship between exchange partners play a modest role in TCE framework (Williamson, 1991a), as it assume that exchange partners are farsighted, so that they anticipate the potential asymmetric power issues at the outset. Dependency issue is addressed ex ante while exchange partners are designing the suitable mode of governance.

However, it is not always that a firm can organize the governance mode in the manner that it prefers. For example, as a firm makes specific investments, it seems to have an incentive to employ hybrid or hierarchical governance in order to safeguard the return of such investments, as suggested by TCE. However, a firm may lack of ability to influence its exchange partner to agree on its desire contracting mode. A firm's ability to influence the terms and conditions of contracts is highly related to its power (Argyris & Liebeskind, 1999; Stinchcombe, 1985). Thus, we should not only consider the motivation but also ability or power of a firm, whether a firm has ability to organize the exchange in the desired manner (Heide & John, 1992). This research proposal supports this reasoning, so that the primary topic of this research proposal is to examine whether asymmetric power between buyer-supplier dyadic relationships moderates the mode of governance. The relationships between external firms without cross holdings constitute the unit of analysis in this research.

The independent of the proposed mode is the specific investments which considered on their allocations and grouped into two. (a) *Unilateral specific investments* – i.e., only one party deploys specific investments to the exchange, so that there are one investing firm and one receiving firm in the dyadic relationship. (b) *Mutual specific investments* - i.e., both firms make specific investments. The moderating variable in the proposed model is asymmetric power which occurs when exchange partners have different levels of power. When they have the same degree of power, the symmetric power occurs. Under asymmetric power dyadic relationship, there is one party with relatively high power and the other is with relatively low power. As we combine these two variables we will have four cases to consider, as shown in Fig 6.5.

As I mentioned in Chapter 3 that there is a large number of governance modes that firms employ to establish, structure, monitor, and enforce the transactions with their exchange partners, such as price mechanism which is the dominant component of control system (Stern & Reve, 1980). However there are two main perspectives that I focus: TCE and RCT. Originally non-market TCE mode of governance is hierarchy. However, many researchers argue that relational exchange is also used as a viable alternative mode of hierarchy. A considerable number of studies show that norms have a safeguarding capacity. They are

positively related to the degree of specific investments (Anderson & Weitz, 1992; Bello & Gilliland, 1997; Gundlach et al., 1995; Heide & John, 1990, 1992; Lusch & Brown, 1996).

In general, if a contract exists, it is normally augmented by norms and informal agreements (Heide & John, 1992). However it has been argued that relational contracts should be considered as governance mechanisms in their own right (Powell, 1990) because they have capacity to function as both an ex ante role of prescribing socially accepted behaviors, as well as an ex post role of evaluating whether, and to what extent, exchange partners' behaviors conform to established standards.

Note that the hypotheses will be tested in the context of buyer-supplier dyadic relationships in Norwegian upstream O&G industry setting where exhibits that phenomenon of interest at varying degree, including allocation of specific investments, power asymmetry between exchange partners, employment of hierarchical and relational exchanges.

In this chapter, first two hypotheses are developed as baseline hypotheses to confirm the prediction of TCE and RCT. The next five hypotheses are made according to the type of allocation of specific investments and degree of power asymmetry.

## **6.2. Hypotheses – the base model**

To develop hypothesis, I decide to begin with the test of the common tenet of TCE framework. TCE makes a priori assumption that market governance is more efficient than hierarchical mechanism due to the benefits of market competition because transaction within integrated form may be prevented from the competitive pressure and subject to bureaucratic cost. However, in order to acquire cost saving and/or value creation a firm may tailor its investments to fit the specific requirements of its particular exchange partner. Such specific investments may create some problems because a firm cannot costlessly exit the relationship – i.e., lock-in effect, meaning that exchange as characterized ex ante by classical contracting, identity of the parties is irrelevant, is transformed in to neoclassical contracting, identity of the parties is crucial. As a result, the firm exposes itself to opportunistic behaviors of its exchange partners, such as failure to perform according to an agreement. Thus, the transaction costs associated with market governance increase because market competition

does not restrain opportunistic exploitation, leading to the need for contractual safeguarding to prevent its exchange partner's assumedly inherent inclinations to appropriate "quasi-rents" (Klein et al., 1978). TCE suggests that vertical integration (hybrid or hierarchy) can be a solution to such safeguarding problem (Williamson, 1975, 1985) where in (a) rules related to the particular transaction are specified – i.e., formalization and (b) one party can impose decisions on the others – i.e., centralization.

This research proposal intends to describe the shift from market governance to non-market governance. As in the research context, oil firms are buyer firms that purchase products and or services from their supplier firms which can be, for example, industrial vending firms and specialist contractors. Both types of firms in this study are external firms that are nominally independent firms without cross holdings. Some extant research therefore considers hierarchical governance or internal organization irrelevant as governance mode in my analysis. For example Buvik and Reve (2001, 2002) exclude hierarchical governance from their conceptual model because sample buyer and supplier are independent firms. They limit non-market-based exchange to bilateral governance (or hybrid) and conceptualized it as formalized inter-firm contracting.

However, several researchers focus on various dimension of vertical integration between external firms found that hierarchical governance demonstrates in the relationships between external firms. For example, Stinchcombe (1985) documents several cases that authority relationships and hierarchical control procedures can, in fact, be found in contracts between two external exchange parties even though ex ante product specifications do not exist; design and production costs are uncertain; and performance measurement is difficult.

Therefore, in this study the hybrid and hierarchical governance dimension is conceptualized as degree of formalization and centralization. The first baseline hypothesis is test the common tenet of TCE framework whether it is empirically supported– i.e., when specific investments are at high degree in asymmetric dyadic relationship, mode of governance is likely to be a hierarchy.

*Hypothesis 1: Specific investments are positively related to hierarchical governance.*

Originally TCE framework focuses on the dichotomy between market and hierarchical governance. However, researchers critique TCE that it overstates the desirability of exchange partners on integration and explicit contract. In fact, many firms conduct collaborative exchange which is neither market nor hierarchy (Dyer, 1997). Moreover, Geyskens's et al. (2006) meta-analysis shows that many studies support that as asset specificity increases relational governance becomes preferred over market governance. In general the logic is the same with original TCE that if specific investments are high, an investing firm exposes itself to opportunistic behavior of its exchange partner, so that a firm needs to safeguard its specific investments.

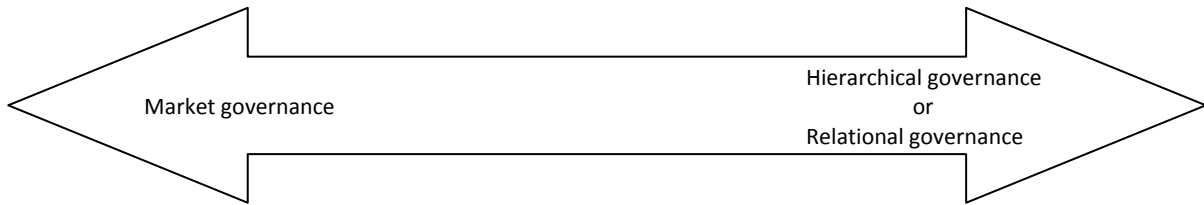
Relational contract normally complements a contract in form of norms and informal agreements (Heide & John, 1992). However, it is proposed to be considered as governance mechanism in "their own right" (Powell, 1990). There are two main reasons supporting this statement. First, relational contracts have capability to ex ante prescribe socially accepted behaviors that maintain the relationship as a whole and promote the goals of exchange partner (Heide & John, 1992). Second, relational contract has ability to serve an ex post role as a referent point in case of non-compliant behaviors – i.e., to evaluate whether and to what degree a partner firm behave conforming to established standards (Ivens, 2002).

Anderson and Weitz (1992) found that the commitment between exchange partners increases following investments, suggesting that high degree of specific investments influencing the creation of relational sentiments. Expectations of payoffs from the future cooperative behaviors prompt the present cooperation (Axelrod, 1984). Socialization processes identify socially accepted behaviors and make clear that deviant behaviors will be punished. As a result, norms are developed and strengthened by trustworthy interactions between exchange partners that generate a win-win exchange situation (Dwyer et al., 1987; Macneil, 1980; Uzzi, 1997); and eventually norms have sufficient safeguarding capability, therefore mitigating exchange hazards.

The second baseline hypothesis is to test this alternative mode of governance whether it is empirically supported. Since transaction cost approach can be used to explain RCT, relational governance is incorporated into the TCE framework by being a viable alternative to hierarchy when the market fails, as show in figure 6.2.

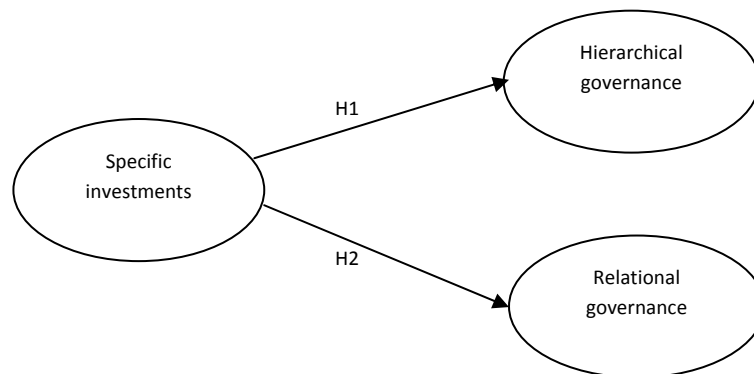


Hypothesis 2: *Specific investments are positively related to relational governance.*



**Figure 6.2** The continuum of exchange where relational governance is an alternative mode to hierarchical governance.

In short, in this sub-chapter two baseline hypotheses are developed – i.e, the relation between specific investments and mode of governance. The first one is to test the common tenets of TCE framework which argues that asset specificity is positively related to hierarchical governance, while the second one is to test the alternative mode of relational exchange to non-market mode in TCE which propose that asset specificity is positively related to relational governance.



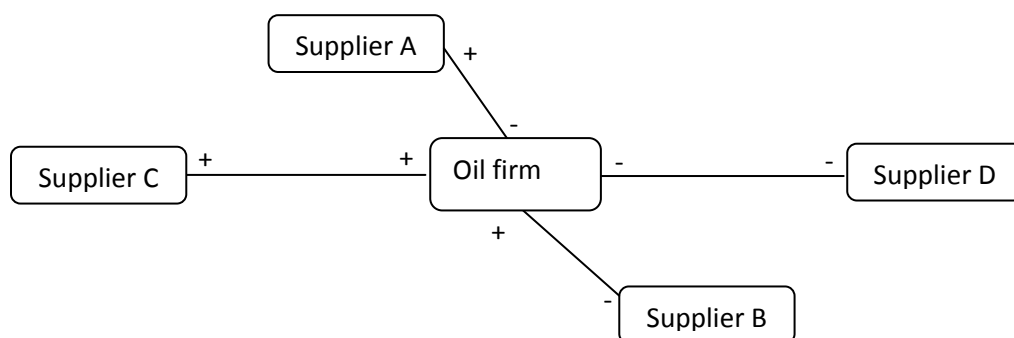
**Figure 6.3** The base model

### 6.3. Hypotheses – the extended model

In this section, asset specificity will be considered according to its allocation characteristics: mutual-high and unilateral specific investments. Moreover asymmetric power is also introduced to the model as moderating variable.

In O&G context asymmetric power exhibits itself in two directions. It can be the case that an oil firm is the powerful partner that has power over its supplier firm in a focal dyadic relationship. On the other hand an oil firm is a weaker partner and depends on its supplier firm in another focal dyadic relationship. To illustrate, figures 6.4 depicts two different asymmetric power dyadic relationships. Firstly, an oil firm has power over supplier B, meaning that supplier B depends on an oil firm. Secondly, on the contrary, an oil firm depends of supplier A, meaning that supplier A has power over an oil firm.

Regarding power symmetry between an oil firm and its supplier, symmetric power means that degree of power asymmetry between exchange partner firms are low which can be seen in two types – i.e., both partner firms have the same level of power either equally low or equally high. Under symmetric power relationships neither an oil firm nor its supplier has power over one another in their dyadic relationship. As in figure 6.4 Supplier C and oil firm have the same degree of high power for their focal dyadic relationship. It may be the case that, for example, Supplier C is only firm or one of few firms that has some products and/or services that oil firm benefits, vice versa oil firm is only customer of Supplier C that have some resources that Supplier C looks for. An oil firm and Supplier C are highly interdependent under symmetric power relationship. On the contrary, Supplier D and oil firm have the same degree of power but at the low degree. It means that Supplier D sell some products and/or services that an oil firm either does not much benefit or can find many other alternative suppliers. Conversely, Supplier D does not benefit much for relationship with oil firm. It also has many customer firms that provide reward at indifferent level oil firm does.



**Figure 6.4** The illustration of asymmetric power between an oil firm and its suppliers.

There are four possible types of relationship when independent variables are categorized by the allocation of asset specificity and degree of asymmetric power, as shown in figure 6.5, including (a) asymmetric power relationship with mutual specific investments (see type 1 in Fig. 6.5), (b) asymmetric power relationship with unilateral specific investments (see type 2 in Fig. 6.5), (c) symmetric power relationship with mutual specific investments (see type 3 in Fig. 6.5), and (d) symmetric power relationship with unilateral specific investments.

	<b>Mutual specific investments</b>	<b>Unilateral specific investments</b>
<b>Asymmetric power</b>	Mutual specific investments and Asymmetric power <b>Type 1</b>	Unilateral specific investments and Asymmetric power <b>Type 2</b>
<b>Symmetric power</b>	Mutual specific investments and Symmetric power <b>Type 3</b>	Unilateral specific investments and Symmetric power <b>Type 4</b>

**Figure 6.5** All possible independent variables

### **6.3.1. The impact of asymmetric power on the relation between mutual specific investments and hierarchical governance**

In this section I develop hypothesis based on the assumption that both parties to the exchange make specific investments (see type 1 and type 3 in Fig. 6.5). When an oil firm and its supplier make mutually high specific investments, an oil firm may, for example, tailor its own oil/gas production facilities to a particular supplier on the hope of the adding product value or saving production costs, while such supplier may, for example, also intensively customize its products and/or provide very special service to an oil firm because, for example, such transaction requires both parties in joint design and utilization of relation-specific resources. Further, under such mutual asset specificity it is possible that the asymmetric power demonstrate its phenomenon (see type 1 in Fig. 6.5). For example, only one oil firm involves with one supplier among several in the customization and investments of the highly specialized oil/gas production facilities. In such asymmetric power relationship an oil firm is a partner with relatively high power and its supplier is a weaker partner. Conversely, if there is only one specialist firm in the O&G industry dedicating its high-end

technology to an oil firm, not to any other oil firms; it is the case of asymmetric power where an oil firm is a weaker partner of powerful supplier firm.

The reason why a powerful firm would make such specific investments to the exchange is that the oil/gas production by nature requires highly sophisticated technology in order to ensure the safety to people and environment involved (Green, 2003). It often requires joint design from both parties regardless degree of power the party has. Both parties to transaction in some cases have to tailor their resources to an exchange.

On the other hand, it is also possible that mutual specific investments occur in symmetric power relationship (see type 3 in Fig. 6.5) which can occur in two forms: symmetric high power and symmetric low power relationships. In both forms degree of power between an oil firm and its supplier are the same. Each partner owns rare resources, such as certain oil/gas regions or production technology (Green, 2003); and that oil firm and its supplier can hardly find alternative partners who can pursue business with – i.e., not so many players in the region. On the other hand, under the symmetry low power relationship, for example each firm has many alternative partners that can provide similar resources/rewards (Reve & Johansen, 1982).

Under condition involving high deployment of specific assets by both exchange partners, an oil firm and its supplier become highly interdependent because such specific assets cannot be redeployed to another application or relationship without a significant loss in value. Market safeguard against opportunism is no longer effective. TCE predicts that both firms will tend to employ contractual safeguarding to protect assets at risk and to minimize transaction costs.

Basically, I expect the same with TCE. However, asymmetric power is expected to play its role. With mutually high specific investments under asymmetric power relationship the degree of bilateral governance is expected to be higher than in the symmetric power one. A firm with relatively high power, either an oil firm or its supplier, is expected to exploit its exchange partner (Bannister 1969; Robicheaux & El-Ansary 1975). I anticipate that a powerful firm would prescribe its weaker partner to employ a contract that governs both parties to work even more closely than usual – i.e., more formalized and centralized, to gain more protection of its assets at risk and more access to its partner's information (Dwyer &

Walker, 1981; Frazier & Rody, 1991; Frazier et al., 1989; Heide & John, 1992; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). Such contract may provide legitimate authority to a powerful partner to monitor weaker partner's behavior or nominate this powerful party to be party who has the authority to modify contractual provisions in order to safeguard its specific investments (Stinchcombe, 1985). The positive relation between specific investments and the degree of formalization and centralization of the contract is more likely to become stronger as asymmetric power increases. The higher the asymmetric power the closer collaboration the powerful partner prefers to employ with its weaker partner.

*Hypothesis 3: With mutual specific investments, asymmetric power increases the degree of hierarchical governance.*

### **6.3.2. The impact of asymmetric power on the relation between unilateral specific investments and hierarchical governance**

In this section I develop hypothesis based on the assumption that there is only party in the dyadic relationship that deploy asset specificity. Under conditions where only one party unilaterally deploys specific investment on behalf of its exchange partner (see type 2 and type 4 in Fig. 6.5), a large-numbers bargaining situation is reduced to a small-numbers situation in which an investing party will face a 'lock-in' problem and it will be costly to switch to a new relationship. The market safeguarding device is no longer effective. As a result, TCE predicts that exchange partners are more likely to adopt more integrated structure in order to reduce transaction costs and protect its specific investments.

Basically, I agree with TCE that bilateral governance will be used to safeguard such unilaterally specific assets and reduce the transaction costs. However, considering the case that relationship is characterized as asymmetric power relationship (see type 2 in Fig. 6.5) if in such relationship a powerful firm is party who make unilateral specific investments, power asymmetry is expected to play its role by strengthen the relation between asset specificity and bilateral governance. Consistently with my previous proposition, I expect that a firm with relatively high power will influence it exchange partner to work more closely in order to secure its specific investment and reduce the transaction costs by gaining more access to its partner's information (Dwyer & Walker, 1981; Frazier & Rody, 1991; Frazier et al., 1989; Heide & John, 1992; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). A contract

providing more integrated structure that allows a powerful firm to have legitimate authority over its weaker partner seems to be used in asymmetric power relationships with powerful-firm-held specific investments (Stinchcombe, 1985).

This proposition is similar to findings of Buvik and Reve (2002) but opposite to Shervani's et al (2007). Buvik and Reve (2002) show that power interfere with the safeguarding of specific investment by increasing the level of formalized purchase contracting. However, Buvik and Reve's study emphasize the trade identity of party – i.e., buyer or supplier. They found that moderating effect of asymmetric power occurs only when supplier unilaterally holds the asset specificity. Differently, my proposition focuses on power status. Regardless the trade identity of powerful firm, the degree of integration should be increased if specific investments are made by a powerful firm in the dyadic relationship.

Regarding Shervani's et al (2007) empirical study on a moderating influence of firm market power on the TCE in the electronic and telecommunication product industries, they show that a firm with high market power in a product-market may be able to lower transaction costs under high asset specificity and uncertainty in non-integrated distribution channels (i.e. market governance) because its power should facilitate process associated with bargaining, assembling information, and coordinating channel relationships. Shervani's findings are opposed to basic TCE tenet that firms may employ more integrated governance to protect their asset specificity, as well as my proposition that the possession of power may enable a powerful firm to prescribe its exchange partner to work more integrated than usual. The degree of formalization and centralization are expected to be high when a powerful partner is a party that makes unilaterally specific investments.

*Hypothesis 4: With unilateral stronger-firm-held specific investments, asymmetric power increases the degree of hierarchical governance.*

On the other hand, if an investing party is a firm with relatively low power in the asymmetric power relationship, under such conditions the degree of integration between parties is more likely to be less than usual. Even though a weaker investing party is motivated to protect its asset at risk and reduce transaction costs by employing a more integrated control structure, it does not possess power to influence its powerful recipient partner to agree to employ

such governance. At the same time, a powerful partner is more likely to prefer market based governance because it can gain benefits from market competition when it has no asset at risk (Williamson, 1985). As a result, the possession of power encourages a firm to act opportunistically by gaining a share of profit from an exchange unfairly. A powerful partner is more likely to prescribe its weaker partner to agree with low levels of formalized and centralized contract than usual (Dwyer & Walker, 1981; Frazier et al., 1989; Frazier & Rody, 1991; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). A firm with relatively low power due to lacking alternatives and status is prone to have high tolerance for the use of power by its exchange partner (Blalock and Wilkin 1979; Bucklin, 1973).

*Hypothesis 5: With unilateral weaker-firm-held specific investments, asymmetric power decreases the degree of hierarchical governance.*

### **6.3.3. The impact of asymmetric power on the relation between mutual specific investments and relational governance**

The preceding hypotheses are developed on the original TCE perspective that non-market governance is the hierarchical governance. In this section, I extend the hypothesis 2 that relational governance is treated as a viable alternative mode of hierarchical governance (Dyer, 1997; Geyskens et al. 2006; Heide & John, 1992; Ivens, 2002; Powell, 1990). Consistent with the preceding hypotheses, independent variable in the extended model of this section is allocation of specific investments and moderating variable is power asymmetry.

Originally, TCE framework focuses on the dichotomy between market-based and hierarchical governance. However many researchers critique that TCE theory overstates the desirability of integration and explicit contractual safeguarding devices (Poppo & Zenger, 2002), while, in fact, collaborative exchange or relational governance is widely used between firms (Dyer, 1997). As a result, relational governance may be a viable alternative mode for non-market governance (Geyskens et al, 2006).

Relational exchange is a non-juridical mechanism that incorporates many informal components, such mutual dependence, common expectations, trust, and joint action (Bradach & Eccles, 1989). Macneil (1980, 1983) proposes ten common contract norms

emerged from the patterns of basic contractual behavior. However, Cannon et al. (2000: 183) see the overlapping concepts among them and reduce to a core set of five norms: (a) flexibility, (b) solidarity, (c) mutuality, (d) harmonization of conflict, (e) restraint in the use of power. Delineation of each norm is provided in Chapter 3.4.2.3.

Under symmetric power relationships with mutual specific investment (see type 3 in Fig. 6.5) both oil firm and its supplier possess the same degree of power and hold high degree of specific investment, TCE framework suggests that as specific investments increase, firms will tend to employ integrated governance to safeguard their specific assets and reduce transaction costs. However, under such condition it seems hard to develop hierarchical governance that one party will have a legitimate authority to direct another party because both parties possess the same degree of power. They are, therefore, more likely to employ relational governance that expresses the sentiment of joint responsibility (Cannon et al., 2000). None can direct any decision to its partner. Moreover, reliance on relational exchange both partners can avoid the high costs of establishing and maintaining the bilateral contract (Harrigan, 1983).

On the other hand, regarding asymmetric power dyadic relationship with mutual asset specificity (see type 1 in Fig. 6.5), under such relationship the willingness of the party to have a norm of solidarity or mutuality is expected to be lower than when firms are symmetric in power (see type 3 in Fig. 6.5) because a firm with relatively high power is likely to retain its right to utilize its power to earn benefits from the relationships on the expenses of its weaker partner – i.e., avoiding norms of solidarity and mutuality (Dwyer & Walker, 1981; Frazier et al., 1989; Frazier & Rody, 1991; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978). A firm with relatively low power seems to be motivated to employ the relational norms because it can benefit from a norm of harmonization of conflict and a norm of restraint in the use of power, enabling a weaker partner to receive mutual accommodation from the relationship and protect it from being taken advantage – i.e., opportunism, from its powerful partner. However I anticipate that a powerful firm will tend to avoid adopting relational exchange, since such governance will hinder it from utilize its power in order to acquire benefits on behalf of its partner. Therefore, the degree of relational exchange in mutual asset specificity with asymmetric power is expected to be lower than in mutual asset specificity with symmetric power.



*Hypothesis 6: With mutual specific investments, symmetric power increases the degree of relational governance.*

#### **6.3.4. The impact of asymmetric power on the relation between unilateral specific investments and relational governance**

In the preceding section I develop hypotheses based on assumption that both parties in dyadic relationships deploy specific investment and delineate how I expect the symmetric power would moderate the relation between specific investments and relational governance. In this section, I will focus on the relationship with unilateral specific investments and pay particular attention to the relationship with asymmetric power (see type 2 in Fig. 6.5). Under asymmetric power relationship with unilateral specific investments regardless the trade identity whether investing firm is an oil firm or its supplier, an investing firm exposes itself to opportunisms of its exchange partner, so that there will be a requirement of safeguarding device (Williamson, 1985).

Under such condition if an investing firm is a firm with relatively low power, it is more likely that relational governance becomes preferred because such weaker firm needs governance mode that hinder the use of power by its powerful partner (Heide & John, 1992). The use of power not only exacerbates conflict over time but also undermines mutuality and solidarity, opening the door to opportunisms (Cannon et al., 2000). Moreover, such weaker investing party would need a governance mode that encourages the attitude that each party's success is a function of everyone's success and that powerful party cannot prosper at the expense of weaker party's –i.e., expresses the sentiment of joint responsibility (Cannon et al., 2000). Even though such investing firm with relatively less power would prefer to employ hierarchical structure, its powerful partner seems to hesitate as it would benefit more without such structure. As a result, informal governance is expected.

*Hypothesis 7: With unilateral weaker-firm-held specific investments, asymmetric power increases the degree of relational governance.*

On the other hand, if investing party is a powerful firm, such firm is likely to avoid relational structure, especially those norms that hinder it from exercising its power. A powerful partner is likely to prescribe its weaker partner to agree with low levels of relational

structure (Dwyer & Walker, 1981; Frazier et al., 1989; Frazier & Rody, 1991; Kale, 1986; Roering, 1977; Wilkinson & Kipnis, 1978).

Hypothesis 8: *With unilateral stronger-firm-held specific investments, asymmetric power decreases the degree of relational governance.*

#### **6.4. Summary – the full model**

The general premise underlying the hypotheses in this study is that the potential for adopting a mode of governance is fundamentally moderated by the degree of asymmetric power in dyadic relationship. I have developed essentially parallel predictions for the non-market mode of governance between hierarchical governance and relational exchange in which asset specificity is a predictor and asymmetric power is a moderator. Asset specificity is hypothesized to positively impact the degree of hierarchical and relational governance, as the base model of this study.

Further, combination of different allocation of specific investments and different degree of power asymmetry show the different effects on governance mode. Power asymmetry is hypothesized to increase the degree of hierarchical governance when exchange partners hold mutual specific investments. Consistently, with unilateral powerful-firm-held specific investments, power asymmetry is asserted to positively moderate the positive association between specific investments and hierarchical governance, but negatively moderate in a relationship with weaker-firm-held specific investments. The testing of these three relations will give us knowledge of how power asymmetry impact relation between specific investments and hierarchical governance.

As outline in Chapter 3.4.2, there is much research suggests that relational governance is a viable alternative mode of governance for hierarchical governance. The degree of relational governance is expected to be more increased when both exchange partners have the same degree of power and make mutual specific investments. However, with unilateral weaker-firm-held specific investments, asymmetric power is hypothesized to increase the degree of relational governance, while unilateral powerful-firm-held specific investments interacting with asymmetric power is hypothesized to decrease the degree of relational structure. The testing of these three relations will give us knowledge about how asymmetry power

moderates the effect of asset specificity and relational governance. The full conceptual model is shown in Fig. 6.6. The summary of hypotheses and structure linkage in the model are shown in Fig.6.7.

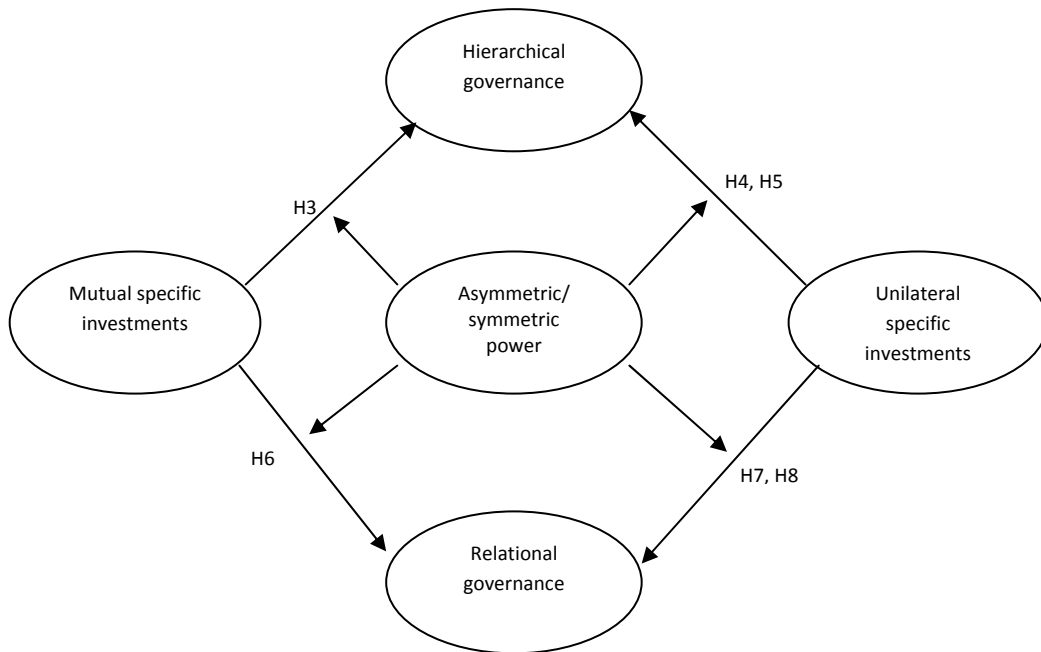


Figure 6.6 The full conceptual model

H1	Specific investments – Hierarchical governance	+
H2	Specific investments – Relational governance	+
H3	Mutual specific investments*Asymmetric power – Hierarchical governance	+
H4	Stronger-firm-held specific investments*Asymmetric power – Hierarchical governance	+
H5	Weaker-firm-held specific investments*Asymmetric power – Hierarchical governance	-
H6	Mutual specific investments*Symmetric power – Relational governance	+
H7	Weaker-firm-held specific investments*Asymmetric power - Relational governance	+
H8	Stronger-firm-held specific investments*Asymmetric power-Relational governance	-

Figure 6.7 Summary of the hypotheses and structure linkage in the model

## **7. Research design and method**

### **7.1. Introduction**

In this chapter I introduce the research design, the empirical setting, data collection procedures, and measurement of the variables. The first section I will briefly discuss research designs and the criteria for selecting research designs. Based on the discussion, chosen design will be justified. The second section describes the empirical setting that requires the existence of specific investment and power asymmetry in dyadic relationships, and varieties of governance modes used in the industry. The third section explains sample frame and sample procedures. The fourth section addresses measurement issues. Section five shows how I deal with control variables and rival predictors. The last section describes some consideration around data collection.

### **7.2. Research design**

As this study is an empirical study designated to conduct theory testing of a causal model, several research designs could be used for this purpose (Frankfort-Nachmias & Nachmias, 1996). Four broad categories of quantitative research designs are the classical experiment, the quasi-experiment, the non-experimental field study, and the correlation design. Each type has limitations.

*The classical experiment* is generally preferred over the rest. This design allows researcher to fully control all variables in research model and situation, use standardized procedures, manipulate the treatment while controlling the stimuli imposed on the respondents, and compare groups having received different stimuli. Conducting experimental design researcher can minimize the possibility of spurious effects on the dependent variable as well as establish that the independent variable precedes the dependent variable in time, allowing the strongest test of the theory (Calder, Phillips, & Tybout, 1981). Subsequently not only internal validity is strong but causal relationship can also be established. Moreover, reliance on laboratory settings researchers can conduct multiple operationalizations of different variables at a lower cost than in the field research (Calder et al., 1981). However, in this design external validity tends to be weak which is because classical experiment does not

allow researcher to replicate real-life situations in a laboratory. As the unit of analysis of this study is a dyadic relationship between two external firms, as a result, it is impossible for the treatment manipulation. Thus, classical experiment is not an alternative for this study.

*The quasi-experiment* is a design that the classical experiment is “brought out” to natural settings, while still maintaining the core characteristics of classical experiment (Campbell & Stanley, 1963). In this research design some variables can be controlled while some cannot. If the critical variable can be controlled to a non-trivial degree, we can assume that same kind of ex ante manipulation and ex post comparison are under classical experiment. Hypothetically, this form of research acquires high score on internal, statistical conclusion, and construct validities, while making the setting more natural. However, this form may not be suitable for this study because adopting this form for the model in this study would imply that the degree of specific investments and power asymmetry were to be manipulated in a subset of the groups, and then the effect on the governance mode should be studied ex post. The time perspective issue would also be additional obstacle.

*The non-experimental field design* or longitudinal design is, for example, panel and time series designs that can demonstrate direction of influence. Researchers should collect observations from at least two periods in order to statistically demonstrate that the alleged cause precedes effect. However, this design has practical limitations due to high cost for collection data and time which make it unsuitable for this study.

*The correlation design* or cross-sectional design whose primary strengths are internal and construct validities (Cook & Campbell, 1979); however this research design can deliver sufficient high on statistical validity, while external validity can be delivered at the relaxed degree. Since this study is to test hypotheses which can only conducted when internal and construct validities are high (Mitchell, 1985), cross-sectional seems to be a good option. When we have high degree in both internal and construct validities, statistical analyses which will be conducted further will also be smooth. A sufficiently high degree of statistical conclusion validity is very important because this study is correlation research that requires valid statistical conclusion. Cook and Campbell (1979) identify typical threats of statistical conclusion validity needed to be addressed, for example low reliability of the measures, low statistical power, violated assumptions, random irrelevancies in the empirical setting, etc.

Moreover, as the model of this study is casual model there are three challenges that Bollen (1989) identifies as a guide for researchers who use a correlation design: directionality, isolation, and association. First, regarding *directionality* it is impossible for correlation design to prove directionality if the study is conducted at one point of time. However, it can be a starting point for further longitudinal studies. Second, *isolation* challenge requires researcher to find any third variables that threaten valid inference making, since the existence of third variables may degrade the internal validity of the study. Mitchell (1985) suggests researcher to find third variables through systematic thinking and literature reviews. Sample should be homogeneous and control variable should be included in the model. Third, regarding *association* there are two problems needed to handle. (a) It is necessary to have variance in the independent construct in order to acquire the desired co-variation between the constructs. (b) To ensure that effect has materialized, the time elapsed between cause and effect should be long enough.

### **7.3. Validity concerns**

Regarding validity, Cook and Campbell (1979) suggest four forms of validity needed to be considered when conduction research: internal, external, statistical conclusion, and construct validity. (a) Internal validity occurs when two variables co-vary. Changes in independent variable must influence the changes in dependent variable, under which the effect of other factors must be ruled out, directionality must be established. (b) External validity refers to the generalizability of the study results, whether it is also applicable to other context. (c) Statistical conclusion validaty is defined as “inferences about whether it is reasonable to presume covariation given a specified alpha level and the obtained variances” (Cook & Campbell, 1979: 41), which refers to whether we can assume co-variation between two variables. (d) Construct validity is defined as “... the degree to which a measure assesses the construct it is purported to assess” (Peter, 1981: 134), or the degree of correspondence between a theoretical construct and an operational measure (Mitchell, 1985). A valid measure assesses the magnitude and direction of the construct, as well as not being contaminated. It is concerned about the confounding problem, whether the measures of constructs can be construed otherwise.

Construct validity can be divided into trait validity and nomological validity which both have to be addressed when conducting correlation research. First, Campbell and Fiske (1959) identify primary concern of trait validity, including *consistency of measure* – i.e., absence of measurement errors, *convergent validity* – i.e., the measure should not vary with the construct, and *discriminant validity* – i.e., the measure should not vary with other constructs. Second, nomological validity is concerned about the examination of the relationship among theoretical constructs, and the empirical relationships between measures of those constructs (Peter, 1981).

Ideally researchers should select research design that provides high degree in all kinds of validity. However, it is impossible due the nature of empirical research, as stated by McGrath (1982:69) that “the research process can be viewed as a series of interlocking choices, in which we try simultaneously to maximize several conflicting desiderata”- i.e., various validity forms. Typically, when the study scores high on one form of validity, it score low on other. For example, an empirical research conducted with classical experimental design may acquire high in internal validity; however, its external validity is likely to be low (Cook & Campbell, 1979; McGrath, 1982).

#### **7.4. Empirical setting**

Calder et al. (1981) dissect research application and identify two types of application in research: (a) *effect application* whose focus is on knowledge about some particular real-world context, and (b) *theory application* whose focus is on general and scientific knowledge about the real world. The latter application employs falsification procedures to test the particular theory or model in a certain context. Since this study is a theory testing research, this study is classified as a theory application.

In theory testing of causal model, internal and statistical conclusion validities are more important than external validity (Cook & Campbell, 1979) because external validity can be established by conducting several similar studies in different contexts. As a result, the chosen empirical setting must provide a sufficient variation over the main variables in the model, and no variation in other variable, as well as the sample should be homogenous

(Calder et al., 1981). However, it is hard to find such setting because variation in variables is generally from a heterogenic sample which comes with the variation over extraneous variables. Subsequently, it will be hard to rule out alternative explanations and establish any statistically significant effects of the focal independent variables in the model. On the other hand, if the sample is homogenous, variation over critical variable normally is not provided. Therefore, researchers must balance this tradeoff.

In order to acquire high scores on internal and statistical conclusion validities, one industry seems to be appropriate because it will ensure that the samples are homogeneous (Cook & Campbell, 1979). With one industry we presume that it will exclude or reduce confounding factors associated with a specific industry. External validity is sacrificed in order to acquire internal validity; and if the theory is not falsified in that certain industry, further research in other industries should be conducted to prove the external validity.

Nevertheless, even though this study proposes to employ with one industry which reducing the external validity, there will be differences between samples due to different segments of the industry, this study will include a broad selection of transactions, oil companies, and their suppliers. Some suppliers are specialist firms, while some supply commodity products. Ideally, only one segment should be sufficient to minimize noise. However, all segments will be included to ensure an optimal sample size. The need for a homogeneous context will be sacrificed in order to increase the sample size and statistical power.

The requirements of the empirical context will be fulfilled when all variables in the research model materialize in the empirical context to different degrees. Within this study, it means I must find an industry that demonstrates to varying degree of: (a) allocation of specific investments, (b) asymmetric power relationships, (c) hierarchical governance, and (d) relational governance.

There is one industry appearing to have the phenomenon of interest to varying degree. That is oil and gas industry (hereafter, O&G). Given an oil firm as a customer firm, it pays a straight fee for service or buys supplies and equipment from supplier firms or contractors, representing buyer-supplier dyadic relationships. These purchases have evolved from market based exchange toward more integrated relationship that transacting parties make either unilateral or bilateral specific investments and involve the sharing of risk and reward



(Ernst & Steinhubl, 1997). In the research model allocation of specific investments is an independent variable hypothesized to increase the degree of hierarchical and relational governances. Partners in O&G industry deploy specific investments in order to ensure that working targets are acquired while preserving the safety of people involved and minimizing the probability of damage to the environment (Green, 2003). As a result, the first requirement of specific investment allocation is likely to exist and materialize in this setting to different degrees.

The second requirement is the existence of asymmetric power to varying degree. In the research model power asymmetry is the moderating variable hypothesized to moderate the common effect of specific investments on hierarchical and relational governances. Within O&G industry, power asymmetry phenomenon exists between oil firms and their suppliers, and exhibits in two directions. The first direction is that an oil firm is the firm with relatively high power and its supplier firm is its weaker partner. Degree of asymmetric power is likely to be high because there are a small numbers of oil firms serving as operator firms but there are a large numbers of industrial vending firms providing products and services for the construction and maintenance of offshore fields (Reve & Johansen, 1982). These vending firms are direct competitors to each other in the open market (Green, 2003). The small numbers of oil firms increase the scarcity of rewards that oil firm provides to supplier firms, thus increasing the degree of power asymmetry. The second direction is that a supplier firm possesses power over an oil firm. Given O&G context, there is a type of supplier called specialist firm, normally a small firm. Such firms hold specialized knowhow and technology that an oil firm, normally a large firm, would like to acquire (Ernst & Steinhubl, 1997). Under the harsh and potentially hazardous conditions operator firms rely heavily on specialist contractors to support their operations (Green, 2003). Such technology may create technical dependency (Reve & Johansen, 1982).

The third and fourth requirements concern the mode of governance. Extant studies on mode of governance in O&G industry show that exchanges are governed by various types of structure. For example, Ernst & Steinhubl (1997) identify governance mode varying from hybrids to hierarchies between transacting parties. Green (2003), Green and Keogh (2000), and Sunde (2007) emphasize the existent, benefits, and development of trust in the industry. Olsen et al (2005) investigates applicability and limits of TCE or RCT.

Therefore, O&G industry seems to be appropriate empirical setting. However, in what country of this industry would be most suitable to conduct the test? I argue that O&G industry in Norway is likely to be the most appropriate for many reasons based on how important it is to the future EU economy and how possible it is to access to the data source.

The Norwegian O&G industry is currently the world third largest oil exporter (Alekklett, 2006) as well as for natural gas (Søderbergh et al., 2009). In fact, Norway is the second largest supplier of natural gas to the EU with a 21% share of EU gas imports in 2006. It is increasingly important because the natural gas production within EU entered a state of decline in 2004 (IEA, 2008). Moreover, the gas production of the UK, the major producer, is decreasing by 8 – 10% per year. Likewise, the gas production in the Netherlands peaked in thirty years ago and has been at a slightly declining plateau level. Denmark gas production is more likely to enter a state of decline next year (Søderbergh et al., 2009). Therefore, Norwegian continental shelf became a potentially substantial contributor to the Norwegian economy (Kashani, 2005).

The Norwegian O&G industry consists of several hundred companies. The exact number of the population of the transactions or relationships between buyer and supplier is difficult to obtain. However, Institute for Research in Economics and Business Administration (or SNF) has been conducting studies within this industry and have a list of supplier companies who sell a larger share of their products and services to other companies in the industry (Sunde, 2007). Data from SNF can provide a good start. In addition, I can also search the Internet to add relevant companies to the company list (Sunde, 2007), including [www.offshore.no](http://www.offshore.no), [www.oilinfo.no](http://www.oilinfo.no), [www.oilport.net](http://www.oilport.net), [www.intsok.no](http://www.intsok.no), [www.odin.dep.no](http://www.odin.dep.no), [www.og21.no](http://www.og21.no), [www.nfp.no](http://www.nfp.no), [www.olf.no](http://www.olf.no), [www.petromagasinet.no](http://www.petromagasinet.no), [www.petrad.no](http://www.petrad.no), [www.nortrade.no](http://www.nortrade.no), and [www.norskindustri.no/olje\\_og\\_gsss/](http://www.norskindustri.no/olje_og_gsss/).

In conclusion, I argue that the proposed empirical setting of O&G industry is likely to contain all of the relevant variables in the proposed research model. All critical variables are likely to exist to varying degree in the sample. These conclusions are drawn on the basis of research papers and publication in the industry. Further, the choice of one industry as the empirical setting will exclude and reduce confounding factors associated with the specific industry. External validity will be thus sacrificed in order to achieve the highest possible level of

internal validity, which is critical when conducting theory testing. Lastly, even though the supplier firms are from different segments, the setting is homogenous.

### **7.5. Sample frame and sample procedures**

Regarding sample size, literature is not consistent on this issue. There are several factors determining the appropriate sample size. However, we can divide it into two perspectives. First, we can take into account the experience from extant studies. There are a large number of empirical studies on closely related topics. In general, their sample size ranges from hundred and something to more than a thousand observations.

Second perspective is to consider the number of independent variables to be estimated. In addition, if moderating effect will also be under consideration, the required sample size will increase. The more independent variable, the larger sample size is required (Bollen, 1989; Hair, Anderson, Tatham et al., 1998). However, at least 100 informants are needed when conducting theory testing (Bollen, 1989). Low number of informants (low  $n$ ) and low alpha level may the possibility of making an incorrect no-different conclusion (Type I-error), rejecting a true model.

Bentler and Chou (1987) suggest a rule-of-thumb in this regard. They indicate a ratio between sample size and the number of free parameters as 5:1. However, since I plan to apply structural equation modeling, Hair et al (1998) suggest four factors to take into account: (a) model misspecification, (b) model size, (c) departure from normality, and (e) estimation procedure. Specification error occurs when relevant variables in the model are omitted. Sample size should be increased when researcher suspects this error. Basically, the ratio of 5:1 is recommended, however, a ratio of 10:1 is considered most appropriate; and if researcher suspects the data violate the assumptions of multivariate normality, the ratio is increased to 15:1.

To conclude, literature suggesting on an issue of sample size is highly divergent. Many factors can determine sample size. Basically, I can either estimate it from the prior study in the field or consider the number of variables to be estimated. Ratio between observation and variables are advised ranging between 5:1 to 15:1, depending on judgment of

researcher whether he/she suspects the specification error. In this proposal, the number of free parameters to be estimated is approximately 30. Since the literature does not give exact ratio, I use my best judgment based on argumentation above and decide to use the ratio of 10:1 which results in a sample size of 300 observations. As mentioned early, it is difficult to obtain the exact number of population of the dyadic relationships between buyer and seller in the O&G industry. The sample frame is estimated by sample size divided by expected response rate which can be acquired from the literature in the industry. Similar study by Sunde (2007) suggests that a response rate of approximately 40% can be expected. Therefore, the sample frame should consist of 750 informants. This number seems possible to identify, since Sunde (2007) could do at 800 informants in his study.

## **7.6. Measurement**

This section describes the different stages of the measurement process and presents all constructs included in the theoretical model.

### **7.6.1. The measurement process**

Regarding measurement process, Bollen's (1989) procedure is highly acknowledged and much cited. Bollen (1989) suggests that this process begins with the concept which is an idea that unites phenomena under a single term. The measurement process links the theoretically developed concepts to one or more latent variables, and these latent variables are further linked to observable variables. Four steps are also suggested: (a) give the meaning of the concept, (b) identify the dimensions and latent variables to represent it, (c) form measures, and (d) specify the relation between the measures and the latent variables.

The first two steps of this process were achieved in Chapter 3 and 4. First step, all of the theoretical constructs were defined and explained on the basis of extant literature. Second step, the dimensions and latent variables representing the construct were also explained. A theoretical construct may consist of one or more dimensions, therefore there needs to be one latent variable for each dimension of the construct. In this proposal there are four constructs in the theoretical model. Relational constructs have five dimensions, while all

other constructs have only one dimension. The main model consists of four constructs and, hence, nine latent variables.

The third step is to form measures to represent the latent variables in the theoretical model. This proposal applies established theoretical constructs and established measures that have been validated in previous research. This ease the forming measures process. Conversely, in the case where identical constructs are operationalized differently across empirical studies, it is difficult to accumulate knowledge (Churchill, 1979).

I conduct an intensive literature review in the field of inter-organizational relationships to identify potentially relevant empirical measure. Multiple measures are used to ensure that constructs are not underrepresented and the ability to test validity requirements is provided. Inter-organizational literature is well developed theoretically. Established and validated measures have been developed. The unit of analysis in this literature is mainly the relationship between a buyer and seller which is the same in my study. This implies that if the measures need to be rephrased to fit within the empirical setting, it will need only to a low degree. Therefore, the validity of the measurements should be convinced. However, face validity is planned to establish in order to increase the degree of validity. Face validity is a subjective evaluation of the measure validity by researcher (Frankfort-Nachmias & Nachmias, 1996). Face validity is established only when several experts from both industry and academic are consulted, such as purchasing professionals in oil firms, consultants, and academics engaged in procurement, logistics, and production planning. Furthermore, an archival study of standard purchasing contracts in O&G industry will be undertaken to examine whether my definition of hierarchical governance corresponded to contractual terms applied in such contracts. Following the archival study of standard contracts, a pilot study among some oil firms and their suppliers will be conducted to obtain preliminary tests of scales and to capture relevant issues for prospective measures of specific investments and firm power. This pilot study is expected to provide valuable information that guide further improvements of ambiguous questions, inappropriate vocabulary, and scaling methods (Hunt, Sparkman, & Wilcox, 1982).

The independent construct of specific investments has been operationalized and measured a number of times in the inter-organizational literature. This applies to both specific

investments and firm power. Likewise, the dependent construct of hierarchical governance and relational governance have been operationalized several times in relevant empirical studies. Therefore, it is likely to be straightforward to use their measures in the study.

The fourth step of measurement process is to specify the relations between the measures and the latent variables. This will be achieved after data are acquired and analyzed. Reflective scales will be used instead of formative scales because measures are assumed to share a common factor. As constructs increase its value, items' value should be reflected and increased. In addition, all constructs are measured by the use of perceptual data.

### **7.6.2. The measures**

Construct is defined too complex to be measured effectively with a single measure. It is necessary to use multiple indicators in order to receive construct reliability and validity (Peter, 1979). Bollen (1989) argue that at least two indicators should be incorporated per latent variable under a confirmatory factor analysis. However, Jaccard and Wan (1996) indicate that research with two indicators has the potential for analytic complications resulting from empirical under-identification. Accordingly, the operationalization of constructs in the study are all multiple-item constructs and with more than three items. The measures of each construct are described below. Measures of the dependent variables are presented first, and then the measures of independent variables.

#### **7.6.2.1. Dependent variable**

##### ***Hierarchical governance***

Hierarchical governance is defined as the degree to which one exchange partner has ability to develop rules (e.g. dispute resolution mechanisms), give instructions (i.e., formalization), and in effect impose decisions on the others (i.e., centralization), and to what degree the exchange partners follow the agreed upon rules and procedures during the execution of the exchange (Geyskens et al., 2006; Haugland and Reve, 2004; Stinchcombe, 1985). A scale is developed based on the inter-organizational literature, and adjusted to the appropriate

object of analysis and context. There seemed to be an agreement in the literature about operationalization of the formalization, while inconsistent for centralization. Indicators of formalization are developed based on Haugland and Reve (2004), while items reflecting centralization are developed based on Heide and John (1992). (9 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

### ***Formalization***

1. Either we or our partner have developed rules and procedures for most issues in the exchange.
2. How to handle the day-to-day management of the exchange is written in a formal contract document.
3. Both parties intend to follow jointly agreed upon rules and procedures in the daily management of the exchange.
4. It is important to us to behave correctly according to the contract.
5. In dealing with our partner, our contract precisely states how disagreements should be solved.

### ***Centralization***

1. The processes in the exchange are entirely decided by one party, either us or our partner.
2. Ongoing changes in the exchange are entirely decided by one party, either us or our partner.
3. Subcontractors/contractors are chose by one party, either us or our partner.
4. The quality control procedures in the exchange are entirely decided by one party, either us or our partner.

### ***Relational governance***

Relational governance is a governance mode characterized by the parties to a transaction jointly developing policies directed toward the achievement of certain goals. It refers to norms of obligation and cooperation for coordinating exchange process (Geysken et al., 2006; Haugland and Reve, 2004). Relational norms are expectations about attitudes and behaviors that are at least partially shared by a group of decision makers (Gibbs, 1981).

According to Cannon et al. (2000), Heide and John (1992), and Poppo and Zenger (2002), the norms below are of particular importance in cooperative relationships. Relational governance implies a certain degree of flexibility, solidarity, mutuality, harmonization of conflict, and restraint in the use of power.

### ***Flexibility***

Reliance on a norm of flexibility both parties are willing to make adaptation as circumstances change (Heide & John, 1992). This norm represents a safeguard to both parties if the exchange is plagued with high degree of uncertainty. Both parties know that the exchange will be subject to good-faith modifications and have an attitude that the agreement could be modified as the relationship evolves and develop.

Based on empirical studies (Antia & Frazier, 2001; Dwyer & Oh, 1988; Heide & John, 1992; Jap & Ganesan, 2000; Lusch & Brown, 1996; Rokkan, Heide, & Wathne, 2003) the items are adjusted to fit the context and listed below (3 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. Both parties are flexible in their response to last-minute requests made by the other party.
2. Both parties are open to each other’s request to modify a prior agreement.
3. When some unexpected situation arises, both parties would rather work out a new deal than hold each other to the original terms.



## ***Solidarity***

Reliance of solidarity parties has an attitude that success comes from working cooperatively together, not competing against one another. Parties stand by one another in the face of adversity and the ups and downs of marketplace competition (Cannon et al., 2000). “Solidarity promotes a bilateral approach to problem solving, creating a commitment to joint action through mutual adjustment.” (Poppo and Zenger, 2002: 710). A high degree of solidarity represents a safeguard to both parties because it deters both parties from using decision control in an opportunistic way.

Based on empirical studies (Antia & Frazier, 2001; Bello et al., 2003; Dwyer & Oh, 1988; Heide & John, 1992; Jap & Ganesan, 2000; Lusch & Brown, 1996; Rokkan et al., 2003) the items are adjusted to fit the context and listed adjusted to fit the context and listed below (3 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

Important problems that arise in the course of this exchange are treated by my firm and the partner firm as joint rather than individual responsibilities.

1. Both firms are committed to improvements that may benefit the exchange as a whole and not only the individual parties.
2. The firms do not mind owing each other favors.

## ***Mutuality***

Mutuality refers to a bilateral expectation and attitude that a party cannot succeed on the cost of its partner. Each party’s success is a function of everyone’s success and that one cannot prosper at the expense of one’s partner. Success depends on joint responsibility (Cannon et al., 2000).

Based on empirical studies (Achrol & Gundlach, 1999; Cannon et al., 2000; Gundlach et al., 1995; Lusch & Brown, 1996) the items are adjusted to fit the context and listed below (2 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. Both parties are concerned about the other’s profitability.
2. The exchange is grounded on mutual benefit and trust.

### ***Harmonization of conflict***

Harmonization of conflict refers to a bilateral expectation and attitude that conflicts are solved in the spirit of mutual accommodation toward cooperative ends (Cannon et al., 2000). This norm represent a can safeguard to both parties when both parties know that conflicts and unforeseen contingencies will be handled in good faith.

Based on empirical studies (Bello et al., 2003; Lusch & Brown, 1996) items are listed below (3 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. No matter who is at fault, problems are joint responsibilities.
2. When disagreements arise, we reassess all the facts and try to reach a mutually satisfactory compromise.
3. In dealing with our customer, we have a mutual understanding of how disagreements will be handled or resolved.

### ***Restraint in the use of power***

Restraint in the use of power refers to a bilateral expectation and attitude that power asymmetry and dependency should not be opportunistically exploited. It reflects the view that the use of power exacerbates conflict over time and undermines mutuality and solidarity, leading to opportunism (Cannon et al., 2000).

Based on Cannon’s et al. (2000), an item is presented below (1 item, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. One party will not take advantage of a stronger bargaining position.

### **7.6.2.2. Independent variable**

#### ***Specific investments***

Specific investments or asset specificity is defined as the degree to which the assets that support a given transaction, or modify processes, product technologies or procedures, are tailored to it and cannot be redeployed easily outside a particular exchange relationship (Cannon et al., 2000; Geyskens et al., 2006). Examples of specific investments are site specificity, physical specificity, human asset specificity, brand name capital, dedicated assets, and temporal specificity (Williamson, 1985, 1991). Since the switching costs arise if a firm is to change partner, these investments create dependency to a specific partner.

There seems to be a consistence in the literature regarding the definition and the operationalization of the construct. Base of empirical studies (Buvik & John, 2000; Cannon et al., 2000; Haugland and Reve, 1994; Heide & John, 1990; Heide and Stump, 1995; Joshi & Campbell, 2003; Rokkan et al., 2003) items are listed below (16 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

#### ***A firm’s specific investments***

1. We spent significant resources in reorganizing/adjusting our own organization in connection with this particular exchange.
2. We spent resources on training and developing our employees during this particular exchange.
3. We have made significant investments in tools and equipment dedicated to the exchange.
4. We have carried out considerable product adjustments in order to meet the requirements from this partner.
5. We have made several adjustments to adapt to this partner’s technological norms and standards.
6. In order to do business with this partner we have acquired competence, which has a limited value if the exchange is terminated or we stop doing business with this partner.

7. We have used considerable time and resources in order to build the relationship with this partner.
8. Exchange termination will be a great loss to our company.

#### ***A partner firm's specific investments***

1. In our perception, our partner spent significant resources in reorganizing/adjusting their organization in connection with this particular exchange.
2. In our perception, our partner spent resources on training and developing their employees during this particular exchange.
3. In our perception, our partner has made significant investments in tools and equipment dedicated to the exchange.
4. In our perception, our partner has carried out considerable product/service adjustments in order to meet the requirements from us.
5. In our perception, our partner has made several adjustments to adapt to our technological norms and standards.
6. In our perception, in order to do business with us our partner has acquired competence, which has a limited value if the exchange is terminated or our partner stop doing business with us.
7. In our perception, our partner has used considerable time and resources in order to build the relationship with us.
8. In our perception, exchange termination will be a great loss to our partner.

#### ***Power asymmetry***

Power asymmetry construct has been defined as the difference between a firm's power and its partner's power in a dyad (Gundlach & Cadotte, 1994; Kumar et al., 1995). Power is ability of a firm to control or influence the decision making of its partner (Anderson & Narus, 1990; El-Ansary & Stern, 1972; Etgar, 1977; Hunt & Nevin, 1974). The power of a firm over its partner is a result of its partner's dependence upon a firm (Emerson, 1962). The measure of asymmetric power is constructed by calculating the absolute value of the difference between a firm's power and its partner's power (Kumar et al., 1995).

As proposed by Emerson (1962) that power resides implicitly in the other's dependency, I choose to operationalize a firm's power in the way of operationalizing its partner dependence. Based on empirical studies (Brown et al., 1983; Kumar et al. 1998; Lusch & Brown, 1996) items to a firm power and its partner power are developed and listed below (6 items, 7-point scale, anchored by "to a very low degree" and "to a very high degree").

#### ***A firm's power***

1. Our partner is dependent on us.
2. Our part would find it difficult to replace us.
3. Our partner would find it costly to lose us.

#### ***A partner firm's power***

1. We are dependent on our partner.
2. Our partner would be difficult to replace.
3. Our partner would be costly to lose.

### **7.7. Control variables and rival predictors**

It is necessary to account for the potentially spurious effects of potential extraneous variables, so that these effects could be ruled out statistically. Data on variables that seems correlated with the dependent variables must be collected. Variables from other perspectives that offer competing explanations to varying degrees of governance mode must be considered. Once explanations from such perspectives are ruled out statistically, the confidence in the theoretical model will increase (Jøreskog & Sørbom, 1993; Meehl , 1990).

In this research proposal, variables from the same perspective are called control variables, whereas variables from other perspectives offering competing explanations for mode of governance are called rival predictors.

### **7.7.1. Control variables**

#### ***Environmental uncertainty***

Although uncertainty is a transaction dimension, it receives ample support in the organizational and institutional economics literatures that it is a key environmental dimension influencing mode of governance (Achrol, Reve, & Stern, 1983).

As specific investments increase to a non-trivial degree, the continuity of relationship is relevant. High degrees of environmental uncertainty creates problem of adaptation, as partner firms find it hard in specifying contractual agreement ex ante. Exchange partners will have to make sequential adaptations (Williamson, 1985). Moreover, change in environment offers opportunities for agents to shirk and to renegotiate to their advantage (Anderson & Gatignon, 1986).

Under the environmental change, the firm is likely to increase the degree of control by increasing the complexity of contract to cover all thinkable contingencies, meaning that the adaptation problem can be addressed through hierarchical governance. However, several researchers (e.g. Afuah, 2001; Balakrishnan & Wernerfelt, 1986; Folta, 1998) argue that high degrees of environmental uncertainty should also encourage firms to maintain flexibility by lowering the degree of specific investments which would argue against hierarchical governance (Geyskens et al., 2006). As a result, environmental uncertainty must be included as control variable.

Environmental uncertainty refers to the degree to which the relevant contingencies surrounding an exchange cannot be anticipated and accurately predicted (Geyskens et al., 2006; Pfeffer & Salancik, 1978). Rindfleisch and Heide (1997) suggest that among transaction dimensions, environmental uncertainty seems to be the most problematic construct. Two decisions must be made when operationalizing this construct. First, we must decide whether this construct is treated as an objective or perceptual measure. In this study, I decide to treat it as perceptual one because decision makers make their decisions based on their perceptions, not on objective numbers (Heide & John, 1995). Degree of environmental uncertainty depends on the eye of the beholder (Wathne, 2001).

Second issue is the sources where the construct should be studied and the type of uncertainty (Wathne, 2001). In this study the sources to study environmental uncertainty construct will be buyer market. Therefore, the type of uncertainty is buyer market unpredictability.

Based on empirical studies (Anderson, 1985; Buvik & Grønhaug, 2000; Celly & Frazier, 1996; Haugland & Reve, 1994; Heide & John, 1990; John & Weitz, 1988, 1989; Wathne, 2001;), items are developed and listed below. (3 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. Market demand is hard to predict.
2. The sales for this market is hard to predict.
3. The competition in this market is hard to predict.

### ***Opportunism***

Opportunism refers to “taking advantage of opportunities with little regard for principles or consequences” (Macneil, 1981) or self-seeking behaviors with guile (Williamson, 1975). Opportunism is likely to degrade the cooperative climate of the relationship, and is likely to be negatively related to relational governance. Based on empirical studies (Rokkan et al., 2003; Wathne & Heide, 2000) items are adopted and listed below (6 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. On occasion, the buyer lies about certain things in order to protect its interests.
2. The buyer sometimes promises to do things without actually doing them later.
3. The buyer does not always act in accordance with contract or agreement.
4. The buyer sometimes tries to breach informal agreements between to maximize its benefit.
5. The buyer will try to take advantage of “holes” in contract to further its own interests.
6. The buyer sometimes uses unexpected events to extract concessions from us.

### **7.7.2. Rival predictors**

#### ***Importance***

The complexity of an exchange is presumed to influence mode of governance (Williamson, 1979; Cannon et al., 2000; Sunde, 2007). Particularly the economic scope of an exchange is presumed to influence how firms organize the transaction. Partners pay more attention on crafting control structure when the exchange is more important. Therefore importance of exchange may create spurious effects between independent and dependent variables.

The importance of an exchange is operationalized by measuring this size of an exchange in term of number of people involved and financial value.

1. How many people are involved in an exchange?
2. How much is an exchange value?

#### ***Exchange length***

Exchange length is expected to affect mode of governance (Sunde, 2007). As time goes by, exchange partner develop mutual knowledge about each other. Increase in such knowledge will presumably influence the degree of hierarchical governance and the development of strengthener relational governance. Therefore, exchange length may be the source of spurious effects between independent and dependent variables.

1. When did the exchange start (mm.yyyy) and will be expected to end (mm.yyyy)?

#### ***Past experience***

Past experience between exchange partners is presumed to influence mode of governance, because past experience is likely to affect the development of relational governance (Sunde, 2007). Therefore, past experience may be the source of spurious effects between independent and dependent variables. Items are developed and listed below (2 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. We have many years of experience with this partner prior to this exchange.
2. We have had a very good relationship with this partner prior to this project.



### ***Future expectations***

Expectation about future business is presumed to influence the mode of governance (Sunde, 2007). Based on the “shadow of the future” effect, a firm is likely to perform better if the performance of the present exchange will affect future decisions and future business with its partner. A high expectation of future business will affect the degree of cooperative norms. Therefore, future expectation may be the source of spurious effects between independent and dependent variables. Items are developed and listed below (2 items, 7-point scale, anchored by “to a very low degree” and “to a very high degree”).

1. We expect to have future business with this partner.
2. We have a binding agreement to work with this partner in the future.

### **7.8. Data collection**

As there is no archival data available, there is a need to collect primary data. Structured questionnaires and key informant technique seems to be suitable when considering the nature of variables in the theoretical model. This sub-chapter will describe the key informant procedures and sampling procedures.

#### **7.8.1. The key informant technique and the number of informants**

The key informant technique has been commonly used for collecting data in inter-organizational research. Reliance on this technique, one or few informants with expert knowledge about the phenomenon of interest will be identified (Seidler, 1974). These informants are capable to describe critical factors of the unit of analysis and willing to communicate about them (Campbell, 1955; Phillips, 1981). Moreover, It is required that the characteristics of phenomenon described by informants must exist independently of the informants (Heide & John, 1995). If informants provide information about themselves, such information does not exist independently to the informants. The research must acquire information from a representative sample of informants (Wathne, 2001).

In this proposal, critical constructs are related to (a) mode of governance – i.e., level of hierarchical and relational governance, (b) transaction hazard – i.e., level of specific investments, and (c) firm power – i.e., level of asymmetric power. All these “phenomena” are assumed to be independent of the informants. Researcher can choose informant based on their knowledge instead of their representativeness in a statistical sense (Svendsen, 2005).

Basically, researchers can decide to (a) collect data from one or more informants from an individual organization and (b) collect data from one or both sides of the dyad. These two issues draw very much discussion (see, e.g., Bagozzi, Yi, & Phillips, 1991; Phillips, 1981). Regarding the first issue, should researchers collect data from one or more informants from the same firm? Phillips (1981) suggests using multiple informants because there is a low degree of convergence among informants representing the same unit. However, using single informant design becomes more dominant approach due to the resource constraints and implacability. First, since researchers may have limited time and resources, it is always possible to use multiple informants. Under single informant design, data can be registered directly as report of informant. Investigation can be kept at the structural level and requires not so high cost (Seidler, 1974). Second, it may be implacable to collect data from many informants from the same firm. Some firms may only “establish one person as the focal point for relations with a given supplier” (Heide & John, 1990: 30) or customer.

The second issue, should researchers collect data from one side or both sides of the dyad? The answer depends on the degree of potential discrepancies between both party’s perception on the variables in the model. It is likely to be appropriate to collect data from both sides because researchers can validate the data from one side against those from another side in order to obtain more correct value. Many empirical studies adopt this approach (e.g., Anderson & Weitz, 1992).

However, if such discrepancies are assumed to be trivial, a single-side design is sufficient. Collecting data from both sides is time consuming and requires a lot more resources (Kumar, Stern, & Anderson, 1993). Since this study has limited time and resources, collecting data from one side of the dyad seems more appropriate. Second, if we have data from both sides, the analyzing process also requires more time to conduct because we will have many

observations for the same phenomenon (Kumar et al., 1993) and the data must be analyzed for convergences and joint understanding should be reported. There may be interpretation ambiguity, unlike the case of single informant data collection. Using data from one side, the results are directly report. No requirement of analysis of data divergence.

Third benefit from collecting data for one side in dyad is that researchers can focus as many observations as possible. Even though reliance on multiple-informant for each relationship is preferred due to its advantage of avoiding or reducing the risk of biased information (Phillips, 1981), collecting data from multiple-informants is time consuming and would certainly reduce the number of observations.

Importantly, literature in the field of inter-organization relationships concludes that it is justifiable to conduct one-side approach (Heide & John, 1994). Many empirical studies with the same variable in the models argue that there is correspondence between measures of variables, such as the structural form of the relationship (John & Reve, 1982), specific investments and commitment in the relationships (Anderson & Weitz, 1992). Therefore, there is some evidence that, to some extent, there is a correspondence between buyer and seller perceptions of the variable in the model. On this basis, it is likely to be justifiable to sample from one side of the dyad.

In this study, I will collect data from one side of the dyad. I will contact general managers in the relevant companies, and ask them to select their firm representatives who are knowledgeable and have willingness to be informants. Since the unit of analysis is the relationship, a choice of informant is the marketing or sales or product or brand managers, or dedicated salespersons with in-depth knowledge of the project. Accordingly, the requirements of Campbell (1955), Phillips (1981), and John (1984) should be satisfied. Marketing managers have deep understanding about the exchange, customers, and power asymmetry between their firms and customers' firms.

I conclude that the multiple-informant approach on both buyer and seller firms is not practical due to the resource constrains in this research. Moreover, there is empirical evidence that gives support to one-side approach (Heide & John, 1994).

### **7.8.2. Sampling procedures**

I plan to collect data in three phases. First, qualitative data will be collected from specially selected suppliers in the O&G industry. Second, informants from the relevant companies will be identified. Third, a structured questionnaire will be prepared and sent out by email.

First phase is to become familiar with the empirical setting and make contact with the relevant companies. In addition, I can also become familiar with practical use and practical understanding of critical constructs and the hypothesized relations between them. In this phase, qualitative data will be collected through interviews with specially selected marketing managers in the supplier companies.

Phase two is to identify of informants in the supplier companies. Since Sunde (2007) received a list of approx. 400 relevant supplier companies in O&G industry from the institute for Research in Economics and Business Administration (SNF AS), a source of list is available. These companies are in all size from small to very large; and provide all sorts of products and services supporting activities in O&G industry. In this study, marketing manager of each company will be contacted, as this person is assumed to meet Campbell's (1955) criteria.

Last phase is to distribute emails and reminders. There will also be a one-by-one telephone call to the informants after the second reminder.

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