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The Role of Decision Rights in Incomplete Contracts: Lessons from Automobile Franchising

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Abstract

Automobile franchise contracts evenly allocate between manufacturers and dealers the rights to choose future terms of trade. Nevertheless, manufacturers dictate sales targets and performance standards unilaterally, and dealers implement them, receiving in exchange a discretionary discount on the wholesale price of cars. These practices suggest that, in contrast with standard models of incomplete contracts, formal decision rights are not "bargaining chips" that help the parties extract better terms of trade ex post. Instead, they suggest that contracting the terms of trade ex post in automobile franchise relations is costly, and that manufacturers are informally delegated as specialized decision-makers for the dealership network as a whole. In this context, formal decision rights may be a last resort against the dealers' temptation to reject efficient but costly decisions proposed by the manufacturer.

Keywords: Adaptation, Bargaining, Decision rights, Franchising, Relational Contracts.

JEL codes: D23; L14; L22

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1. Introduction

Recent empirical works have shown that long-term contracts between firms allocate the *rights to choose future terms of trade* in a variety of contexts, from technology alliances (Lerner and Merges (1998), Elfenbein and Lerner (2003)), to supply relationships (Arruñada (2000), Ben-Shahar and White (2006)), car dealerships (Arruñada *et al*. (2001), Zanarone (2009)) and business-format franchising (Hadfield (1990)). Some of these works have also found that the allocation of decision rights varies *systematically* with the type of contractual relationship (Lerner and Merges (1998), Elfenbein and Lerner (2003), Arruñada, *et al*. (2001)) and the regulatory environment (Zanarone (2009)), suggesting that decision rights play a role in incomplete contracts. What is such role?

This question has been addressed by two streams of theoretical literature. According to a first stream, contracts are ex ante incomplete, but can be efficiently renegotiated once uncertainty on the environment is resolved. By shifting bargaining power between the parties, decision rights affect their expected share of the surplus from future renegotiations and, through that channel, their incentives to invest in the relationship ex ante. Therefore, decision rights are allocated to optimize the parties' ex ante incentives to invest (Grossman and Hart (1986), Hart and Moore (1990), Aghion and Tirole (1994), Hart (1995), Baker *et al*. (2002)). According to an alternative, mostly recent stream of literature, bargaining and contracting costs may prevent the parties from efficiently renegotiating the terms of trade during their relationship (Williamson (2000), Hart (2008)), and decision rights should be allocated to minimize the resulting ex post inefficiencies (Simon (1951), Matouschek

(2004), Baker *et al*. (2009), Hart and Moore (2008)).[1] Assessing the empirical relevance of these two groups of theories—and of specific theories in each group—requires information the existing empirical studies do not provide, regarding how, given the allocation of decision rights in a long-term contract, the parties adapt the terms of trade and divide the surplus in the course of their relationship.

This paper makes a step in that direction, providing a detailed account of the contractual relations between car manufacturers and Italian dealers, based on both hard data—franchise contracts and their annexes—and managerial interviews. The survey illuminates four patterns. First, automobile franchise contracts evenly allocate between manufacturers and dealers the formal rights to set standards, such as showroom design and advertising expenditures. Second, irrespective of who is assigned formal decision rights, manufacturers do not negotiate but, rather, *dictate* standards to their dealers, offering in exchange discounts on the list price of cars. Third, manufacturers tie the fulfillment of standards to discounts even when they have the right to impose standards, except when these are seen as essential to protect the brand, in which case manufacturers simply threaten to terminate non-compliant dealers. Finally—and in contrast with what one would expect if standards were contractible—manufacturers have the right to change the list price unilaterally, and therefore, can change the dealers' discounts in a discretionary manner, even after standards have been implemented as required.

These facts seem largely inconsistent with theories that emphasize continuous contract renegotiation, and the role of decision rights as "bargaining chips". Instead, they suggest

[1] See Gibbons (2005) for an extensive discussion of these two streams in the literature on incomplete contracts.

car dealers informally delegate manufacturers to elaborate and communicate standards, and to share the resulting benefits through discounts. In particular, the discretionary nature of these discounts suggests they are not guaranteed by the threat of court-enforcement but, rather, by informal mechanisms, such as the manufacturers' concern for trading with dealers in the future and for keeping a good reputation in the market for franchises. In these *asymmetric informal contracts*, formal decision rights, and the threat of disciplinary termination they entail, may play the role of a last-resort penalty. In particular, when standards are costly to implement, but essential to protect the manufacturer's reputation—as in the case of showroom design and furniture—the threat of termination may replace the promise of discounts as a means to keep the relational contract within its "self-enforcing range" (Klein (1996, 2000), Baker *et al*. (2009)). This interpretation of decision rights is also consistent with previous works on automobile franchising, according to which decision rights are allocated to car manufacturers when dealers have greater incentives to free-ride on the brand (Arruñada *et al*. (2001), Zanarone (2009)).

The rest of this paper is organized as follows. Section 2 develops a simple model of automobile franchising, where contract terms can be easily renegotiated ex post. Section 3 describes the contractual relations between car manufacturers and Italian dealers, and shows that their features are largely inconsistent with the model. Section 4 discusses an alternative theoretical framework, which can explain such features. Section 5 concludes.

2. A model of decision rights as "bargaining chips"

This section develops a simple model of automobile franchising, in which the terms of trade between manufacturers and dealers can be easily negotiated ex post, and decision rights are used as "bargaining chips" to affect the division of surplus.[2] In the spot version of the model, which follows the incomplete contracting theory of Grossman, Hart and Moore, manufacturers and dealers meet once and can only enforce explicit contracts. In the relational version, adapted from Baker *et al*. (2002), they meet repeatedly and, therefore, can also enforce implicit contracts. Although spot and relational property rights models—as well as spot models with different specifications (Whinston (2003))—predict different allocations of decision rights, the analysis presented here highlights that they yield similar predictions on how the contract terms are adapted ex post.

2.2. The environment

Consider a car manufacturer, M, whose cars are purchased and resold to final consumers by dealer D. After observing the state of the world *s*, M and D must choose a local decision *d*—showroom design, advertising expenditure, and the like—which influences their gross profits from the relationship $\pi_M(d,s)$ and $\pi_D(d,s)$. As standard in property rights models, I assume *d* cannot be contracted before *s* is observed, but becomes costlessly contractible afterwards, and that $\pi_M(d,s)$ and $\pi_D(d,s)$ are both non-

[2] I define the model in terms of automobile franchising to facilitate comparison with the empirical section of this chapter. However, the model is fairly general and can be applied to different types of incomplete contract.

contractible. Before observing s and choosing d, M and D choose the non-contractible action vectors $\mathbf{a}_M$ —e.g., investments in monitoring technology and brand development— and $\mathbf{a}_D$ —e.g., efforts directed at acquiring knowledge of local customers—incurring private costs $c_M(\mathbf{a}_M)$ and $c_D(\mathbf{a}_D)$, respectively. For any state s, these actions affect the probability $q_s(\mathbf{a}_M, \mathbf{a}_D)$ that it will occur in the future. Before choosing $\mathbf{a}_M$ and $\mathbf{a}_D$, M and D write a contract $g \in \{M, D\}$, in which they allocate the *right to choose the decision d* to either M ($g = M$) or D ($g = D$).[3] The stage game can be thus summarized as follows:

1- Allocation of decision right $g \in \{M, D\}$ contracted

2- Non-contractible action vector $\mathbf{a}_i \in \mathbf{A}_i$ chosen by party $i \in \{M, D\}$ at cost $c_i(\mathbf{a}_i)$

3- State of the world $s \in S$ realized and observed by M and D

4- Contractible decision $d \in \Delta$ chosen

5- Non-contractible gross profit $\pi_i(d, s)$ received by party $i \in \{M, D\}$

2.3. Spot model

Assume M and D meet only once. Since d is ex post contractible, at stage 4, after observing the state of the world, M and D agree on the first best decision

[3] As explained in section 3, the terms of automobile franchise contracts are equal for all dealers of a given manufacturer, and they are usually negotiated between the manufacturer and a representative dealer association. Therefore, dealer D in the model can also be interpreted as the association of manufacturer M's dealers.

$d^{FB}(s) = \arg\max_{d} \left\{ \sum_{i} \pi_i (d, s) \right\}$ and on a price# $p^g(s) \in \square$ that M pays to D. Assuming Nash bargaining, this price is equal to

$$(1) \qquad p^g(s) = \frac{1}{2}\left[\pi_M \left(d^{FB}(s), s \right) - \pi_M \left(d^g(s), s \right) + \pi_D \left(d^g(s), s \right) - \pi_D \left(d^{FB}(s), s \right) \right]$$

where $d^g(s) = \arg\max_{d} \left\{ \pi_g (d, s) \right\}$ is the decision the party who has been assigned the decision right at stage 1 would choose if bargaining failed.

Anticipating the bargaining outcome, M and D choose, at stage 2, the Nash equilibrium actions

$$(2) \qquad \begin{aligned} \mathbf{a}_M^g &= \arg\max_{\mathbf{a}_M} \left\{ M = \sum_s q_s \left(\mathbf{a}_M, \mathbf{a}_D^g \right) \left[\pi_M \left(d^{FB}(s), s \right) - p^g(s) \right] - c_M \left(\mathbf{a}_M \right) \right\} \\ \mathbf{a}_D^g &= \arg\max_{\mathbf{a}_D} \left\{ D = \sum_s q_s \left(\mathbf{a}_M^g, \mathbf{a}_D \right) \left[\pi_D \left(d^{FB}(s), s \right) + p^g(s) \right] - c_D \left(\mathbf{a}_D \right) \right\} \end{aligned}$$

which yield expected profits $M\left(\mathbf{a}_M^g, \mathbf{a}_D^g\right)$ and $D\left(\mathbf{a}_M^g, \mathbf{a}_D^g\right)$. At stage 1, M and D choose the allocation of decision rights that optimizes both parties' stage 2 actions, which is given by $g^{SP} = \arg\max_{g} \left\{ S\left(\mathbf{a}_M^g, \mathbf{a}_D^g\right) = M\left(\mathbf{a}_M^g, \mathbf{a}_D^g\right) + D\left(\mathbf{a}_M^g, \mathbf{a}_D^g\right) \right\}$. As a result, M and D earn expected profits $M^{SP} = M\left(\mathbf{a}_M^{g^{SP}}, \mathbf{a}_D^{g^{SP}}\right)$ and $D^{SP} = D\left(\mathbf{a}_M^{g^{SP}}, \mathbf{a}_D^{g^{SP}}\right)$, and the expected surplus is $S^{SP} = M^{SP} + D^{SP}$.

This model has two testable implications on the structure of ex post bargaining, which are summarized in the following

Proposition 1: (i) For any state *s*, the party who is assigned the decision right *receives* a price for agreeing on the efficient decision $d^{FB}(s)$; (ii) the decision $d^{FB}(s)$ and the price $p^g(s)$ are specified in a *contract* at stage 4.

Proof: in appendix.

The intuition behind Proposition 1 is straightforward. If decision rights are "bargaining chips", as assumed by the property rights model, they should increase a party's share of the surplus. Moreover, since the model is spot and does not allow for implicit contracts sustained by concerns for future trade, M and D should formalize their agreement in a contract to make it enforceable.

2.4. Relational model

Suppose M and D repeat the spot game forever. Given the allocation of decision rights *g*, and for any realized state *s*, M and D implicitly agree to replace the bargaining price $p^g(s)$ with a price $\tau^g(s) \in \square$, which gives them more efficient incentives to choose the non-contractible actions at stage 2. Baker *et al*. (2002) show that, in this type of relationship, the optimal *ex ante contract* allocates decision rights to minimize the parties' temptation to reject $\tau^g(s)$ in states in which it is unfavorable, and insist on the spot bargaining price $p^g(s)$. This section complements their analysis, showing that the optimal

ex post contract should also be chosen to minimize the parties' temptation to renege on the implicit agreement.[4]

Assume the best relational price schedule sustainable under allocation g generates ex ante actions $\mathbf{a}_M^{Rg}, \mathbf{a}_D^{Rg}$ and per period profits $M^{Rg} = M\left(\mathbf{a}_M^{Rg}, \mathbf{a}_D^{Rg}\right)$ and $D^{Rg} = D\left(\mathbf{a}_M^{Rg}, \mathbf{a}_D^{Rg}\right)$, such that $M^{Rg} + D^{Rg} = S^{Rg} \geq S^{SP}$. Also, assume M pays D, at stage 1 of each period, a fixed transfer $w^g \in \square$ (Levin (2003)) in order to distribute the expected surplus and, if either M or D reneges on the relational contract, both parties revert to the optimal spot governance structure g^{SP} forever after. Then, the optimal ex post contract (i.e., the one that minimizes the parties' reneging temptation) is defined by the following

Proposition 2: For any allocation of the decision right $g \in \{M, D\}$, the efficient implicit agreement requires M and D to sign an explicit contract, at stage 4, according to which, if $d^{FB}(s)$ is chosen, M pays $\tau^g(s)$ to D.

Proof: in appendix.

Intuitively, if M and D specify, ex post, the desired decision and payment in a contract, the party without decision right will gain less from rejecting such payment in states in which it is unfavorable because, even if she does so, she has to bargain with the other party and pay a price in order to obtain the desired decision. A testable implication of this result is that, *in the relational model, as in the spot one, we should observe the parties agreeing ex post on a decision and a price, and formalizing their agreement in a contract*—although

[4] Ex post contracts are feasible because the decision *d* is contractible once *s* is realized.

the price $\tau^g(s)$ in the relational model is different, in general, from the price $p^g(s)$ in the spot model.

3. Decision rights and contract adaptation in automobile franchising

In this section, I analyze the how car manufacturers and dealers periodically adapt the terms of their relationships, and how this relates to the way they allocate decision rights ex ante, in the franchise contract. In the last part of the section, I compare the observed practices with the predictions of the model in section 2.

Automobile franchise contracts are fundamentally incomplete in that, instead of defining specific terms of trade, they allocate between car manufacturers and dealers the rights to choose them in the future. The allocation of decision rights is negotiated by manufacturers and dealer associations at the outset, and modified only after major shocks, like network restructuring or regulatory changes.[5] Table 1 summarizes the allocation of decision rights in the Italian contracts currently used by 19 manufacturers[6], who accounted, in 2004, for 85% of new car sales in Italy.[7]

<TABLE 1 HERE>

[5] Due to European regulatory provisions, the same contract applies to all the dealers of a given manufacturer. Each distribution network has a dealer association, and, in turn, the network-level associations are federated into a larger association, FEDERAICPA, which acts as a national coordinator.
[6] The contracts in this study represent the following brands: Ford, Opel (i.e., General Motors), Toyota, Mitsubishi, Mazda, Mercedes, BMW, Volkswagen, Audi, Peugeot, Citroen, Renault, Volvo, Jaguar, Land Rover, Seat, Fiat, Alfa Romeo and Lancia. Although some manufacturers are owned by the same group, that typically use different dealership contracts. For instance, the Jaguar and Land Rover contracts are different from the Ford contract, and the Alfa Romeo contract is different from the Fiat contract.
[7] The source of this data is the GMAP European Car Distribution Handbook, 2005 edition.

While decision rights are assigned in advance, the specific performance required from dealers—sales targets, standards for outlet maintenance and customer relationship management, and the like—and the monetary transfers between the parties—wholesale prices and incentives—are frequently revised and adapted to market conditions, some every year (sales targets), some others every one or two years (showroom design and furniture). Modifications are usually reported in annexes to the franchise contract, and, on fewer occasions, in private letters and e-mails. To analyze how modifications occur, and how they relate to the contractual allocation of decision rights, I have conducted, in the winter of 2007, a series of in-depth interviews with managers of car manufacturers, dealers and dealer associations, as well as with a reputed field lawyer, who assisted several manufacturers and dealers in court and prepared dealership contracts for numerous brands.[8] While networks for which interview responses and contracts are available do not perfectly match, the managers' answers are remarkably consistent, and strongly suggest that the automobile industry has *common practices* for adapting dealership contracts. Managers explicitly confirmed this, reporting that identical practices emerge from their periodic meetings with colleagues in the industry.

[8] The managers who participated in the survey represent the Italian networks of Peugeot, Citroen, Renault, Volkswagen, Audi, Skoda, Jaguar, Porsche, Nissan, Honda, Fiat, Alfa Romeo, Lancia and Volvo.

3.2. Common practices in the adaptation of sales targets and service standards

Following a mandatory provision in European competition law, *all 19 contracts* in the survey require that, every year, dealers agree with the manufacturer on a minimum number of cars they must sell (the sales target). In case of disagreement, the dispute must be deferred to an independent arbitrator, whose decision cannot be appealed (Table 1).[9] During interviews, managers of both manufacturers and dealers explained that, despite this mandatory negotiation and arbitration procedure, sales targets are computed every year according to a *formula prepared and periodically revised by manufacturers*. This formula typically determines a dealer's sales target as a weighted average of the brand's local and national market share, it applies to the whole distribution network, and is normally accepted by individual dealers without bargaining or invoking arbitration.

For performance standards other than sales targets, which are not regulated by the law, contracts allocate the right to choose them (decision right) to either the manufacturer or the dealers. When the manufacturer is assigned a decision right—for instance, the right to impose a minimum advertising budget—she can terminate dealers *immediately* for failure to comply. Given that manufacturers are required by the law to give a two years advance notice to terminate dealers at will—that is, without a cause in the contract—these decision rights substantially increase the manufacturers' ability to enforce compliance.

[9] See EC Regulation 1400/2002. The contracts also require that manufacturers and dealers agree on the arbitrator's name and, in case of disagreement, defer its choice to the local Chamber of Commerce.

Table 1 indicates that decision rights are allocated quite evenly: on average, they go to the manufacturer in 50% contracts, and to the dealers in the other 50%. However, during interviews, the managers consistently reported that, despite the even allocation of decision rights, standards are elaborated by manufacturers, who *dictate* them to dealers via *unilateral letters* and *e-mails* that do not require signature or counterproposals. In the manufacturers' words, "standards are non-negotiable," "setting standards is a prerogative of the manufacturer" and "not negotiating standards is part of the manufacturer's corporate identity"; in the dealers' words, "standards are unilateral," and "standards are not negotiated, but imposed". It is striking that this happens even when the franchise contract does not assign to manufacturers the formal right to set standards, in which case dealers could reject their decisions without risking termination. In support of this statement, several dealers showed me "intra-network" letters and operating manuals with costly requirements that, according to the franchise contract, manufacturers had no right to impose, such as increasing the amount of fuel injected in cars prior to delivery, committing to deliver cars to customers within 5 days from announced date, or owning, rather than renting, the machinery and tools in repair workshops.

3.2. Common practices in the adaptation of rewards and penalties

At the end of the year, dealers who have complied with standards receive from the manufacturer a discount on the list price of every purchased car. The discount rate associated to each type of standard is revised yearly, and reported in an annex to the

franchise contract. In most cases, discounts are granted even when the manufacturer has a contractual right to impose standards, except when these are declared *essential* to identify and protect the brand, as in the case of fundamental showroom features. For essential standards, manufacturers do not offer a discount, relying, instead, on the power to terminate non-performing dealers, which is embedded in their decision rights, to insure compliance. In *all the contract annexes* in force during 2002, discounts were defined as *percentages of the list price*. During interviews, the managers confirmed that this is a common practice in the industry. Importantly, all franchise contracts assign to the manufacturer the right to modify the list price at will, and without advance notice (Table 1). This implies that, even after dealers have implemented standards as required, manufacturers can effectively choose how much to reward them by adjusting the list price.

3.3. Discussion

Table 2 summarizes the contractual practices in Italian automobile franchising, and compares them with the predictions of the model in section 2. According to the model, terms of trade such as sales targets, standards and discounts, are ex post contractible. Therefore, manufacturers and dealers should negotiate them whenever updates are necessary, and after reaching an agreement, should formalize it in a court-enforceable contract, together with the payments each party is entitled to. Moreover, the model predicts that, by increasing a party's bargaining power, decision rights should increase her ability to extract favorable terms of trade from the ex post negotiations.

<TABLE 2 HERE>

The data do not seem to support these predictions. First, while manufacturers and dealers, represented by their associations, bargain ex ante over the allocation of decision rights, they *do not bargain ex post over the decisions*. Instead, manufacturers define sales targets, service standards and discounts unilaterally, and dictate them to dealers without asking for their approval or counterproposal, *even when the franchise contract actually assigns decision rights to the dealers*. Second, the payments dealers receive for implementing standards are *discretionary*, rather than obligatory: while discounts are formalized in contract annexes, they are defined as percentages of the list price of cars, which manufacturers can change at will, even after dealers have implemented the required standards. If standards were ex post contractible, as in the model, we would not expect manufacturers to be free to renege on compensation. Finally, the model would predict that, whenever they have the right, manufacturers use the "stick" of termination, rather than the "carrot" of discounts, to insure that dealers comply with their preferred standards, since that would represent the cheapest solution for them. In contrast, the data tell us that, for all those standards they don't deem as essential to protect the brand, manufacturers make dealer cooperation voluntary, and reward it through discounts, even though they have a contractual right to force compliance under the threat of termination.

4. An alternative hypothesis: decision rights as adaptation mechanisms

The data suggest that, in contrast with a basic assumption of the model, manufacturers and dealers behave as if the terms of trade were *ex post non-contractible*, and delegate the task of adapting and enforcing them to the manufacturers, who are better informed on the long-term benefits of different standards and, therefore, are in a position to serve as specialized decision-makers for the network as a whole.[10] The fact that manufacturers invariantly dictate standards to the dealers, despite the even split of decision rights in franchise contracts, also suggests such delegation is often *informal*, rather than formal (Baker *et al*. (1999)). Dealers focus on sales, relying on manufacturers to set efficient standards and fairly distribute their benefits, and manufacturers focus on standard elaboration, relying on dealers to implement them without frictions (Hadfield (1990)). Consistent with this hypothesis, even when they have formal decision rights, manufacturers offer discounts to the dealers for implementing several types of standards. This may signal to the dealers the manufacturers' intention to share the benefits from a valuable brand with them, thus motivating them to accept the role of manufacturers as decision-makers. However, to guarantee that manufacturers also have long-term gains from the relationship with the dealers, discounts are not offered for standards that strongly benefit dealers by promoting the common brand. In these cases, manufacturers simply threaten disciplinary termination if dealers do not comply, and focus their efforts on persuading dealers that these standards are essential for the network to be competitive.

[10] Aghion and Tirole (1997) formally analyze asymmetric business relationships in which the uninformed party must rely on the informed one to make decisions.

Given that decision rights do not serve as "bargaining chips", as predicted by the standard theory, what is their role in these asymmetric, relational contracts? In particular, given that manufacturers always call the shots in the relationship with dealers, why don't they receive all the decision rights? The answer that seems most consistent with the case presented in this paper, and with previous empirical works on the topic, is that decision rights are last legal resorts against the parties' temptation to deviate from the relational contract (Klein (1996, 2000), Baker *et al*. (2009)). Therefore, they should be allocated to minimize the parties' reneging temptation, in order to facilitate an efficient adaptation of the contract terms. This may imply transferring formal decision rights to the manufacturers in some cases, and leaving them to the dealers in others.

An implication of the argument above is that manufacturer should have the power to terminate dealers for non-compliance when the standards they require are particularly complex and burdensome, in which case dealers may refuse to implement them despite the promised stream of discounts. This is consistent with the fact that the manufacturers always retain the right to terminate dealers for unfulfilling standards they consider essential to identify and protect the brand, such as showroom design and the handling of corporate logos and signs. It is also consistent with previous empirical works on automobile franchise contracts, which find that decision rights are allocated to car manufacturers when the dealers gain more from free-riding on the network's common standards due to intra-brand competition (Arruñada *et al*. (2001)) and "pro-dealer" regulations (Zanarone (2009)).

5. Conclusion

As shown in previous empirical works, automobile franchise contracts assign long-term decision rights to car manufacturers when the dealers have more incentives to free-ride on the network's common standards (Arruñada *et al*. (2001), Zanarone (2009)). Do they do so merely to protect the manufacturers' ex ante investments in the brand—as models of decision rights as "bargaining chips" would suggest—or to neutralize contractual hazards that prevent efficient standards from being chosen ex post? In this paper, I have addressed this question empirically. Using contractual data and the information from in-depth interviews with managers of the most representative car manufacturers and dealers in Italy, I have shown that, independent of who has formal decision rights, dealers adopt the standards dictated by the manufacturer and receive, in exchange, a discretionary discount on the wholesale price of cars. These practices suggest that manufacturers and dealers do not negotiate their terms of trade ex post. Instead, it seems that dealers informally delegate the manufacturers to serve as specialized decision-makers for the whole distribution network, to set standards and to reward their adoption through discounts. In these asymmetric relational contracts, a balanced allocation of formal decision rights between manufacturers and dealers may create a last-resort safeguard against the dealers' temptation to reject efficient but costly standards, and the manufacturers' temptation to impose opportunistic ones, helping to keep both parties within their "self-enforcing range" (Klein (1996, 2000), Baker *et al*. (2009)).

Appendix A: Proof of Proposition 1

Part (i): Since each party earns a (weakly) greater profit if her preferred decision, rather than the first best decision is chosen, (1) implies that

$$p^g(s) \geq 0 \text{ if } g = D \qquad (3)$$
$$p^g(s) \leq 0 \text{ if } g = M$$

That is, M (D) pays D (M) when D (M) has the decision right.

Part (ii): suppose that, at stage 4, M and D do not formalize their agreement in a contract. If D (M) chooses $d^{FB}(s)$ before M (D) pays, M's (D's) best response is to pay nothing. Anticipating this, D (M) chooses $d^D(s)$ ($d^M(s)$) instead of $d^{FB}(s)$. Similarly, if M (D) pays $p^D(s)$ ($p^M(s)$) before D (M) chooses *d*, D's (M's) best response is to choose $d^D(s)$ ($d^M(s)$) instead of $d^{FB}(s)$. In either case, the ex post surplus is $\sum_i \pi_i\left(d^D(s), s\right) < \sum_i \pi_i\left(d^{FB}(s), s\right)$ when D has the decision right and $\sum_i \pi_i\left(d^M(s), s\right) < \sum_i \pi_i\left(d^{FB}(s), s\right)$ when M has the decision right, which is inefficient.

QED.

Appendix B: Proof of Proposition 2

Suppose, first, that the implicit agreement requires M and D to sign a contract at stage 4. This agreement is self-enforcing if, and only if M (D) is better off paying (accepting) $\tau^g(s)$ and earning the continuation payoff forever after than bargaining for $p^g(s)$ and earning the spot payoff forever after, that is, if

$$-\tau^g(s)+\frac{1}{r}\left[M^{Rg}-w^g\right]\geq -p^g(s)+\frac{1}{r}M^{SP} \tag{4}$$

$$\tau^g(s)+\frac{1}{r}\left[D^{Rg}+w^g\right]\geq p^g(s)+\frac{1}{r}D^{SP} \tag{5}$$

for every $s\in S$. Conditions (4) and (5) are satisfied in every state only if they are satisfied in the state in which they are tightest. Summing up (4) and (5) for such state and rearranging yields the unique necessary conditions

$$\underset{s}{Max}\left\{\tau^M(s)-p^M(s)\right\}-\underset{s}{Min}\left\{\tau^M(s)-p^M(s)\right\}\leq\frac{1}{r}\left(S^{RM}-S^{SP}\right) \tag{6}$$

$$\underset{s}{Max}\left\{\tau^D(s)-p^D(s)\right\}-\underset{s}{Min}\left\{\tau^D(s)-p^D(s)\right\}\leq\frac{1}{r}\left(S^{RD}-S^{SP}\right) \tag{7}$$

depending on whether M (condition (6)) or D (condition (7)) has the decision right, respectively. These conditions are also sufficient for self-enforcement because, if they hold, one can use the fixed transfer w^g to insure that both parties' individual self-enforcement constraints hold as well (Baker *et al*. (2002), Levin (2003)).

Suppose, now, that the implicit agreement simply requires M (D) to pay (accept) $\tau^g(s)$ if $d^{FB}(s)$ is implemented, without need to sign a contract at stage 4. In this case, the party without decision right still has an opportunity to renege on the payment $\tau^g(s)$ once $d^{FB}(s)$ has been implemented, that is, between stage 4 and stage 5. When M has the decision right, this implicit agreement is self-enforcing if, and only if

$$-\tau^M(s)+\frac{1}{r}\left[M^{RM}-w^M\right]\geq -p^M(s)+\frac{1}{r}M^{SP} \tag{8}$$

$$\tau^M(s)+\frac{1}{r}\left[D^{RM}+w^M\right]\geq \frac{1}{r}D^{SP} \tag{9}$$

which yields the unique condition

$$\underset{s}{Max}\left\{\tau^M(s)-p^M(s)\right\}-\underset{s}{Min}\left\{\tau^M(s)\right\}\leq\frac{1}{r}\left(S^{RM}-S^{SP}\right) \tag{10}$$

When D has the decision right, the implicit agreement is self-enforcing if, and only if

$$-\tau^D(s)+\frac{1}{r}\left[M^{RD}-w^D\right]\geq\frac{1}{r}M^{SP} \tag{11}$$

$$\tau^D(s)+\frac{1}{r}\left[D^{RD}+w^D\right]\geq p^D(s)+\frac{1}{r}D^{SP} \tag{12}$$

which yields the unique condition

$$\underset{s}{Max}\left\{\tau^D(s)\right\}-\underset{s}{Min}\left\{\tau^D(s)-p^D(s)\right\}\leq\frac{1}{r}\left(S^{RD}-S^{SP}\right) \tag{13}$$

Condition (10) is tighter than (6), implying that, when M has the decision right, an implicit agreement that requires M and D to contract $\tau^M(s)$ and $d^{FB}(s)$ at stage 4

generates less reneging temptation than an implicit agreement that does not. Similarly, condition (13) is tighter than (7), implying that, when D has the decision right, an implicit agreement that requires M and D to contract $\tau^D(s)$ and $d^{FB}(s)$ at stage 4 generates less reneging temptation than an implicit agreement that does not. QED.

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Table 1. Decision rights and procedure to define sales targets in car dealership contracts

Clause assigning to manufacturer right to choose:	Proportion of clause in contracts
List price	1
Showroom design	0.73
Advertising contribution	0.52
Advertising quality	0.52
Advertising budget	0.15
Size of personnel	0.47
Qualification of personnel	0.36
Mandatory training of personnel	0.73
Minimum operating capital	0.36
Customer satisfaction programs	0.47
Customer satisfaction targets	0.52
Dealers' working hours	0.15
General duty to respect standards	0.63
Clause requiring negotiation and arbitration to define sales target	1
Number of contracts	19

Table 2. Ex ante decision rights and ex post decisions: observed practices vs. predictions of the "bargaining chip" model

	Who makes decisions ex post?		Which party is compensated ex post?		How is dealer's compensation defined ex post?	
Decision right assigned ex ante to	*Model*	*Data* (100% interviews)	*Model*	*Data* (100% interviews & annexes)	*Model*	*Data* (100% interviews & annexes)
Manufacturer	Both parties, by agreement	Manufacturer	Manufacturer	Dealer	Contracted before performance (obligatory)	Fixed by manufacturer after performance (discretionary)
Dealer	Both parties, by agreement	Manufacturer	Dealer	Dealer	Contracted before performance (obligatory)	Fixed by manufacturer after performance (discretionary)