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Different roles of control mechanisms in buyer-supplier conflict: An empirical study from China☆

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ABSTRACT

Using transaction cost economics and contemporary insights from the literature on relationship contracts as a base, this paper focuses on how control mechanisms (contracts and trust) affect relationship conflicts in buyer-supplier relationships, and investigates the moderating effects of environmental uncertainty. Based on a sample of 162 Chinese buyers, this paper shows that contracts have a U-shaped effect on destructive conflict and an inverted U-shaped effect on constructive conflict, while trust has a negative effect on destructive conflict and a positive effect on constructive conflict. In addition, environmental uncertainty strengthens the U-shaped effect of contracts on destructive conflict, but weakens the inverted U-shaped effect of contracts on destructive conflict and strengthens the effect of trust on both types of relationship conflict. Our findings reveal the "double-edged sword" nature of contracts, especially the "dark side", and highlight the importance of trust in buyer-supplier relationships in contexts of environmental uncertainty. These findings also have important implications for buyer-supplier relationship management research and managerial practices, particularly in regard to governance structure and conflict management in dynamic contexts.

1. Introduction

The importance of managing conflict in buyer-supplier relationships has long been recognized by marketing scholars (Celuch, Bantham, & Kasouf, 2011; Dant & Schul, 1992; Skarmeas, 2006). Scholars have realized that relationship conflicts cannot simply be regarded as good or bad. If managed properly, they can be constructive, and if not, they can be destructive (Li, Liu, & Liu, 2011; Menon, Bharadwaj, & Howell, 1996; Rawwas, Vitell, & Barnes, 1997). Many studies have investigated the process of conflict management from this perspective, using dependence, power, influential strategy and other relational factors (Lee, 2001; Massey & Dawes, 2007a; Skarmeas, 2006; Spinelli & Birley, 1996; Zhou, Zhuang, & Yip, 2007).

Although these studies are insightful, there remain several gaps in the buyer-supplier conflict management literature. First, the literature focuses mainly on how to inhibit destructive conflict, but rarely considers how to leverage constructive conflict (Skarmeas, 2006), so studies examining how to simultaneously manage these two types of buyer-supplier conflict are inadequate. To manage these two types of relationship conflict more effectively, appropriate conflict management approaches must be identified. Second, control mechanisms such as contracts and trust can clarify the phenomenon of conflict management, as they indicate the origin of conflict (Vaaland & Hakansson, 2003). The potential effects of contracts (Brown, Coob, & Lusch, 2006; Jap & Ganesan, 2000) and trust (Celuch et al., 2011; Massey & Dawes, 2007a) on buyer-supplier conflict management have been recognized, but the empirical findings are mixed (Bai, Sheng, & Li, 2016) and the functions of contracts and trust in relationship conflict management are still unclear. Third, the contingent effects of environmental uncertainty on the relationship between control mechanisms and conflict have been overlooked (Liu, Luo, & Liu, 2009; Wang, Yeung, & Zhang, 2011). Thus, buyer-supplier relationship management researchers need to conduct further assessment of the interaction between the control mechanisms of relationship conflict and the environment in which the relationships are embedded (Bai et al., 2016). Attention should be particularly focused on how the benefits derived from control mechanisms can be contingent on the market's environmental conditions and on the response to these external influences.

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The literature on relationship conflict management mainly focuses on the problem of the hold-up and investigates the roles of control mechanisms (such as contacts and trust) in resolving incentive conflicts (Brown et al., 2006; Massey & Dawes, 2007a; Zaheer, McEvily, & Perrone, 1998). The role of contract governance in suppressing or bolstering buyer-supplier conflict remains under-examined. Our approach is distinct from most of this research, and we argue that in linking control mechanisms and relationship conflict in the buyer-supplier relationship, in addition to the consideration of incentive conflict (hold-up), the failure to adjust the relationship to changing exchange conditions may evoke relationship conflict (Gulati, Lawrence, & Puranam, 2005). We attempt to provide a more integrative understanding of relationship management by exploring how the application of control mechanisms (contracts and trust) can be related to relationship conflict. First, unlike previous research that mainly emphasizes the control function of contracts, we analyze the functions of contracts in detail by examining both their control and coordination roles, and clarify the effects of contracts on buyer-supplier conflict. Second, we extend the research on trust in the buyer-supplier relationship by assessing the effects of inter-firm trust on relationship management in a cooperative and adaptive manner, demonstrating that trust may not only imply an expectation of obligation (Celuch et al., 2011), but also provide an incentive for mutual adaptation and/or adaptation to changing environmental conditions (Hallen, Johanson, & Seyed-Mohamed, 1991). Third, by examining the moderating effects of environmental uncertainty, our study provides new insights for researchers to understand the role of contracts and trust in shaping responses to external challenges. Our research reveals that the effects of an external factor—environmental uncertainty—on inter-firm relationships are mitigated by a firm's decisions/practices on how to manage "internal conflict." In sum, the study extends the literature on control mechanisms and relationship conflict management and the general scope of the field.

The paper is organized as follows. First, we describe the relevant literature on buyer-supplier relationship management, develop a conceptual model, and propose corresponding hypotheses. We then present the results of empirical analyses using data from 162 Chinese buyers. Finally, we discuss the most significant findings and their theoretical and managerial implications, and consider the study's limitations.

2. Theoretical background

2.1. Types of buyer-supplier conflict

Relationship conflict refers to the tension between two or more entities, which arises from the incompatibility of actual or desired responses (Rawwas et al., 1997). Previous research on buyer-supplier conflict management can be divided into two categories. Some researchers suggest that conflict between members is a harmful dysfunctional phenomenon and always has destructive consequences (Anderson & Narus, 1990). In contrast, others argue that buyer-supplier conflict is a functional phenomenon in nature, and that amicably resolving partners' disagreements on how to realize joint goals promotes the development of buyer-supplier relationships (Stern, El-Ansary, & Coughlan, 1996; Tjosvold, 1997).

As a multidimensional concept, relationship conflict has destructive and constructive dimensions (Rawwas et al., 1997; Song, Dyer, & Thieme, 2006). Constructive conflict is defined as an evaluative appraisal, in which the effects of a recent effort to manage disagreements and find a compatible solution are evaluated. Thus, it is characterized by low levels of intensity and frequency and is impersonal (Rawwas et al., 1997). Constructive conflict has been labeled as discussion, bargaining, debate, or a win-win approach in which the participants agree through discussion on the best way to perform the current task (Li et al., 2011; Song et al., 2006). The benefits of constructive conflict outweigh its costs, so it provides firms with a good feeling about their relationship and motivates them to strengthen their connections, resulting in positive changes in collaborative relationships. In contrast, destructive conflict is caused by strong forces that push the parties toward increasingly hostile behavior, and each party tries to guarantee its own interests, which leads to conflict (Rawwas et al., 1997). It is characterized by a high intensity and frequency and is very personal (Rawwas et al., 1997). Destructive conflict is usually regarded as involving domination and control, or a win-lose approach, which may result in harmful consequences such as feuding or the destruction of relationships (Li et al., 2011).

As mentioned previously, constructive and destructive conflict can both influence the buyer-supplier relationship, but in different ways, as the actions taken when handling inter-organizational inconsistency can also differ (Song et al., 2006). It is therefore necessary to manage the two types of buyer-supplier conflict effectively through suitable control mechanisms.

2.2. Control mechanisms as the mode of managing buyer-supplier conflict

Control mechanisms (e.g., contract, asset specificity, trust, or relational norms) are the necessary and effective tools used to manage buyer-supplier conflict (Heide & John, 1992; Heide, Wathne, & Rokkan, 2007; Jap & Ganesan, 2000). Contracts and trust are the most traditional and typical control mechanisms used in supply chains in China (Cao & Lumineau, 2014; Liu et al., 2009; Lumineau & Henderson, 2012; Yang, Zhou, & Jiang, 2011), so we focus on these two control mechanisms.

2.2.1. Control and coordination functions of contracts

Drawing from TCE theory, a classic contract is interpreted in a very legalistic way, and the rules of the contract are strictly applied (Williamson, 1991). Williamson (1991, p. 271) argues that "each generic form of governance needs to be supported by different forms of contracts," so contracts in different inter-organizational relationships can have varying intentions and complexities. Hart and Moore (2008) provide an alternative and complementary view, suggesting that a contract provides a reference point for the parties' trading relationship. They argue that an ex ante contract that precisely identifies the future outcome could reduce the possible deadweight loss during exchange, and that such a contract may have significant drawbacks, as it does not allow the parties to adjust the outcome to the state of the world (Hart & Moore, 2008). An optimal contract should therefore be a trade-off between rigidity and flexibility. A detailed contract can be either rigid or flexible (Sande & Haugland, 2015), and in practice contracts may detail the level of coordination and potential adjustments that need to be undertaken (Mooi & Ghosh, 2010) or the rights and obligations of parties within an exchange arrangement (Lumineau & Malhotra, 2011). Our focus is on the detailed contract that specifies the roles and responsibilities to be performed, determines the outcomes to be delivered, and specifies adaptive processes for handling unplanned events or resolving unforeseeable outcomes (Wuyts & Geyskens, 2005).

Contracts have dual functions of control and coordination (Faems, Janssens, Madhok, & Looy, 2008; Lumineau & Malhotra, 2011; Mellewigt, Madhok, & Weibel, 2007). A detailed contract can have a control function, containing numerous clauses specifying what is and what is not allowed, and inflicting penalties for violations during an inter-organization transaction (Faems et al., 2008). In a mature legal system, a contract with specific terms and clauses provides a safeguard against ex-post performance problems, by restraining each party from pursuing private goals at the expense of their partners' benefits (Luo, 2002). It also contains penalty terms, so if either party violates or disobeys the agreed-upon provisions, they are strictly punished by the law (Lyons & Mehta, 1997). Consequently, a detailed contract has a control function, which reduces the likelihood of conflict leading to a destructive outcome, by confining the participants' behavior in the

frame of formal rules.

Contracts also have a coordination function, which provides procedures for the integration of dispersed activities and simplifies decision making, preventing disputes over how tasks are achieved (Faems et al., 2008). Gulati et al. (2005, p.419) argues that 'coordination problems arise from a lack of shared and accurate knowledge about the decision rules that others are likely to use and how one's own actions are independent from those of others'. A contract can help to overcome potential misunderstandings and coordination difficulties that can arise from differences in managerial or organizational practices (Luo & Park, 2004). Detailed contract terms specify many evident prerequisites and anticipations, which ensure that exchange participants commonly understand their respective duties in the transaction process (Malhotra & Lumineau, 2011). Luo (2002) argues that contracts include not only term specificity but also contingency adaptability, which refers to the extent that unanticipated contingencies are accounted for and relevant guidelines for handling contingencies are followed. Open clauses included in the contracts provide partners with opportunities to make future adjustments (Mooi & Ghosh, 2010). Faems et al. (2008) suggests that a broad contract structure enhances the joint problem definition and joint problem solving, which encourages coordination between partners. Thus, detailed contracts avoid the potential risk of breaking the collaborative relationship by clarifying the rules and procedure of transactions (Lumineau & Malhotra, 2011; Malhotra & Lumineau, 2011).

2.2.2. Cooperation and adaptation functions of inter-firm trust

The literature on business-to-business marketing points out that trust, as a salient control mechanism, is usually viewed as an important element in the calculation of perceived risk (Das & Teng, 1998; Gulati et al., 2005; Lui & Ngo, 2004). Trust is 'the degree to which the trustor holds a positive attitude toward the trustee's goodwill in a risky exchange situation' (Das & Teng, 1998, p. 494). We suggest that inter-firm trust primarily affects the perceived relational risk and results in different levels of willingness and ability in inter-firm cooperation and adaptation.

In essence, the problem of cooperation is one of interest divergence, and can be resolved by aligning interests (Gulati et al., 2005). Some scholars indicate that inter-firm trust can increase both confidence in collaboration and willingness for risk taking (Das & Teng, 1998; Hallen et al., 1991). When trust exists, firms are more likely to believe that their partners are benevolent and reliable, and thus act in a responsive manner while considering their partners' interests, even in the absence of control (Das & Teng, 1998). Firms are then ready to address hazards and take voluntary cooperative action.

The changes in demand and requirements on the amount, quality, and delivery time compel both parties to make adjustments (Jeffries & Reed, 2000), resulting in increased adaptation. Inter-firm trust can mitigate the problem of adaptation by first enhancing the willingness of partners to consider the common interest and to strive for desirable accommodation (Das & Teng, 1998). Greater flexibility for transaction then allows partners to accommodate their deviation from contracts when necessary. Firms can then benefit when they respond positively to unexpected changes. Inter-firm trust can reduce information asymmetry between two partners, prompting deeper and wider information sharing (Hallen et al., 1991; Jeffries & Reed, 2000). Consequently, because of the tacit understanding and flexibility between partners that stem from trust, firms can predict their partners' behavior more effectively and adapt their own actions in advance to achieve better fitness.

2.3. The contingent influence of environmental uncertainty on managing conflict

Environmental uncertainty refers to instability and unpredicted external elements on which the exchange is contingent (Abdi & Aulakh, 2014; Zhou & Poppo, 2010). As organizations in a transitional economic environment, Chinese firms face more environmental uncertainty, including rapid technological change, market demand and market competition due to relatively under developed government, legal, and financial institutions (Li & Gima, 2001; Zhou & Poppo, 2010). Given the multifaceted uncertainties that firms/managers may face, we mainly focus on the market's environmental uncertainty, which includes intense competition, unpredicted consumer needs, and rapid technological change. Environmental uncertainty exacerbates information asymmetry in the exchange decision process (Krishnan, Martin, & Noorderhaven, 2006), increases the complexity and difficulties of coordination in transaction, and challenges participants' expected collaboration mechanisms and objectives. Aulakh and Gencturk (2002) note that environmental uncertainty may eventually affect the dynamics between partners and their adherence to contractual obligations and contract enforcement, demonstrating that the consequences of contracts on the effectiveness of relationships depend on environmental uncertainty. Similarly, Krishnan et al. (2006) suggest that the benefits of trust increase under certain conditions and diminish under others. Environmental uncertainty therefore influences a firm's decisions and actions, which may change the effectiveness of the control mechanisms that manage buyer-supplier conflict.

Based on the preceding discussion, we put forward a conceptual model (shown in Fig. 1) that shows the effects of contracts and trust on destructive and constructive conflicts in the buyer-supplier relationship. We further investigate the moderating effects of environmental uncertainty on the relationship between control mechanisms and buyer-supplier conflict.

3. Hypotheses

3.1. Detailed contract and buyer-supplier conflict

Transaction cost theory holds that contracts can work as control mechanisms for buyer-supplier relationship governance (Williamson, 1991). Wuyts and Geyskens (2005) argue that detailed contracts using standard terms that are legally enforceable can mitigate decision-maker anxiety and bring clarity. Detailed contracts specify the responsibilities and obligations of exchange, so partners regulate the punishments for contract-violating behavior. Thus, detailed contracts can effectively restrict firms' behavior, ensure the process of transaction, and thus ultimately avoid destructive conflicts resulting from exchange partners' unexpected behavior. Second, detailed contracts clarify profit distribution among partners, informing each side of their own expected benefits, so this acknowledgement can lessen the relational destructive conflict resulting from unfair profit distribution. Third, detailed contracts can incorporate individual objectives into a collective goal through ex-ante clarities. The contractual specifications can then help exchange parties to understand the expectations of each side in the transaction and mitigate the risk of misunderstanding (Malhotra & Lumineau, 2011).

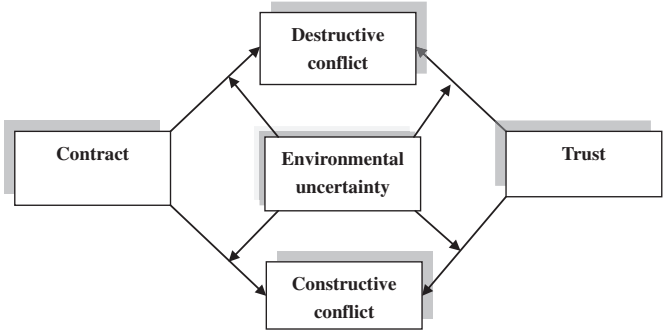

Fig. 1. Concept model of this research.

However, we suggest that detailed contracts still have costs and cause problems. First, when contracts are too detailed, exchange parties may place more emphasis on rights, prohibitions, and legal sanctions and are likely to result in a win-lose scenario (Lumineau & Malhotra, 2011). According to Lumineau and Malhotra (2011), a detailed contract contains explicit provisions regarding sanctions, creating incentives for each side to defend their behavior and typically interpret events and motivations in a self-serving manner. Second, more detailed contracts may signal distrust by constraining the behavior of partners (Jap & Ganesan, 2000), which can encourage opportunism or antagonism in situations that are not specified within a contract (Wuyts & Geyskens, 2005). An overly detailed contract can thus be a hazard, making the relationship over-safeguarded and over-monitored, leading to a greater tendency for destructive conflict (Sande & Haugland, 2015).

As the level of detail in contracts increases from low to moderately high, specific role responsibilities and obligations and the clarity of benefit distribution schemes and sanction measures increase accordingly, providing effective monitoring and restriction of the behavior of supply chain members. As the level of detail in contracts increases from low to moderately high, their control functions are enhanced, decreasing destructive conflict in the buyer-supplier relationship. However, as the level of detail in contracts increases from moderately high to very high, considerable costs and problems such as the self-serving and win-loss framing dispute approach and inter-firm distrust can result, which may weaken the safeguarding effects of contracts (Lumineau & Malhotra, 2011). In addition, the “rigidity” of contracts is more pronounced when they contain too much detail, increasing the boomerang effect of detailed contracts on the buyer-supplier relationship. In short, as the level of detail in contracts increases from moderately high to very high, the safeguarding effects diminish and the boomerang effects increase, weakening the control function of detailed contracts and increasing the probability of destructive conflicts. Therefore, a moderately detailed contract is optimal for managing destructive conflicts within the buyer-supplier relationship.

H1a. Contracts have a U-shaped effect on destructive conflict within the buyer-supplier relationship.

A detailed contract can be a form of coordination. Items concerning rights, obligations, awards, and punishment provide a good template for inter-organizational coordination (Li, Poppo, & Zhou, 2009). A detailed contract has good contingent adaptability when it includes guidelines for explaining and dealing with unexpected emergencies, and thus provides exchange partners with basic principles, policies, and possible solutions to deal with divergences and emergencies (Luo, 2002). Using the contingent stipulations of the contract, transaction participants can discuss current conflicts and contradictory viewpoints in a friendly manner within the frame of the collaboration agreement, and may eventually reach a consensus that leads to cooperation.

If the level of detail in contracts increases from a high to a very high level, constructive conflict between the exchange parties may be deterred. Brown et al. (2006) argue that increasingly detailed contracts reduce the flexibility and autonomy of the buyer-supplier relationship, causing frustration and subsequent conflict. Excessively detailed contracts can be a hazard because they can make the relationship over-coordinated and less flexible, fostering resistant and defensive emotions, and in turn decreasing constructive conflict (Mooi & Ghosh, 2010; Sande & Haugland, 2015). Decreased autonomy can, however, impede an open and harmonious atmosphere necessary for constructive conflict.

In summary, we argue that as the level of detail in contracts increases from low to high, the contingency adaptability is likely to increase accordingly, which may provide a tolerance zone or an excuse doctrine negotiation by delineating principles, guidelines, and possible solutions in uncertain times or in unanticipated situations (Luo, 2005). Increased contingency adaptability enhances the constructive conflict within a buyer-supplier relationship. However, as the level of detail in contracts increases from high to very high, reduced flexibility and autonomy weakens the coordinating effects of contracts, which may decrease constructive conflict. Thus, a moderately detailed contract is optimal for increasing constructive conflict within the buyer-supplier relationship.

H1b. Contracts have an inverted U-shaped effect on constructive conflict within the buyer-supplier relationship.

3.2. Inter-firm trust and buyer-supplier conflict

Scholars have conducted a considerable amount of research on the effects of inter-firm conflict on relational outcomes, examining areas such as relationship satisfaction (Lee, 2001), relationship continuity (Bradford, Stringfellow, & Weitz, 2004), and trust and cooperation in the aftermath of conflict (Malhotra & Lumineau, 2011). Researchers appear to agree that different forms of conflict can affect trust differently. However, we consider destructive and construction conflict in the buyer-seller relationship, a critical consequence of trust for inter-firm relationship harmony and efficiency that has received little direct attention. The “dark side” of relational trust has been identified (Mcevily, Perrone, & Zaheer, 2003; Villena, Revilla, & Choi, 2011), but we expect inter-firm trust to promote cooperation in exchange and facilitate partner adaptation, which can lead to positive relational behavior without negative consequences.

Trust increases firms' confidence in the buyer-supplier transaction and improves cooperation. A firm is more likely to regard a partner as trustworthy and reliable if its level of trust in the partner is high, and if it believes the partner will consider its wellbeing before making decisions and taking action (Wang et al., 2011). Even if the partner's behavior then turns against the focal firm's expectations, the focal firm may view this as benevolence, rather than advantage-taking behavior to gain benefit. The loss is temporary and will be compensated in the future.

Thus, the divergence of interest is reduced with an increased level of trust, and the destructive conflict driven by benefit disputes decreases. High-level inter-organizational trust also assures the coherence of bilateral targeting, with partners expecting their collaboration to result in a win-win situation (Liu et al., 2009). Both sides then strive to realize the ultimate goal of collaboration, lessening the destructive conflicts that can stem from differences in objectives. Trust in the buyer-supplier relationship reduces uncertainty about a partner's behavior and makes it more predictable (Li et al., 2009). In emergencies, a firm's actions are based on its partner's trust, reducing the destructive conflict arising from behavioral uncertainty accordingly. To conclude, trust in buyer-supplier relationships increases collaboration and behavior consistency between transaction partners and diminishes the interest divergence and difference in objectives, which reduces destructive conflict in the buyer-supplier relationship.

H2a. Trust has a negative effect on destructive conflict within the buyer and supplier relationship.

Trust promotes a climate of communication and mutual understanding within a cooperative relationship (Das & Teng, 1998; Li et al., 2009; Szulanski, 1996) and thus has the function of adaptation. Muthusamy and White (2005) suggest that there is a positive relationship between trust and collaborative behavior through self-disclosures, information exchange, and cooperative problem solving. When trust exists, partners are more likely to empathize with each other and create interests in a common community. Instead of withholding different ideas for the sake of courtesy, both sides can convey information about any disagreement occurring in the collaboration process honestly and carefully, which is beneficial to the common interest. They are inclined to listen to and adopt each other's opinions and suggestions, carrying out constructive conversation and coordination, which then leads to an

increase in constructive conflict. Smooth interactions and information sharing then enable partners to handle disagreements more effectively and efficiently (Das & Teng, 1998; Uzzi, 1997). They can attain an optimal solution and retain the stability of a collaborative relationship. Trust in the buyer-supplier relationship thus makes partners treat disagreements more objectively and formulate the best solution through fair, open, and in-depth discussion. This solution may in turn increase their willingness to discuss divergences constructively and meaningfully. Partners then form a virtuous cycle and maintain a high level of constructive conflict.

H2b. Trust has a positive effect on constructive buyer-supplier conflict within the buyer-supplier relationship.

3.3. Moderating effects of environmental uncertainty

A contract possesses the legal power to regulate and restrain transaction participants' behavior according to ex ante clauses. To a large extent, it avoids unnecessary disputes and warrants favorable collaboration. Environmental uncertainty increases the challenges and uncertainty of cooperation between partners. When environmental uncertainty is high, a moderately high level of contract detail can effectively regulate and monitor each party's behavior, thereby decreasing destructive conflict and safeguarding the exchange relationship. Environmental uncertainty may then amplify the control provision of a medium-level detailed contract on destructive conflict in a buyer-supplier relationship. In contrast, when a firm is suffering from environmental uncertainty, overly detailed contracts illustrate the rigidity of contracts. Thus, the transaction surroundings may diverge from the original intention, and it becomes difficult to rigorously implement specific clauses (Wang et al., 2011). In an uncertain environment, firms must cope with frequent and rapid changes in exchange rates and high inflation, which compel them to adjust their strategy and expectations (Aulakh & Gencturk, 2002). However, overly detailed contracts hardly enable firms to adapt to changing environments due to the high cost of renegotiation, as a contract is difficult to modify once drafted and signed. The overly detailed contract thus cannot balance the profit gained by each side, so fierce conflict between exchange partners may break out when they attempt to protect their own interests. Such conflict can be extreme and irrational, resulting in discontent or even termination of the exchange relationship. We therefore propose the following hypothesis.

H3a. Environmental uncertainty moderates the U-shaped effect of contracts on destructive conflict within the buyer-supplier relationship. The U-shaped effect is stronger when environmental uncertainty is high rather than low.

A contract includes provisions that address contingencies that could threaten the exchange relationship (Argyres, Bercovitz, & Mayer, 2007). They ensure that both sides share an understanding of their respective roles, and offer contingent clauses for reference when circumstances confound expectations. However, when environmental uncertainty disturbs the equilibrium of the buyer-supplier exchange, the coordination function of contracts becomes more restrictive, and anticipated assumptions may no longer effectively facilitate joint understanding. Additionally, environmental uncertainty introduces risk to the decisions of transaction participants. To mitigate this hazard, participants may make judgments for selfish reasons. For example, they may exploit loopholes in contracts, and even intentionally misinterpret the terms of implicit premises or joint anticipation to favor their own ends (Bigsten, Collier, Dercon, & Fafchamps, 2000). Therefore, the potential benefits of flexibility and contingent adaptability in contracts may not be realized. Generally, when environmental uncertainty is high, contracts are unlikely to improve the conflict disposition through bilateral communication and coordination within the collaboration framework (Uzzi, 1997; Zhou & Poppo, 2010), becoming ineffective in inducing sound decisions or solutions through opinion exchange. A contingency may provide an opportunity for one party to take advantage of the other (Argyres et al., 2007), weakening the original coordinating function of contracts. We propose the following hypothesis.

H3b. Environmental uncertainty moderates the inverted U-shaped effect of contracts on constructive conflict within the buyer-supplier relationship. The inverted U-shaped effect is weaker when the environmental uncertainty is high rather than low.

Environmental uncertainty increases unpredictability and hazards in firms' interaction processes. An unexpected environment increases risk by reducing management control over operations (Ring & Van de Ven, 1992). Firms must then build and maintain stable relationships and select reliable partners to reduce the risk of exchange. Trust is an effective tool for reducing destructive conflict, as it enables the parties to feel more confident in their planning and act as if the future is more certain (Li, Poppo, & Zhou, 2008). Reliable partners effectively reduce the cost of estimation and renegotiation, and the risk of coordination, so the guarantee of benefits also reduces destructive conflict, particularly in cases of environmental uncertainty. When environmental uncertainty is higher, mutual trust allows for constructive interpretation of partner motives and reduces the potential for destructive conflict (Krishnan et al., 2006).

H4a. Environmental uncertainty strengthens the negative effect of trust on destructive conflict within the buyer-supplier relationship.

When environmental uncertainty is high, buyer-supplier collaboration suffers from threats and unstable factors in market forecasting and/or cooperation tactic transformation. However, environmental uncertainty provides the opportunity for trust to work more effectively. First, Dyer and Chu (2003) argue that when trust is high, suppliers are more willing to share their confidence or valuable information (about product design and product cost, for example). The higher the environmental uncertainty, the more necessary and valuable the information sharing may become. More valuable and timely information sharing can be viewed as a signal of cooperation, which leads to a win-win solution approach and a constructive outcome. Second, a high level of inter-organizational trust means firms are more open to questions, challenges, or alternate points of view, which can greatly improve their common understanding and mutual coordination (Massey & Dawes, 2007b). Thus, in an uncertain environment, open and sincere communication between partners may remove disagreements and enable partners to find more useful solutions. Inter-organizational trust also provides the flexibility to mitigate exchange hazards in times of uncertainty and strengthens bilateral commitments to exchange-specific investments when faced with inevitable uncertainties (Luo, 2002). Inter-organizational trust thus allows transaction participants to communicate positively and handle any differences actively and rationally, leading to a climate more conductive to constructive conflict when participants are faced with environmental uncertainty.

H4b. Environmental uncertainty strengthens the positive effect of trust on constructive conflict within the buyer-supplier relationship.

4. Methods and analysis results

4.1. Data collection

In line with Gerbing and Anderson's (1988) approach for survey instrument development, we conducted interviews with managers of 10 buyers firms to explore the issues related to conflict and control mechanisms in buyer-supplier relationships. Based on these interviews, a literature review was conducted and questionnaires were developed. The measurements were adapted from previous research studies. We used the translation and back-translation technique to maintain the cross-cultural equivalence of the interview questionnaire

(Douglas & Craig, 2006). We then conducted a pretest with 10 experienced purchase managers who had a minimum of 4 years of exchange experience with suppliers. We obtained feedback and comments from these managers to ensure the clarity and appropriateness of the items. In addition, based on a pilot survey involving 10 face-to-face interviews with managers to verify our measures, items with loadings lower than 0.4were excluded (Jiang, Li, Gao, Bao, & Jiang, 2013).

We selected China's household appliance and electronics industry to collect our data. The sampling frame was generated from a proprietary mailing list of firms in the household appliance and electronics industry. After removing firms that had gone out of the business, we randomly selected 330 distributors as the sample firms. We first called the contact representatives of the sampled companies and asked them to select the informants (purchasing managers knowledgeable about their firms' cooperation information with focal suppliers). In particular, we explained that the focal supplier we referred to should be the third largest supplier in terms of sales volume. This method enabled us to avoid positive evaluation bias because “relationships with the firm's largest supplier tend to be uniformly positive” (Gilliland, Bello, & Gundlach, 2010, p. 447). We then sent questionnaires to the contract representatives of the firms, along with an explanation of the research objectives and the survey requirements. During the data collection processes, the informants were instructed to consult with other knowledgeable members when answering the questionnaire. After3 rounds of reminders (calls, visits, e-mails, and re-mailing), we ultimately received 195 replies, of which 162 questionnaires were completed and 33 questionnaires were eliminated due to incomplete information, producing a response rate of 49.1%. Appendix A shows the descriptive statistics about the buyer firms (i.e., age, size, location, relationship history, ownership type and informant profile).

Non-response bias was tested in two ways. First, the sample and population mean of the demographic variables (e.g., size, sales, relationship length) were compared to check for any significant difference. The *t*-tests yielded no statistically significant differences (at a 99% confidence interval) between the sample and population. Second, based on the dates of the responses, we split the final sample into early and late waves (Armstrong & Overton, 1977; Lambert & Harrington, 1990), and the *t*-tests performed on these two groups yielded no statistically significant differences (at a 99%confidence interval). These results suggest that non-response bias in our sample is not a problem.

To minimize social desirability bias, we maintained full anonymity for all of the informants throughout the survey process. First, following the method suggested by Fisher (1993), we used more specific and less direct questions in the survey questionnaire. Second, to reduce pressure on the respondents (Brown & Day, 1983), we informed them that the survey was designed only for research and that there were no right or wrong answers to our questions.

4.2. Measurement

We operationalized the key constructs using established multi-item scales. We used a seven-point Likert scale (“1” = strongly disagree and “7” = strongly agree) to measure the items for most of the constructs (apart from relationship duration) from the buyer's perspective. The pretests revealed that some items were not appropriate in our research setting, so we deleted these items. Table 1 reports the measures of all of the constructs.

4.2.1. Dependent variable

Destructive conflict is a three-item scale that captures the dysfunctional conflict perceived by the buyer. Constructive conflict is a four-item scale that captures the functional conflict perceived by the buyer. These two measures were adapted from Rawwas et al. (1997).

4.2.2. Independent variable

The contract is the legal bond between buyer and supplier. Four items were used to measure the contract detail level and were adapted from Jap and Ganesan (2000) and Luo (2002). Trust refers to the extent to which the firm believes its partner is honest, benevolent, and dependable. Based on Kumar, Scheer, and Steenkamp (1995) and Das and Teng (1998), three items were used to measure the buyer's trust in the supplier. A four-item scale of environmental uncertainty was adapted from Jaworski and Kohli (1993) and Pelham (1999) to reflect degrees of uncertainty in the market, demand, competition, and technology.

4.2.3. Control variables

We controlled dyadic exchange factors such as dependence, relationship instability, asset specificity, and relationship duration. First, some marketing studies have pointed out that buyer and supplier dependence is a component or a dimension of a power source, which is viewed as a significant cause of inter-channel conflict (Lee, 2001; Moore, Birtwistle, & Burt, 2004). Following Jap and Ganesan (2000), we used four items to measure the buyer's dependence on the supplier. Second, relationship stability refers to attitudes toward a long-term relationship and collaborators' degree of restraint from outside temptation, which is vital for the success of collaboration between chain members, and determines the consistency, steadiness, and effectiveness of the relationship (Yang, 2009). Thus, referring to definitions provided by Inkpen and Beamish (1997), Jiang, Li, and Gao (2008) and the measurement in Yang (2009), we measured relationship instability between buyers and suppliers with three items. Third, Ren, Oh, and Noh (2010) found that suppliers' specific investment decreases conflict in buyer-supplier relationships. Three items based on Anderson and Weitz (1992) were used to measure this construct. Finally, relationship duration, or the number of years the buyer and supplier had been engaging in economic exchanges, may be positively associated with the quality of the buyer-supplier relationship (Bai et al., 2016; Poppo, Zhou, & Zenger, 2008), as long-established relationships tend to be better working relationships (Das & Teng, 1998). Relationship duration was measured using a single item, i.e., how many years both sides had been involved in the exchange relationship (Doney & Cannon, 1997; Liu, Li, Tao, & Wang, 2008).

4.3. Reliability and validity

To guarantee the quality of measurements, we checked the reliability and validity of all of the constructs in this study. First, we conducted confirmatory factor analysis (CFA) to ensure that all of the hypothesized factors had high loadings and that no significant cross-loadings between these factors appeared. All of the constructs (except specific investment) had Cronbach's alphas larger than 0.70, showing high internal convergence. Second, following Bagozzi and Yi (1988), we calculated the composite reliability (CR) scores of the constructs to assess construct reliability. As reported in Table 1, all of the CR values are > 0.70 and the AVE of each scale satisfies the minimum standard of 0.5 (Fornell & Larcker, 1981), indicating good convergent validity. Finally, we tested the measurement model, with a result showing a good fit between the data and model. The analysis results showed a good fit (Hu & Bentler, 1999) across a wide range of fit statistics ($\chi 2$/df = 1.267; P-value = 0.003; RMSEA = 0.041; GFI = 0.871; CFI = 0.957; IFI = 0.958).

We used CFA to check for discriminant validity. Measurement models were constructed for all possible pairs of constructs. These models were tested on each selected pair by first allowing for the correlation between the two constructs to be free and then fixing it at 1.0. A significant difference in chi-square values for fixed and free solutions indicates the distinctiveness of two constructs (Bagozzi, Youjae, & Phillips, 1991). All of the differences between the fixed and free solutions were significant. Second, we calculated the confidence

Table 1
Measurement and construct validity.

Variable and measurement	Loading
Contract (α = 0.74; CR = 0.83; AVE = 0.56)	
C1: We are actually bounded by formal contract (or agreements).	0.70
C2: Our relationship with this supplier is governed by explicitly described and clearly written contract terms.	0.74
C3: We have formal agreements that detail the obligations and rights of both parties.	0.80
C4: The contract with this supplier includes everything in detail that we think important.	0.76
Trust (α = 0.75; CR = 0.86; AVE = 0.68)	
T1: We believe that the supplier is competent to keep the promise they make to our firm.	0.82
T2: Though the circumstances change, we believe that this supplier is ready and willing to offer us assistance and support.	0.83
T3: This supplier can understand the difficult that we encountered when we share our problems with them.	0.82
Destructive conflict (α = 0.88; CR = 0.94; AVE = 0.83)	
DC1: It is difficult for us to do business with this supplier.	0.91
DC2: The supplier frustrates us from the pursuit of our interest.	0.92
DC3: There exists personal conflicts between our employees and supplier's employees	0.86
Constructive conflict (α = 0.73; CR = 0.83; AVE = 0.56)	
CC1: The disagreements with this supplier are worked out in a friendly way.	0.82
CC2: The disagreements with this supplier and us is another part of our doing businesses.	0.69
CC3: The disagreements with this supplier and us make the collaboration outcomes more efficient.	0.66
CC4: The disagreements of opinions stimulate us to find effective solutions.	0.81
Environmental uncertainty (α = 0.76; CR = 0.86; AVE = 0.68)	
EU1: The nature of market competitive that our company locates is intense.	0.68
EU2: The product preference is uncertain for customer of our company.	0.86
EU3: The technology in our industry is changing rapidly.	0.92
Relationship instability (α = 0.75; CR = 0.86; AVE = 0.67)	
RI1: Our party changes partner frequently.	0.79
RI2: The relationship between our firm and supplier is short-term.	0.87
RI3: There are some unplanned or unexpected changes in the on-going relationship.	0.79
Dependence (α = 0.82; CR = 0.88; AVE = 0.65)	
D1: We must spend a great deal of resources, energy and time searching for a new supplier if we terminate our relationship with this supplier.	0.77
D2: It would be difficult for us to replace this supplier in the business area we are in.	0.83
D3: It would be costly to lose this supplier.	0.84
D4: In our relationship, this supplier is at the core and has played a pivotal role.	0.77
Specific investment (α = 0.60; CR = 0.79; AVE = 0.56)	
TSI1: Our supplier has dedicated a great deal of time and efforts to training our employees.	0.66
TSI2: Our supplier cannot recover investment dedicated to us if they turn to another distributor.	0.78
TSI3: Our supplier does a lot to help us become a more efficient distributor.	0.80

Table 2
Descriptive statistics and correlation matrix.

Variable	1	2	3	4	5	6	7	8	9
1 Dependent	1								
2 Duration of relationship	0.15	1							
3 Relationship instability	− 0.01	0.12	1						
4 Specific investment	0.26[b]	0.13	− 0.04	1					
5 Environmental uncertainty	− 0.03	0.06	0.17[a]	− 0.07	1				
6 Contract	0.01	0.01	0.03	0.25[b]	0.01	1			
7 Trust	0.14	0.16[a]	0.08	0.28[b]	− 0.02	0.35[b]	1		
8 Destructive conflict	0.09	0.07	− 0.26[b]	− 0.22[b]	0.03	− 0.11	− 0.21[b]	1	
9 Constructive conflict	0.12	0.09	0.06	0.32[b]	0.02	0.57[b]	0.45[b]	− 0.16[a]	1
Mean	4.27	5.76	3.24	4.91	3.55	5.33	5.15	3.21	5.27
S.D.	1.34	3.12	1.36	0.97	1.37	1.03	0.96	1.63	0.88

[a] Significant at the 0.05 level.
[b] Significant at the 0.01 level (Two-tailed).

interval of plus or minus two standard errors around the correlation between the factors and determined whether this interval included 1.0. If it did not include 1.0, discriminant validity was demonstrated (Govindarajan & Kopalle, 2006). None of the confidence intervals included 1.0. Therefore, these two tests provided strong evidence of discriminant validity.

Common method variance may exist in our study because we measured independent and dependent variables using data from the same source (McEvily & Marcus, 2005). We tested for common method variance by comparing a model loading all of the observed variables onto a single latent variable with a measurement model that loaded observed variables onto theoretically assigned latent variables (Podsakoff & Organ, 1986). The $\chi 2$ value for the measurement model was significantly lower than the $\chi 2$ value for the Harmon single factor model (difference in $\chi 2 = 727.61$, $P < 0.001$), indicating a superior fit to the data. We also tested for common method variance by conducting principal component factor analysis of all of the items. The analysis extracted eight factors, with the first factor accounting for 18% of the total variance; thus, no overwhelming factor was found to occur. These results indicate that common method bias is not a significant issue in the data.

Table 3
Regression results (N = 162).

Variable	Destructive conflict			Constructive conflict		
	M 1	M 2	M 3	M 4	M 5	M 6
Control variable						
Dependence	0.22[c]	0.23[c]	0.26[c]	0.06	0.06	0.01
The length of cooperation	0.14	0.08	0.10	0.05	− 0.01	0.09
Relationship instability	0.28[c]	0.26[c]	0.31[c]	0.21	0.01	0.03
Specific Investment	− 0.31[d]	− 0.26[d]	− 0.26[d]	0.30[c]	0.15[b]	0.17[b]
Environmental uncertainty(EU)	0.20[d]	0.21[d]	0.26[d]	− 0.02	0.09	0.20
Direct effects						
Contract(C)		− 0.04	− 0.04		0.39[d]	0.35[c]
Contract square (C^2)		0.15[c]	0.18[b]		− 0.19[a]	− 0.23[b]
Trust(T)		− 0.23[a]	− 0.27[c]		0.33[d]	0.33[d]
Interaction effects						
C X EU			0.25			− 0.19[b]
C^2 X EU			0.31[d]			− 0.09
T X EU			− 0.29[a]			0.18[c]
Model compare						
R^2	0.24	0.30	0.38	0.17	0.49	0.55
Adjust R^2	0.14	0.17	0.20	0.14	0.44	0.48
F-model	2.48[c]	2.27[c]	2.12[c]	4.64[d]	8.76[d]	7.39[d]
ΔR^2		0.06	0.08		0.32	0.06
Δ-F-model		6.17[c]	9.16[d]		45.18[d]	9.47[d]

[a] Significant at the 0.1 level.
[b] Significant at the 0.05 level.
[c] Significant at the 0.01 level.
[d] Significant at the 0.001 level.

4.4. Analysis and results

We run a hierarchical regression to test the hypotheses. Before doing so, we carry out a preliminary test to verify whether the data exhibit violations of normality assumptions, outliers, and any other problems. The results indicate that our data are free from these problems and suitable for regression analysis. Table 2 presents the descriptive statistics and Pearson correlation coefficients for all of the variables involved in this study. We identify some significantly related variables, so we check the multicollinearity problem. First, we mean-center all of the variables in the interaction terms to eliminate potential multicollinearity (Aiken & West, 1991). We then estimate the variance inflation factors (VIFs). As all of the VIF coefficients are below the recommended ceiling of 10, no multicollinearity is found to exist (Chatterjee & Price, 1991).

We then perform the regression in three steps. First, the model includes only control variables. Second, we add all of the independent and moderator variables. Lastly, we include all of the interactions. The results of the regression analysis are shown in Table 3.

Table 3 (Model 2) indicates that although detailed contracts are not significant (b = − 0.04, P > 0.1), the square of contracts (b = 0.15, P < 0.01) is positively and significantly related to destructive conflict, which supports H1a. In addition, Table 3 (Model 5) indicates that contracts are positively related to constructive conflict (b = 0.39, P < 0.001), whereas the square of contracts is negatively and significantly related to constructive conflict (b = − 0.19, P < 0.1). Contracts thus have an inverted U-shaped relationship with constructive conflict, supporting H1b.

According to Table 3, Model 2, trust is negatively related to destructive conflict (b = − 0.23; P < 0.1) and positively and significantly related to constructive conflict (b = 0.33; P < 0.001). H2a and H2b are therefore supported.

In line with H3, we test the moderating role of environmental uncertainty on the effects of detailed contracts. The first order of interaction between contracts and environmental uncertainty (b = 0.25, P > 0.1) is not significantly related to destructive conflict, but second-order interaction (b = 0.31, P < 0.001) is significantly related to destructive conflict (Model 3), indicating that environmental uncertainty strengthens the effects of contracts on destructive conflict (Aiken & West, 1991). In addition, as Table 3 (Model 6) shows, the first-order interaction between contracts and environmental uncertainty (b = − 0.19, P < 0.05) is negatively related to constructive conflict, while the second-order interaction (b = − 0.09, P > 0.1) is not significantly related to constructive conflict, indicating that environmental uncertainty weakens the inverted U-shaped effects of contracts on constructive conflict. H3a and H3b are thus fully supported.

Furthermore, the results of Table 3 indicate that the interaction of trust and environmental uncertainty are negatively and significantly related (b = − 0.29; P < 0.1) to destructive conflict (Model 3) and positively and significantly related (b = 0.18; P < 0.01) to constructive conflict (Model 6), supporting H4a and H4b.

To clarify these curvilinear relationships, we use the unstandardized parameter estimates to depict the effects in Fig. 2. Part 1 of Fig. 2 clearly shows that contracts have a U-shaped effect on destructive conflict, but its positive effect on constructive conflict declines after a certain point, as shown in Part 2. In addition, we follow Aiken and West's (1991) procedure to decompose the interactive terms. Specifically, we conduct simple slope tests and plot the relationships in Fig. 3. In these tests, we split the environmental uncertainty variable into two

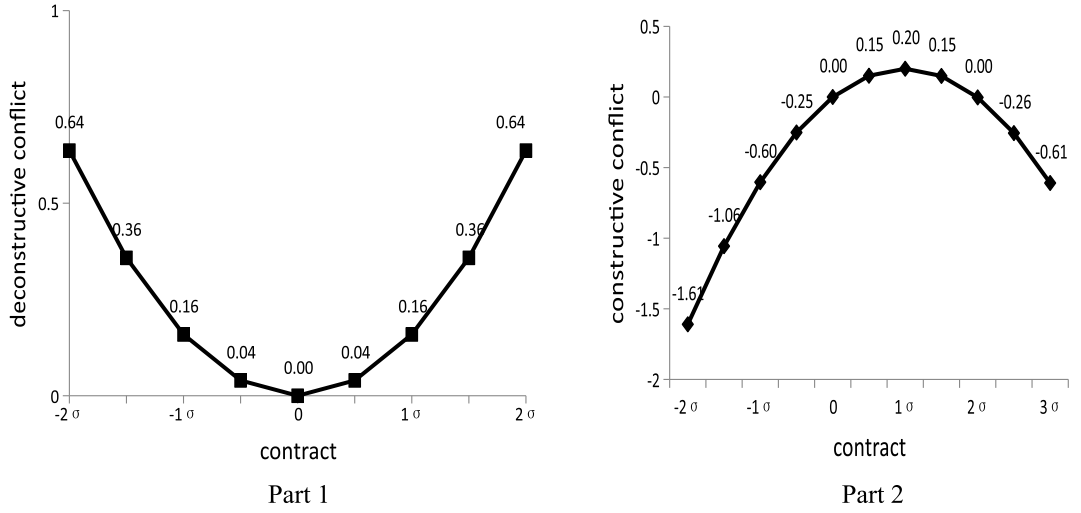

Fig. 2. cullilear effects of contracts on destructive and constructive conflict.

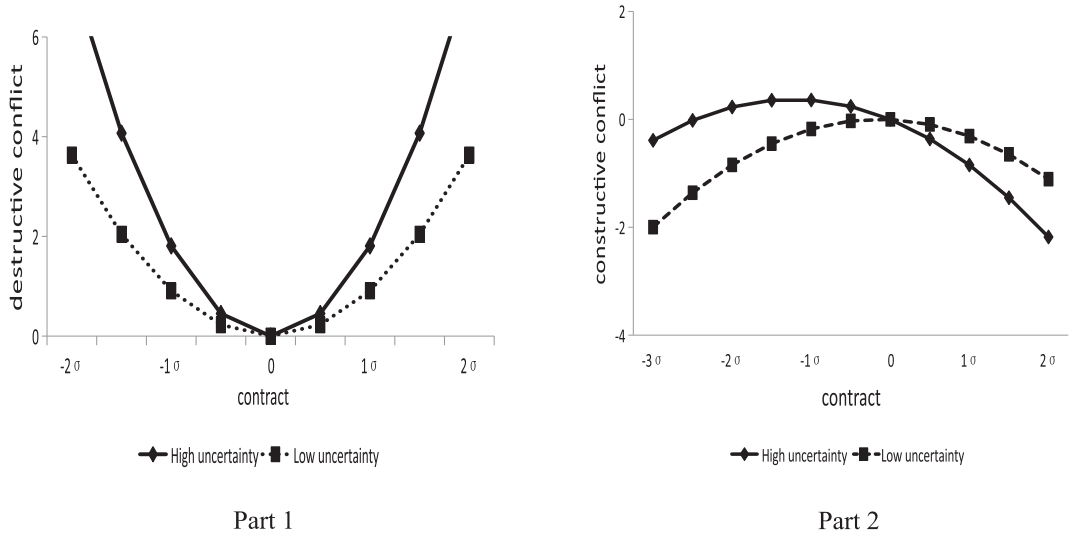

Fig. 3. Moderating effect of environmental uncertainty on contracts.

groups—low (one standard deviation below the mean) and high (one standard deviation above the mean)—and estimate the effects of contracts on two types of conflict for both levels.

As shown in Part 1 of Fig. 3, the effects of contracts on destructive conflict are more abrupt when the environmental uncertainty is high. In the left part of this curve, when environmental uncertainty is higher, the negative effect of contracts on destructive conflict is stronger, while in the right part of this curve, the positive effects of contracts on destructive conflict increase more rapidly. These results suggest that environmental uncertainty strengthens the U-shaped effect of contracts on destructive conflict, supporting H3a. Moreover, as shown in Part 2 of Fig. 3b, when the environmental uncertainty is high, contracts have a weaker positive effect on constructive conflict. The optimal level of contracts for constructive conflict is moderate when the environmental uncertainty is low, whereas when the environmental uncertainty is high, the optimal level shifts to a lower point. These results suggest that environmental uncertainty weakens the positive effects of contracts on constructive conflict, supporting H3b.

Similarly, we depict the effects of trust on destructive and constructive conflict for low and high levels of structural uncertainty. As Part 1of Fig. 4 shows, the negative relationship between trust and destructive conflict is stronger when the environmental uncertainty is high rather than low. Part 2 of Fig. 4 shows that the positive relationship between trust and constructive conflict is stronger when the environmental uncertainty is high rather than low. These results support H4.

To test the robustness of our results, we run a variation of our model. Research has suggested that contracts and trust may be not only determined by dependence, transactional specific investment, relationship instability, and relationship duration, but also affected by destructive and constructive conflict (Abosag, Yen, & Barnes, 2016; Langfred, 2007). To examine this possibility, following Hamilton and Nickerson (2003), we test an alternative model using a two-stage regression model. In stage one, we regress contracts and trust against control variables (e.g., dependence, relationship duration) and destructive conflict and constructive conflict, respectively, to obtain the residual free of the influence of these variables. In stage two, we use residuals from stage one to replace contracts and trust to predict destructive

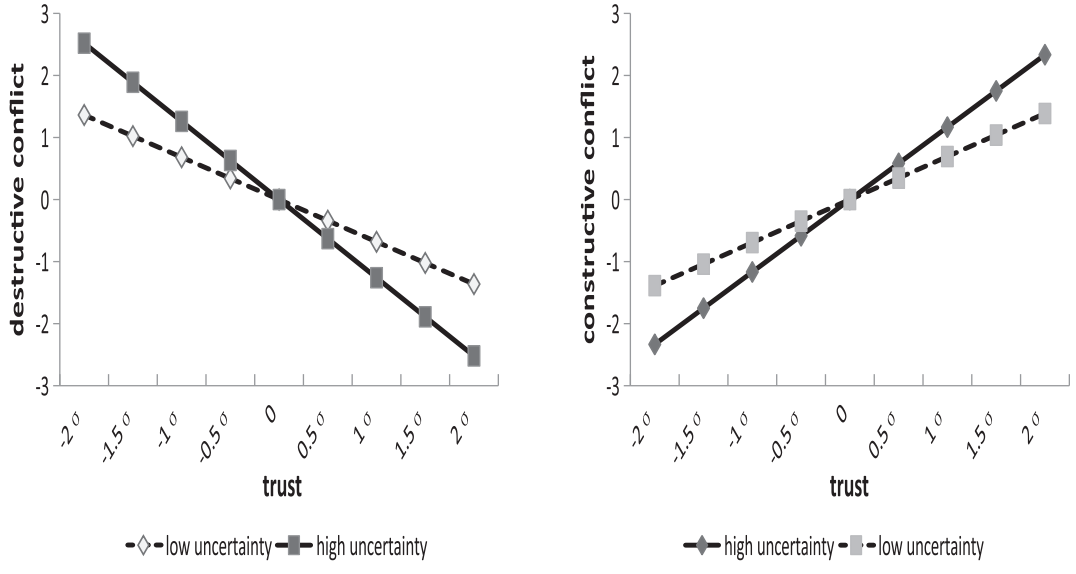

Fig. 4. Moderating effect of environmental uncertainty on trust.

conflict and constructive conflict. We mean-center all of the pertinent independent variables and create the interaction terms by multiplying them, which can minimize possible co-linearity between the main and interaction effects (Aiken & West, 1991). The results demonstrate a level of consistency: detailed contracts have curvilinear relationships with relationship conflict, and trust has linear relationships with relationship conflict. Furthermore, in terms of the two types of relationship conflict, the interaction effects between environmental uncertainty and (Abdi & Aulakh, 2014) detailed contracts and () inter-firm trust retain their significance. These results suggest that the problem is addressed in our model.

5. Conclusions

Based on the 162 survey data from buyers involved in supplier-buyer relationships, we investigate how transactional mechanisms (contracts) and relational mechanisms (trust) influence destructive and constructive conflicts in buyer-supplier relationships. We also examine the moderating effects of environmental uncertainty on the relationships between control mechanisms and conflict. This adds to the research by examining different types of control mechanism and the multi-dimensionality of buyer-supplier conflicts. By confirming that environmental uncertainty has considerable yet under explored effects on the relationship between control mechanisms and buyer-supplier conflict, the results further enrich the research on emerging markets that tend to be characterized by environmental uncertainty and other institutional lacunae (Bai et al., 2016).

5.1. Theoretical implications

The study incorporates both transactional and relational mechanisms and two dimensions of conflict into one theoretical model, which is rare in previous studies. Our research makes contributions to the literature. Our findings provide insight into the trade-off between the control and coordination functions of detailed contracts by considering the need to adapt for benefit and the need to safeguard for opportunism in buyer-supplier relationships (Dean, Griffith, & Calantone, 2016). Moreover, the findings corroborate the relationship marketing literature, which states that inter-organizational trust promotes relationship functions and conduct that benefits relationships (Fang, Chang, & Peng, 2011).

First, it provides new insights into the relationship between control mechanisms and buyer-supplier relationship conflicts. The results from our sample indicate that detailed contracts have a U-shaped effect on destructive conflict and an inverted U-shaped effect on constructive conflict. This curvilinear effect has implications for research on contracts. Detailed contracts are a double-edged sword. Those with medium levels of detail discourage destructive conflict and encourage constructive conflict management by regulating the behavior of the exchange parties through pre-negotiation and stipulations (Brown et al., 2006; Luo, Liu, Zhang, & Huang, 2011), and by coordinating unexpected issues through flexible or negotiable clauses (Das & Teng, 1998; Malhotra & Lumineau, 2011). Overly detailed contracts may amplify the problems of “rigidity” and “shortcomings” in contracts (Wuyts & Geyskens, 2005). Our research reveals the complexity of contracts in inter-firm exchange, and although detailed contracts contain enforcement and coordination provisions (Reuer & Arino, 2007), we still need more complex contracts to contain an assignment of right and more dimensions such as price and product, after-sales services, and legal resources to guide the exchange of supply chain members (Anderson & Dekker, 2005). Our research sheds new light on contract drafting and emphasizes the trade-off between rigidity and flexibility in contracts (Hart & Moore, 2008). The dominant thinking on contractual mechanisms must therefore shift away from control toward a healthier balance between control and coordination (Mellewigt et al., 2007).

We find that trust is negatively related to destructive conflict and positively related to constructive conflict. The findings suggest that inter-firm trust is beneficial for destructive and constructive conflict management, as trust reduces the likelihood of negative interpretations of partner actions by allowing for the benefit of the doubt. It facilitates openness in knowledge sharing and reduces fears of partners' opportunistic behavior (Krishnan et al., 2006). These findings suggest that trust cultivates cooperation and ultimately reduces destructive conflict in buyer-supplier relationships (Liu et al., 2009). Murfield and Esper (2016) point out that “trust can create blind spots in relationships, potentially causing firms to have difficulty recognizing conflict until it deteriorates the foundational trust.” In contrast, our research validates the view that mutual trust effectively promotes adaptive behavior, illustrating that it permits more flexibility and allows for benefits of doubt, which can promote constructive conflict in buyer-supplier relationships (Jeffries & Reed, 2000; Krishnan et al., 2006). Our research provides evidence that trust as a relational mechanism facilitates cooperation and adaptation (Gulati et al., 2005) and can address the moral hazards of problems inherent in inter-firm repeated exchanges without the associated cost (Ryall & Sampon, 2009).

Second, previous studies suggest that the effectiveness of control mechanisms is not context-free (Liu et al., 2009). Our findings further indicate that environmental uncertainty has opposite moderating effects on the relationship between contracts and trust and inter-firm conflict, suggesting that as a crucial and multifaceted parameter environmental condition, it should be incorporated into analysis of buyer-supplier relationship management, and that the effects of environmental uncertainty on buyer-supplier relationships are mitigated or exacerbated by firms decisions' on how to manage conflicts. Environmental uncertainty strengthens the U-shaped effect of contracts on destructive conflict and weakens the inverted U-shaped effect of contracts on constructive conflict, suggesting that environmental uncertainty is more strongly connected to negative outcomes in relationships governed by detailed contracts. Contracts must therefore be less detailed to facilitate ex post adaptation in rapidly changing environments, given the negative moderating effects of environmental uncertainty on the contract-conflict relationship (Carson, 2007). Furthermore, our findings provide support for the prediction of Williamson (1991), who states that “when environmental uncertainty is higher, long-term contracts become increasingly costly and finally the long-term contracts are replaced by either short-term market contracts or the hierarchy.”[1] In contrast, environmental uncertainty strengthens the effect of trust on two types of buyer-supplier conflict, which indicates that it can also trigger initiatives toward the development and maintenance of collaborative, long-lasting relationships in an effort to survive in the market. Therefore, trust is a more effective and reliable mechanism for managing inter-firm conflict in situations of high environmental uncertainty.

5.2. Managerial implications

Our findings also provide managerial implications. First, managers should recognize that not all conflict is bad, and that they need to decrease the destructiveness of conflict and increase its constructiveness. However, it is still unclear how managers should choose a suitable control mechanism to mitigate destructive conflict and boost constructive conflict. Our findings provide insights for this, and suggest that the consequences of contracts and trust vary. We suggest that managers should be aware that overly detailed contracts are not the best choice for managing the two types of conflict, while medium detailed contracts work well. Therefore, when contracts are designed or renegotiated, managers should not draft detailed contracts but rather leave contract terms open to permit greater value-enhancing adjustment (Dean et al.,

[1] We thank the anonymous reviewer for drawing our attention to this possibility.

2016). The threshold and downside of contracts reveal the point at which conflict resolution mechanisms no longer work, which can provide a clear signal to companies that their relationships are turning sour (Johnsen & Lacoste, 2016). In contrast, our results revealed that trust is a more useful and conductive instrument for managing relationship conflict, so we recommend that managers should strive to build and maintain dyadic trust, though this is difficult and costly to maintain.

Our findings caution that the "dark side" of detailed contracts on conflict management is more pronounced when uncertainty is high. At a very high level of environmental uncertainty, the detrimental consequences of detailed contracts on both destructive and constructive conflict management are amplified, suggesting that managers should align the level of contract detail with transaction attributes such as environmental uncertainty (Sande & Haugland, 2015). Once environmental uncertainty changes, the initial contracts must be renegotiated, and overly detailed contracts should be avoided when environmental uncertainty is higher. The findings also indicate that trust is more effective for managing conflict in a situation of high environmental uncertainty. Thus, for managers, cultivating trust at the firm level is extremely important, particularly when the firm is facing a high level of environmental uncertainty. More activity and communication between buyer and supplier establishes and enhances trust. Dyer and Chu (2000) note that face-to-face communication and long-term transaction relationships are both useful for developing dyadic trust. Moreover, Katsikeas, Skarmeas, and Bello (2009) argue that transaction-specific assets enable one partner to have confidence in and trust the other. Therefore, when facing higher environmental uncertainty, we suggest that managers of partner firms can increase informal or face-to-face communication with each other and their specific transaction investments to build and consolidate dyadic trust. Inter-firm conflict then disappears. Our findings provide a theoretical basis for managers to select and use proper control mechanisms to manage destructive and constructive conflict in buyer-supplier relationships, which is important for relationship governance in the buyer-seller relationship.

5.3. Limitations and future research

Although our study has important theoretical and managerial implications, it has several limitations that can be addressed in future research. First, although contracts and trust are two typical control mechanisms in industrial marketing research, there are others such as transaction-specific assets and relational norms. Therefore, future research should examine how these control mechanisms affect destructive and constructive conflict in the buyer-supplier relationship. Second, our study mainly considers environmental uncertainty as a contingency factor, and other context factors such as competition intensity and incompleteness of legal systems can be also considered. Furthermore, given the heterogeneous institutional contexts across countries with different levels of institutional development, the extent to which these findings can be applied to developed economies offers an intriguing avenue for future research. Third, due to the difficulty in collecting data, our research takes only the perspective of the buyer side. Future studies should take a bilateral view of the buyer-supplier relationship to achieve a better understanding of conflict management in the context of environmental uncertainty.

Appendix A. Profile of survey sample

Characteristic of sample and respondents	Mean/percentage (%)
1. Location	
Northern China	16.8%
Sourthern China	10.5%
Central China	19.3%
East China	30.7%
Northwest China	12.6%
Southwest China	10.1%
2. Firm size	
1–50	10.9%
50–200	21.9%
200–500	20.6%
> 500	46.6%
3. Type of firm ownership	
State owner enterprise	15.6%
Limited companies	44.0%
Joint Ventures	5.9%
Private companies	14.3%
Collective enterprise	14.7%
Others	5.5%
4. Job position of respondent	
President/CEO	26.1%
Perchasing manager	27.7%
General manager	32.8%
Others	13.4%
5. tenure of the respondent in current position	5.4 years
6. length of the respondent involing in focal relationship	3.9 years

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