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Information technology has disrupted buyer-seller negotiations. Many authors believe that we are living in a 'seller beware' economy, wherein customers luxuriate in the wealth of information available to them and enter negotiations armed with troves of data that were inaccessible decades ago (Pink 2012). The proverbial asymmetric information that benefited sellers in traditional sales negotiations is believed to have been symmetrized in favor of buyers, who negotiate better deals thanks to the prevalence of information available to them prior to negotiations. According to an Accenture study, over 94% of business buyers research extensively over the internet and third party websites for competitive product and pricing comparisons prior to contacting a potential vendor (Accenture 2014). Likewise, automobile buyers can search for the average price paid by other consumers and even access the estimated dealership cost for any specific model from websites such as truecar.com, Edmunds.com, or kbb.com and leverage this data to get a good deal out of their negotiations.

However, despite the widely-held belief that the power has significantly shifted towards buyers, the distribution of information remains largely skewed towards the sellers when it comes to the 'backend' of the deals or the so-called 'aftermarket': products and services that augment the main purchase. For instance, once an automobile buyer agrees on a final price and enters the Finance and Insurance (F&I) phase of the purchase, they have little prior information about the quality and pricing of various options presented to them such as add-on products, different service or insurance options, or the most affordable loan they are eligible for (Guillot 2016). Similarly, most B2B software vendors benefit from the fact that their customers are mainly focused on the upfront license prices, due to the availability of such data, rather than on how

much they pay on the backend in software service and maintenance fees, where the bulk of the vendors' profits come from (Scavo 2005).

Facing eroding margins on the 'frontend' of the deals (i.e. the main purchase) due to well-informed customers, many firms now see the aftermarket as the main driver of their profits. Aftermarket profits have become an integral part of the total margins in many industries such as industrial machinery, original equipment, computer hardware, prepackaged software, and automotive industry, outstripping profits from selling the product itself in many cases (Cohen, Agrawal, and Agrawal 2006; Cusumano 2008; Quinn 1992; Reinartz and Ulaga 2008). IBM for instance, gains more than 60% of its total revenues from its aftermarket, up from about 35% in 1996. According to National Automobile Dealers Association, more than 70% of an average automobile dealer's gross profits come from its high-margin F&I items as well as service and parts department, surpassing frontend margins from selling new and used cars (Henry 2012; Reed 2013). Not only aftermarkets fetch handsome profits for product firms, but their margins can also boost profitability in firms' product markets and drive the overall margins up (Suarez, Cusumano, and Kahl 2013). Boston Consulting Group reports that product companies with a larger aftermarket share of overall revenues deliver higher total shareholder returns (BCG 2012).

Despite the importance of the backend, negotiation researchers have primarily focused on the frontend of the deals. In this vein, the main topics touched on include the impact of customer characteristics (Patton and Balakrishnan 2010; Wieseke, Alavi, and Habel 2014; Zettelmeyer, Morton, and Silva-Risso 2006), negotiation styles (Adair and Brett 2005; Brett 2000), and specific negotiation strategies (Adair et al. 2004; Blanchard, Carlson, and Hyodo 2016; Brett and Thompson 2016; Srivastava and Chakravarti 2009) on the outcome of the negotiation.

In this study, we examine the effect of a particular negotiation strategy practiced in the *frontend*, on customer profitability in the *backend* of the deal. This is motivated by the differing distribution of information across the two stages, which has created a unique setting untapped by prior research: while the frontend is characterized by information *symmetry* due to recent changes in customer knowledge, sellers keep enjoying information *asymmetry* in the backend. We argue that increasing information symmetry in the frontend has created a unique opportunity for marketers to gain customers' trust. Under information asymmetry, it is much more difficult to build trust since customers cannot verify the accuracy of the information that salespeople communicate to them (Srivastava, Chakravarti, and Rapoport 2000).

Drawing from prior research that underlines the importance of a cooperative style in the beginning of the negotiation (Adair and Brett 2005), we theorize that disclosing seller's cost at the start of the negotiation, or what we call 'open negotiation,' builds trust, particularly because the well-prepared customer can verify that the disclosed information is accurate. Subsequently, the earned trust will pay handsomely in the backend of the deal, where it is much needed due to information asymmetry surrounding the backend.

Across three studies, one observational study in the automotive industry, where we observed real salesperson-customer negotiations, and two lab experiments, we found that revealing the factory invoice price of the product (i.e. seller's cost) at the beginning of the negotiation, significantly improves backend profits compared to not disclosing the invoice or disclosing it in later stages of the negotiation. In the field study, we found that customers to whom the invoice price of a car was revealed at the beginning of the negotiation, did not significantly pay lower in the frontend, but on average contributed about $800 more to backend profits and were more likely to come back for service than those to whom the invoice price was

either not disclosed or disclosed in later stages of the negotiation. We also found that this effect works better for face-to-face than online negotiations. We supplemented the observational study with two lab experiments that allowed us to test the mediating role of trust, the moderating role of customer knowledge, and also rule out alternative explanations.

Our results suggest that information, which is the most valued piece in the negotiation game, can strategically be sacrificed to build trust. Customer trust is easier to build under information symmetry because the disclosed information is verifiable. Trust is particularly helpful in the backend of transactions because they are characterized by information asymmetry.

This finding suggests actionable managerial implications, especially since most firms have realized that succeeding in the market does not guarantee success in the aftermarket. A recent study by Bain & Company revealed that many firms utilize only 10% to 25% of their full aftermarket potential for their installed base (Strähle, Füllemann, and Bendig 2012). Our results suggest that applying a simple strategy in the frontend can help firms significantly improve their backend margins. Moreover, because salespeople are often incentivized based on their immediate sales rather than the aftermarket outcomes, our findings imply that a more holistic look at the entire value chain might be better in designing sales force compensation plans.

We contribute to the extant literature (see Table 1, following References) by extending prior research, which a) has mainly focused on the frontend outcomes of the negotiation but not on the backend outcomes, b) has not studied the timing of negotiation strategies, c) has not looked at the differing nature of information distribution at various stages (i.e. symmetric in the frontend; asymmetric in the backend) and the relationship between these stages, and d) has mostly relied on experimental or analytical work than documenting real negotiations in the field. Finally, we contribute to the personal selling literature that dichotomizes selling behaviors into

transactional versus relational methods by showing that open negotiation can be both relational and transactional.

THEORY AND HYPOTHESES

Negotiation Literature

Negotiation has long fascinated scholars across various disciplines such as business, economics, and social psychology. Despite the long interest in the topic, the bulk of the empirical literature has not focused on recent changes in customer knowledge, which alter the dynamics of negotiation, information sharing, and trust building. Moreover, the literature has not considered two-part negotiations (front- and back-end of a deal) despite the size of the aftermarkets in many negotiated product markets.

Negotiation strategies. Researchers have identified two general categories of behaviors used by the parties involved in negotiations: competitive behaviors, also called distributive strategies, and cooperative behaviors, also called integrative strategies (Brett and Thompson 2016; Weingart et al. 1990). Negotiators with a competitive approach use a variety of different tactics with the ultimate goal of influencing their counterpart to make concessions, while cooperative negotiators aim at maximizing joint gains and creating value (Weingart et al. 1990). The set of cooperative strategies studied in the literature include proposing and exploring options for mutual gains, relationship building, and exchanging information about preferences and interests (Brett and Thompson 2016; Fisher, Ury, and Patton 2011). Sharing information about interests and priorities could help reaching an agreement faster by allowing the two parties to focus on their own priorities and find a common ground (Fisher et al. 2011).

Information sharing. While researchers have viewed information exchange as a cooperative strategy in the mentioned studies, the type of information sharing studied in the literature significantly differs from explicit price or cost disclosures and is more about sharing priorities and interests. In particular, this line of research has focused on exchanging a series of questions and answers that generate insight about underlying motives, concerns, and priorities, which subsequently help both parties reach an agreement faster by identifying common interests (Fisher et al. 2011; Thompson 1991). One notable exception is Tadelis and Zettlemeyer (2015), where the authors examine disclosing explicit information in an auction setting. These authors find that disclosing information about the quality of the products will help the profits of the multiproduct auctioneer by matching heterogeneous buyers to products of varying quality. However, the context of that paper is very different from the one-on-one negotiation setting often studied in the literature and of interest to this research.

The key distinction between sharing information about interests or priorities, studied in previous research, and explicitly disclosing cost or true value information lies in the definition of cooperative strategies as behaviors that aim at "enlarging the pie" (Brett and Thompson 2016; Thompson 1991). Sharing interests and priorities allows the parties to focus on joint gains. However, explicit disclosure of cost or quality information is an invitation for the other party to "slice the pie" in their favor. For instance, by disclosing the factory invoice price of a product (i.e. seller's cost), a seller allows the buyer to push the negotiated price as close as possible to the revealed cost. Hence, by using this strategy, the seller can send an even stronger signal of cooperativeness to the buyer by demonstrating their willingness to reach a deal at the expense of their own profits. Meager research has addressed this type of information disclosure despite its interesting potential impact on negotiation outcomes. However, studying this strategy is

particularly opportune in light of the increasingly available data and knowledgeable customers. Marketers might find that explicit cost or price information are becoming less valuable to withhold than to disclose in a way that signals cooperation and builds trust.

Trust and information asymmetry. Researchers differ in their view of the link between trust and cooperative behaviors such as information sharing. On one hand, some scholars contend that the goal of information sharing is to gain the other party's trust by signaling a sacrifice in return for a better chance of reaching an agreement (Adair and Brett 2005; Srivastava and Chakravarti 2009). These researchers have found that parties involved in information sharing are perceived as less competitive and less profit-oriented.

However, the bulk of the literature views trust as an antecedent rather than a consequence of information sharing and cooperative behavior (Brett and Thompson 2016; Kong, Dirks, and Ferrin 2014). Many scholars have argued that cooperative behaviors such as information disclosure are inherently risky because they make the negotiator vulnerable to exploitation by the other party (Gunia et al. 2011; Kong et al. 2014). Therefore, negotiators who trust each other are more likely to signal their intentions and act in a cooperative behavior than those who do not necessarily trust their counterparts (Brett and Thompson 2016; Kong et al. 2014). For instance in a buyer-seller situation, familiarity with the customer could lead to more a cooperative negotiation (Ravenscroft, Haka, and Chalos 1993; Wieseke et al. 2014). However, the reverse effect of information disclosure on trust might not necessarily hold since the other party has no way to verify that the revealed information is accurate (Ho and Weigelt 2005; Kong et al. 2014; Srivastava et al. 2000).

These findings rely heavily on the traditional economic assumption of information asymmetry between the two parties. Under information asymmetry, the uninformed party always

runs the risk of manipulation by the informed party and hence cooperative behaviors such as information sharing might not necessarily be effective in signaling cooperation and building trust. The results in the above literature do not take into account recent shifts in customer knowledge that suggest that today there are many settings in which negotiations are characterized by information symmetry, rather than asymmetry.

Table 1 summarizes prior literature and specifies our theoretical contributions. In sum, the voluminous behavioral literature on negotiation does not address the recent shifts in customer knowledge that run counter to the information asymmetry assumption. Moreover, we study the disclosure of explicit information such as cost or true product value, which is very different from general communication or sharing information about interests and priorities studied in prior research. While the economics literature on negotiations does analyze the effect of cost information, it does not consider trust. Importantly, the aftermarket outcomes of the negotiation strategies are untapped in prior behavioral or economic research. Besides the mentioned practical importance of studying aftermarkets, they are theoretically interesting as well since the information distribution remains asymmetric there and the interplay between symmetric and asymmetric information structures has not been studied yet. Furthermore, unlike prior research that relies predominantly on analytical or experimental results, in our first study we draw our findings by observing real negotiations between salespeople and customers in an automotive dealership setting.

The Effect of Open Negotiation on Trust and Aftermarket Profits

The invoice price represents the cost of the product to the seller and signals the maximum point to which a customer can press for a price concession. Revealing the invoice price signals a weakening of the seller's bargaining position, since the salesperson commits to a reference point

that the customer can push for. This commitment, if made proactively at the beginning of the negotiation, can set the tone for the rest of the negotiation as a cooperative process. Moreover, social exchange and social penetration theories point to the importance of self-disclosure in fostering intimacy and trust in relationships (Cook and Emerson 1987; Jacobs, Hyman, and McQuitty 2001). Through self-disclosure, a party makes itself vulnerable, but signals trust and willingness to build a relationship with the other party (Laurenceau, Barrett, and Pietromonaco 1998). By revealing the invoice price, the salesperson allows the customer to exploit the exposed vulnerability by haggling away the seller's profits all the way down to the disclosed cost. In return, the salesperson hopes to capture customer's trust by signaling a genuine attempt in helping the customer get a good deal.

Under information asymmetry, revealing the invoice price need not build trust, since it would be possible for the seller to communicate false information in order to cheat or manipulate buyer's trust (Kong et al. 2014). However, when consumer have independent (albeit perhaps costly) access to invoice price information, information regarding the frontend of many transactions is verifiable and therefore less likely to be manipulated by the seller. Since 'reliable' communication is an antecedent of trust (Morgan and Hunt 1994), this self-disclosure strategy becomes particularly effective. Therefore, rather than a manipulation strategy, invoice disclosure is more likely to be seen as a sincere effort by the salesperson to help the customer.

We hypothesize that the timing of the disclosure also matters. Researchers have found that at the early stages of the negotiations, most negotiators assume that the other party wants the opposite of what they want (Lytle, Brett, and Shapiro 1999; Thompson and Hastie 1990). This assumption makes most buyers start from a competitive position at the outset of the negotiation (Lytle et al. 1999; Simons 1993). Using strategies that signal cooperation and gain the other

party's trust at this stage will set the tone for the rest of the negotiation (Adair and Brett 2005). However, building trust in the later stages of the negotiation has shown to be much more difficult than building trust in earlier stages (Ho and Weigelt 2005). As the negotiations proceed, the negotiators form beliefs about the opponent's underlying motives, which become difficult to change in later stages (Adair and Brett 2005; Ho and Weigelt 2005). Drawing from these findings, we argue that information disclosure might not be as effective in the later stages of the negotiation since the customer has already reached a good understanding of the salesperson's motives. Hence, customers might view invoice disclosure as a reactive strategy and a late attempt to reach an agreement rather than a genuine attempt by the salesperson to help them. Therefore, we hypothesize that information disclosure at the beginning of the negotiation is more likely to build trust than in later stages.

In contrast to the frontend of the negotiation, the backend of the deals is fraught with asymmetrically distributed information. Information on add-on products, interest rates, financing options, insurance plans, service and maintenance plans, etc. are often not as accessible as the information on the frontend of the deals. There is evidence that firms enjoy extensive information rents on the backend, which allows them to extract more profits from trustful customers. If information asymmetry prevails, the informed party should be better off when their uninformed opponent trusts them more. Therefore, we hypothesize that compared to other customers, customers whose trust is earned in the frontend of the deal will spend more in the backend, where information asymmetry exists and favors the seller.

H_1: Compared to nondisclosure and late disclosure of the invoice price, invoice disclosure in the beginning of the negotiation (open negotiation) is more likely to increase backend profits.

H_2: Trust mediates the effect of open negotiation on backend profits.

The Moderating Role of Prior Information and Negotiation Channel

Our hypotheses rely on the assumption that information regarding the frontend of deals are independently accessible and customers are well-prepared prior to negotiations. While we argue that this is the case in most negotiated product markets, we also experimentally test our hypotheses using two lab studies where we manipulate subjects' prior level of information. We think that the effects of information disclosure on trust should hinge on the verifiability of the communicated information. If the information regarding the frontend of the deal is not accessible to the customer, open negotiation might not be effective since the customer might not believe that the disclosed invoice price is accurate. In other words, the differing nature of information distribution, symmetric in the frontend and asymmetric in the backend, is key to our hypotheses. If the customer was uninformed about both the frontend and the backend, meaning that information was uniformly asymmetric across both frontend and the backend, then open negotiation should not build trust and the backend profits should not increase as a result.

> H_3: Customer's prior information about the frontend moderates the effect of open negotiation on trust, such that this effect works for customers who have prior information about the frontend, but not for uninformed customers.

We also hypothesize that the purchase channel moderates the salutary effects of open negotiation on the backend of the deal. Having taken over the retail industry during the past decade, online channels have now strengthened their presence in many negotiated product markets that traditionally only witnessed face-to-face negotiations. For instance, most auto dealerships have now internet departments in which 'internet salespeople' are tasked with negotiating through email or chat with customers who prefer to complete their purchase online.

Current research suggests that face-to-face negotiations tend to be more cooperative and less likely to reach an impasse than written negotiations (Valley 2000; Valley, Moag, and Bazerman 1998). Compared to written negotiations, face-to-face negotiations allow for a more efficient communication between the parties involved, which in turn fosters better coordination and leads to better outcomes (Valley et al. 2002). During face-to-face negotiations, body language, manners, and physical appearance facilitate understanding and ease the process (McGinn and Wilson 2004). Because these features are absent from online negotiations, negotiators feel a lack of control and greater vulnerability due to negotiating with a faceless opponent (Yang et al. 2009). Nonverbal cues as well as social and contextual information are restricted in digital communications, which can increase insecurity about the opponent's underlying motives (Byron 2008; Erez et al. 2013).

Not only online negotiators use reportedly more deceptive strategies due to the faceless nature of the negotiation, they also assume that the other party is less trustworthy than in face-to-face negotiations (McGinn and Keros 2002). Written negotiations limit the peripheral and interpersonal part of the communication, hampering rapport building or reaching common grounds, which are precursors of trust (Morgan and Hunt 1994; Valley et al. 1998).

Building on these findings, we argue that building trust is more difficult in online versus face-to-face negotiations. Invoice disclosure at the beginning of the negotiation builds trust in face-to-face negotiations due the verifiability of the disclosed information. However, although the online customer can also verify that the disclosed cost information is accurate, other contextual and social cues that the walk-in customer gains from face-to-face interactions with the salesperson and are crucial in trust-building are more likely to be absent from online negotiations. Therefore, we hypothesize that the open negotiation strategy in online transactions

does not build enough trust to significantly improve the backend profits of the deal.

> H_4: Purchase channel moderates the relationship between invoice disclosure and the backend profits such that the effect of early disclosure is decreased for internet buyers.

OVERVIEW OF STUDIES

In Study 1, we observed real buyer-seller negotiations in an automotive dealership context. For our analysis, we pooled three sources of data. First, we collected primary data from the observed negotiations on various aspects of the negotiation process, as well as the disclosure strategy (i.e., open negotiation, late disclosure, and nondisclosure). Second, we utilized the dealership's CRM data containing all the sales transactions during a 4-year period, which helped us retrieve certain product and salesperson information. Third, we used the dealership's service data pertaining to one year after the observed negotiations, which helped us estimate the observed customers' likelihood of returning for service.

We followed up this observational study with a laboratory experiment (Study 2), in which trained research assistants negotiated with subjects, as well as a scenario-based experiment (Study 3). Both experimental studies allowed us to measure trust and test its mediating role, as well as to assess the moderating effect of buyer's information-level by manipulating subjects' context-specific knowledge. The scenario-based setting of Study 3 allowed us to rule out alternative explanations such as customer's mental budgeting. Figure 1 summarizes how the three studies tie together.

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STUDY 1: OBSERVATIONAL STUDY

Research Context

We conducted an observational study in a large U.S.-based automotive dealership chain. The automotive industry embodies the three important features necessary for testing our hypotheses. First, buying a car usually involves negotiation between the customer and a salesperson (Bennett 2013). Second, the automotive industry has a sizable aftermarket (Reed 2013). Third, buyers search heavily over the internet prior to stepping into a dealership due to the prevalence of information found on various digital price comparison platforms such as Edmunds.com, TrueCar.com, or kbb.com (Edmunds 2018; TrueCar 2018). These platforms provide detailed information such as the invoice price of the car or the average price paid by other customers for a given model in a given area (see Figure 2, following References). Thus, more and more customers today enter auto negotiations with information that were traditionally not accessible, resulting in more information symmetry. However, as outlined in the introduction, these platforms only provide such detailed information about the frontend of the deals. Hence, there is still information asymmetry at the backend of the deal, favoring the dealerships.

---------- Please Insert Figure 2 about here ----------

Besides these features, the sales process in the automotive industry is highly similar to that in many other industries such as machinery sales, IT solutions, and construction equipment (Macdonald, Kleinaltenkamp, and Wilson 2016; Shankar, Berry, and Dotzel 2009).Thus, we consider the dealership setting a highly germane context for testing our predictions.

The sales process at an automotive dealership consists of two main steps (Montoya 2017a; Vincent 2018). First, buyers negotiate the price of a specific model with a salesperson. Once the customer agrees on a final price, the sales process enters the backend phase where several aftermarket items are presented to the buyer. Often called finance and insurance items

(F&I), these items might include add-on products and services such as anti-theft equipment, different insurance options such as the so-called "gap" insurance, extended warranties and similar services, and different financing options (Henry 2012; Reed 2013). In addition to accessing information on the backend profits from the F&I items, we also got access to a more distant aftermarket by collecting all the service data until a year after the observed negotiations in order to capture customers' likelihood of returning for service to the same dealership.

Having embraced the internet as an additional sales channel, most dealerships, including the subject of our study, have a dedicated internet department tasked with handling the entire sales process online (Banks 2002; Reed 2011). Customers who come through the internet use the dealership website to enter their information and ask for a price quote. Negotiations may then start from this initial contact by internet salespeople who finalize the deal through a chain of emails or chats (Montoya 2017b; Zettelmeyer et al. 2006).

Data Collection

We combined data from three different sources. First, we collected primary data with the help of several research assistants who observed negotiations at the collaborating dealerships during their working hours within a summer and a fall academic semester (see Figure W2 in the appendix). After each negotiation, salespeople and research assistants filled-in short surveys capturing their assessments of the observed negotiation. Overall, we were able to match 400 complete research assistant and salespeople surveys, which represents the effective sample size of Study 1. Table 2 provides an overview of essential characteristics of the effective sample.

Second, for these 400 buyer-seller negotiations, we included objective data from the dealership's CRM system. In particular, we were able to capture information on front-end gross profits and back-end gross profits as well as other information at the salesperson-, customer-,

car-, and dealership-level (see below). In total, we had access to CRM data from 105,332 sales transactions over four years. Third, we collected data from the dealership's service department until a year after the observed negotiations to examine the likelihood of observed customers' returning to the same dealership for service.

Measures and Selection

Measure of interest: To measure invoice disclosure, we drew on the primary data. Our research assistants coded salespeople's invoice disclosure as "open negotiation" when salespeople revealed the invoice price at the beginning of the negotiation, as "late disclosure" when the invoice price was disclosed at a later stage of the negotiation, and as "undisclosed" when salespeople did not reveal the invoice price. The distribution of the observed transactions across the three treatment levels was as follows: 45 observations in open negotiation, 54 in late disclosure, and 301 in the undisclosed condition.

Outcome variables: Our main outcome variable is *backend gross profits*. The CRM system of the dealership generated this measure, which represents the sum of the profits that the dealership obtains from the back-end of the transaction, including sales of add-on products and services, insurance items, financing, etc.

To get a better picture of the phenomenon under study, we also looked at two additional variables. First, we looked at the frontend gross profits. This variable is also computed by the CRM system as the profits gained from the main purchase, which would include the final agreed price minus the dealership's cost (i.e. the invoice price). Second, we looked at a more distant aftermarket from data provided by the dealership's service department. In particular, we measured whether each of the 400 customers from the field experiment returned to the dealership for their first service interaction within a one-year period.

Moderator and controls. In line with our conceptual framework, we looked at whether an observed negotiation was face-to-face or occurred over the internet. This would be our channel moderator. We controlled for customer demographics (i.e., gender, ethnicity, age), car-type fixed effects, deal-type dummies (i.e. new, used, lease), the week of the transaction, whether the transaction took place at the end-of-month, and the number of adult customers involved in the negotiation. We also controlled for additional factors that were specific to each dependent variable that we were looking at (i.e. backend, service, or frontend). For instance, for the service model we also included customers' distance to the dealership. For the backend model, we also included ratings of customer's knowledge of backend products as well as the percentage of available aftermarket products presented to the customer. Additional covariates are explained in the notes underneath each table.

Selection issues. In this observational study the three conditions of information disclosure were not randomly assigned. As a result, we discuss sources of potential endogeneity that may threaten a causal interpretation of the results:

1. Salesperson selection: Suppose that better salespeople disclose invoice information because they think that this maximizes total profits. Independently of information disclosure, better salespeople negotiate higher margins for dealers. To evaluate whether this story calls into question the causal interpretation of our results, notice that salespeople are not involved in the backend of the deal, which is done by specialized F&I managers. Since we find that invoice price disclosure is typically associated with smaller profits on the front-side of the deal, (which is the one salespeople control), this form of salespeople selection does not form an alternative explanation for the higher overall and back-end gross profits associated with information disclosure.

2. Vehicle selection: Suppose that salespeople were more willing to disclose invoice information for vehicles that have high levels of inventory. We know that, all else equal, vehicles are likely to sell for a lower price the more of them are on a dealer's lot (Israeli et al. 2018). Notice that this is not an alternative explanation for our findings. If this mechanism holds, it might explain lower profits on the frontend but it does not explain higher profits on the backend.
3. Buyer selection: Suppose that negotiation-savvy consumers are more likely to demand invoice-price information from salespeople and therefore are more likely to be in the early information disclosure condition. If so, we would expect overall profits from such consumers to be lower. Instead, we find the opposite, namely that higher overall and backend gross profits associated with information disclosure. Hence, this form of buyer selection does not form an alternative explanation for our finding. If anything, this explanation suggests that the effect we are measuring underestimates the causal effect because of selection.
4. Demand shocks: Suppose that times of strong demand where dealership profits are high coincide with information disclosure. This explanation is not supported in our data since the different information disclosure conditions were randomly distributed over the periods of time which the study was running (Figure W2 in the appendix).

Notwithstanding the above argument that endogeneity concerns should lead our findings to be an underestimate of the true effects, we implemented two alternative models to control for possible selection, one based on propensity score modeling and the other based on Heckman-type selection models. The strength of propensity-score-based methods is that these methods are

nonparametric in nature, meaning that they do not rely on any distributional assumptions that most other alternative methods make (Guo and Fraser 2015). Heckman-type selection models complement propensity-score-based methods by parametrically modeling the selection process and controlling for potential selection on the unobservable factors (Li and Prabhala 2007).

Since our treatment variable has three levels (open negotiation, late disclosure, and undisclosed), standard propensity score or selection models cannot be used for addressing selection, because these standard models are designed for binary treatment variables (Saboo, Chakravarty, and Grewal 2016). Therefore, we employed recent advances in addressing selection due to multivalued treatment variables for both model types. First, we applied a method called Marginal Mean Weighting with Stratification of the propensity score (MMWS; Atefi et al. 2018; Hong 2015, 2012). The MMWS method is a propensity-score-based model designed for treatment variables with more than two conditions and is shown to be the most rigorous matching procedure for this purpose (Hong 2015). We tested the robustness of this model with the only other statistically-sound option, inverse probability of treatment weighting (IPTW; Guo and Fraser 2015), which has slightly inferior properties than MMWS (Hong 2015).

Second, for the selection model, we applied recent advancements in Heckman's traditional two-step model, which allow for a multinomial specification of the selection equation (Bourguignon, Fournier, and Gurgand 2007; Fang et al. 2016). To preserve the parsimony of depiction, we left the details of the steps involved in MMWS to the appendix but included the model specification for the selection model within the main text. The results from both models are reported side-by-side to demonstrate the consistency of our findings across the two model types[1].

Covariates for the selection equation. For the selection equation used in both MMWS and the selection models, we had to examine variables that predicted invoice disclosure (Steiner et al. 2010). In addition to the variables from the main model, we included several other variables that could explain a salesperson's decision to reveal the invoice price. For instance, we included the inventory of the negotiated model at the time of the negotiation, hypothesizing a positive relationship between inventory and invoice disclosure (i.e. higher supply→ lower opportunity cost of losing a future customer with higher willingness to pay). To account for variation in salespeople's negotiation skills, we utilized the CRM data of all the past transactions of the observed salespeople as well as all the transactions going back to 4 years of data (more than 100k observations). In particular, using a quantile regression procedure detailed in the appendix, we looked at how much higher or lower than the median customer in the entire dataset each customer had paid for the same model, in the same period. We then averaged this measure across all the customers that a salesperson had sold to in the past to create a measure of the salesperson's negotiation skill before the observed negotiation (see the appendix for details)[2]. We also included other variables such as customer's product knowledge, whether the customer was a previous customer (Wieseke et al. 2014), and whether the customer stated a specific price goal (Busse, Israeli, and Zettelmeyer 2017) that might predict invoice disclosure.

Model Specification

MMWS. MMWS stratifies the sample based on the distribution of the propensity score in a way that in each stratum, the distribution of the covariates is balanced across treatment and control group. Each observation then receives a weight based on their stratum and the weights are used as regression weights in subsequent analyses (Atefi et al. 2018; Hong 2012). For brevity, we left the details to appendix and only reported the results here.

Specification of the selection model. We specified a multinomial logit model with the three invoice disclosure conditions as the dependent variable. Following the procedure outlined in recent work (Bourguignon et al. 2007; Fang et al. 2016), we used the predicted conditional probabilities φ_i for each choice of invoice disclosure given the conditional probabilities of all other choices $(1 - \varphi_i)$ to calculate the inverse Mills ratios λ_1 for open negotiation and λ_2 for late invoice disclosure. Subsequently, we included both inverse Mills ratios into the second-stage models as additional control variables, which would control for selection (Li and Prabhala 2007). Table W3 in the Appendix demonstrates the results of the estimation of the selection equation. Interestingly, we found that salespeople with higher negotiation skills were more likely to engage in open negotiation. Open negotiation was also more likely to appear for new cars and younger customers. Customers with higher product knowledge and a specific price goal in mind were more likely to induce a late disclosure.

Specification of the second stage model. To test the hypothesized relationships between the levels of invoice disclosure and the aftermarket outcomes, we specified the following regression models. The analysis regarding the frontend profits is left to the appendix.

$$BACK_i = \beta_0+\beta_1 OPEN_i+\beta_2 LATE_i+\beta_3 INT_i+\beta_4 OPEN_i \times INT_i+\beta_5 LATE_i \times INT_i+\boldsymbol{\beta}_6 \mathbf{X}_i+\beta_7 \lambda_{1,i}+\beta_8 \lambda_{2,i}+\varepsilon_i$$

, where subscript i refers to the observed negotiation, BACK is the backend profits, OPEN is open negotiation, LATE is late invoice disclosure, INT specifies whether the negotiation was conducted online, X is a vector of customer-, product-, and situation-specific controls, and λ_{ji}'s are the inverse Mills ratios computed from the selection equation.

The setup of our study allowed us to easily satisfy the exclusion restriction often recommended for selection models by excluding from the second stage model variables that directly affected the treatment but could not affect the outcome (Puhani 2000). The backend

phase of the purchase is usually carried out separately with an F&I specialist after the frontend negotiations with the salesperson concludes. Moreover, the backend profits are driven by items such as gap insurance, extended warranties, loan interests, anti-theft equipment etc., which are not related to factors affecting the frontend negotiations. Therefore, we excluded variables such as model inventory, salesperson's negotiation power, whether the customer mentioned a specific price during the negotiation, and customer's car knowledge from the second stage model, despite controlling for them in the first stage.

Service. As mentioned, we also examined the observed customers' likelihood of returning to the dealership for service, a year after the observed transactions. To account for potential censoring of customers who might have returned for their first service after the one-year window, we applied a survival model. In particular, we utilized recent developments in addressing selection issues in survival models by applying a weighted Cox proportional hazards regression model, once with MMWS and once with IPTWs as regression weights (Buchanan et al. 2014). Using customers' zip codes available in the CRM data, we controlled for their distance to the dealership as well as whether the dealership was the closest one to them. Table 3 represents the inter-correlation matrix for the main variables.

Results

Table 4 and Figure 3 demonstrate the results of the back-end gross profit models. Consistent with our hypotheses, we found that open negotiation significantly improves the backend gross profits compared to the nondisclosure condition (baseline), while the effect of late disclosure of invoice price on the backend is not significant. Interestingly, in our analysis of the frontend of the deal reported in the appendix (Table W4), we found that the frontend gross profits for customers in the open negotiation condition was not significantly lower than that for

those in the nondisclosure condition, while the significant loss in the frontend was coming from those in the late disclosure condition. In other words, disclosing the invoice did on average make customers pay lower compared to not disclosing it, as predicted by economic theories, but the loss mainly came from those in the late disclosure condition but not from those in the open negotiation condition. Therefore, besides contributing to the backend of the deal, the open negotiation strategy did not impose any significant losses to the frontend of the deal.

We also found support for the moderating role of channel (see Table 4, following References). In particular, the interaction of the channel type and open negotiation was significant. Moreover, results from the service model reported in Table 5 revealed that open negotiation also has a positive effect on customers' likelihood of returning for service a year after the interaction, even after controlling for customer's distance to the dealership. Similar to the results of the back-end gross profits, the late invoice disclosure had no significant impact on the likelihood of returning for service.

STUDY 2: NEGOTIATING IN THE LAB

Study 2 simulates a sales negotiation using trained research assistants as salespeople and tracking participants' actual behavior (Wieseke et al. 2014). We chose this approach to achieve three main goals. First, we wanted to replicate our findings from the first study in a different context. Second, the natural experimental setting in Study 1 did not allow us to survey customers and measure the mediating role of trust, which we aimed to do in this study. Third, we argued that the main strength of open negotiation is in the verifiability of the disclosed information. We wanted to test this idea by randomly assigning certain subjects to an 'uninformed' condition to see if open negotiation was equally effective for them.

Experimental Design

We randomly assigned 480 participants to 12 experimental conditions in a 3 (invoice disclosure: open negotiation vs. late disclosure vs. undisclosed) × 2 (channel type: face-to-face vs. online) × 2 (prior information level: informed vs. uninformed) between-subjects design. We recruited participants from all sections of the introductory class to Marketing at a leading European business school (63% female, 20.7 years of age on average).

We asked participants to read a fictional scenario in which subjects intended to purchase an office printer for their student initiative. Participants viewed the experiment as realistic (M = 5.23 on a 7-point rating scale). For the manipulation of the channel type, we randomly sent participants to different rooms. Specifically, participants that were sent to room A encountered a face-to-face interaction with a salesperson, while participants that were sent to room B sat in front of computers and negotiated via an online chat. For the manipulation of customers' information-level, we randomly assigned participants to the informed vs. uninformed conditions. Participants in the informed condition received information from a fictitious website called "machineseeker.com." Similar to the websites that customers can visit prior to purchasing a car, this website provided information on the printer's MSRP, the average prices paid in the customers' area, and the invoice price (see the Appendix for details). Participants in the uninformed condition did not receive any information prior to their negotiation.

We developed a standardized script for all salespeople to ensure that the selling behavior was identical across different conditions. The script included standardized responses to various customer reactions. The results were not sensitive to individual salespeople. After arriving at the experiment, all participants received a scenario description from a research assistant. The scenario told participants to negotiate for a new office printer as a member of a student organization. Finally, the scenario informed participants that they were about to encounter a

salesperson from an authorized dealer. After reading the scenario, participants entered either simulation room A (the face-to-face condition) or simulation room B (the internet condition).

The sales encounter started with the salesperson engaging the customer in a conversation about their printer preferences (which were stated in the scenario). It continued with the salesperson offering an office printer matching the customer's preferences (Wieseke, Alavi, and Habel 2014). In the open negotiation condition, the salesperson also revealed the invoice price when making the initial offer. In the late disclosure condition, the salesperson revealed the invoice price later in the negotiation, whereas in the undisclosed condition, the invoice price was not revealed. The actors were following the identical procedure based on a script that was equal for all participants, except for the particular invoice disclosure condition.

The frontend sales encounter concluded by the participants either buying or not buying the printer. In case the printer was purchased, the salesperson offered three additional aftermarket items that augmented the main purchase. We thus closely mimicked the setting in Study 1, but had much more control over potential noise due to using a standardized script. After concluding the backend encounter by either purchasing or not purchasing the aftermarket items, participants left the room and answered questions about their perceived trust to salesperson and to the selling organization, demographics, and completed manipulation checks on open negotiation, their information-level, perceptions of the scenario, and a hypotheses-guessing test.

Measures

Invoice price disclosure, channel type, and customer information level represent the predictor variables in Study 2. In addition, Table W6 in the Appendix details the measures for trust towards the salesperson as well as towards the selling organization. We measured the

seller's frontend and backend profits as the difference between the seller's costs and the realized negotiation outcomes (i.e., revenues).

Analyses and Results

The impact of open negotiation on the backend. Consistent with our findings from Study 1, we found that open negotiation enhances firm's backend profits, especially for face-to-face negotiations and the informed participants. ANOVA results revealed significant differences between the conditions ($F=7.76$, $p<.01$) and a significant interaction between invoice disclosure and the informed condition ($F=6.42$, $p<.01$) as well as between invoice disclosure and the face-to-face condition ($F=8.17$, $p<.01$). In particular, participants in the informed-open negotiation condition generated significantly higher backend gross profits than others ($M=301.01$, $SE=26.05$; $t=5.91$, $p<.01$). Likewise, participants in the face-to-face-open negotiation condition also generated higher backend profits ($M=359.49$, $SE=21.27$; $t=6.23$, $p<.01$). However, open negotiation did not significantly improve the backend profits compared to the other two disclosure conditions in online negotiations ($M=224.77$, $SE=21.78$, $t=-.87$, $p=.38$) or for uninformed subjects ($M=230.7$, $SE=21.24$, $t=-.58$, $p=.56$). These results provide further evidence for H1, H3, and H4 (see Figure 4 Panels A and B, following References).

The impact of open negotiation on the frontend. Regarding the frontend of the deal, our results were consistent with the findings of Study 1. We found that while late disclosure reduces the frontend profits, open negotiation does not significantly impact it (see Table W5 in Appendix). ANOVA results revealed significant differences between the conditions ($F=28.32$, $p<.01$) and significantly lower frontend profits for the late disclosure condition than the other two ($M=13.36$, $SE=.839$; $t=-8.27$, $p<.01$). In addition, we also found that when salespeople revealed the invoice price at the beginning of the negotiation (i.e. open negotiation), subjects

were more likely to purchase the main product than when the invoice was either not disclosed or disclosed later. In particular, 13 subjects in the nondisclosed condition and 8 in the late disclosure condition did not purchase the initial product, whereas only one subject in the open negotiation condition did not buy the printer (χ^2=10.39, p<.01). These results further emphasize the beneficial consequences of open negotiation.

Trust. ANOVA results, once with trust to salesperson and once with trust to the selling firm as the dependent variable, confirmed a significant difference between the conditions ($F_{trust_to_salesperson}$=5.82, p<.01; $F_{trust\text{-}to\text{-}seller}$=8.50, p<.01) in both models. We found significant interaction between invoice disclosure and the informed condition ($F_{trust_to_salesperson}$=4.37, p<.01; $F_{trust\text{-}to\text{-}seller}$=3.65, p<.05) and a significant interaction between invoice disclosure and the face-to-face condition ($F_{trust_to_salesperson}$=5.81, p<.01; $F_{trust\text{-}to\text{-}seller}$=6.81, p< .01). Moreover, participants in the face-to-face-open negotiation condition had significantly higher trust than others ($M_{trust_to_salesperson}$=5.88, SE=.20, t=5.24, p< .01; $M_{trust_to_seller}$=5.89, SE=.20, t=6.95, p<.01). Similarly, participants in the informed-open negotiation condition reported higher trust to salesperson as well as to the selling firm than participants in other conditions. ($M_{trust_to_salesperson}$=5.05, SE=.20, t=5.87, p<.01; $M_{trust_to_seller}$=5.14, SE=.20, t=7.27, p<.01).

Mediation analysis. Using Preacher and Hayes' PROCESS software (model 6 with 5000 bootstrapped samples), we analyzed whether trust mediated the effect of open negotiation on backend profits. Results indicated a significant total effect of open negotiation on backend profits (effect=78.74, boot-strapped SE (bootSE)=19.10, p<.01). Moreover, the indirect effect of early disclosure through the route above (Early disclosure → trust to salesperson → trust to the selling firm → backend profits) was significant (effect=44.51, bootSE=9.15; bootstrapped confidence intervals (bootCI): [26.57, 62.44]), supporting H2.

Moderated mediation. We carried out a moderated mediation analysis to test the effect of moderators (channel; information level) on the mediating role of trust. We found that the conditional indirect effect of open negotiation on backend profits through trust to salesperson is significant only for: (1) The informed participants (effect=35.92, bootSE=10.97; bootCI: [15.83, 59.27]), but not for the uninformed participants (effect=4.16, bootSE=10.64; bootstrapped confidence intervals: [–16.98, 24.83]) and (2) for the participants that had a face-to-face negotiation (effect=36.11, bootSE=11.17; bootstrapped confidence intervals: [15.96, 59.38]), but not for the participants that negotiated in a chat meeting (effect=3.97, bootSE=10.12; bootCI: [–16.00, 24.14]). Moreover, the index of moderated mediation was also significant for both the informed-open negotiation condition (index=31.76; bootSE=14.81; bootCI: [3.26, 62.35]) and the face-to-face-open negotiation condition (index=32.14; bootSE=15.02; bootCI: [4.02, 63.84].

STUDY 3: SCENARIO-BASED EXPERIMENT

Our first two studies benefited from real negotiations, either between real salesperson-customer dyads (Study 1) or between trained actors and participants (Study 2). While in Study 2 we wanted to have more control over the negotiations by having standardized scripts, a natural follow-up to these two studies would be a study in which we had complete control over the frontend negotiations. Therefore, for the third study, we decided to assign the entire frontend negotiations to a scenario that subjects would read and then we would measure their backend behavior based on the read scenario. Besides giving us more control over the conditions, this format would allow us to rule out certain alternative explanations such as mental budgeting.

For instance, one argument might be that customers have a mental budget for the entire purchase and since invoice disclosure allows price concessions, the customer would then spend the remainder of their budget on the backend. While interestingly in both studies we found

evidence against this argument[3], we wanted to formally rule out this scenario by fixing the final price agreed on across all conditions.

Experimental Design

586 participants were randomly assigned to each of the 6 experimental conditions in a 3 (open negotiation vs. late invoice disclosure vs. undisclosed invoice) × 2 (informed vs. uninformed) between-subjects design. We recruited participants from all sections of the introductory class to Marketing at a public U.S.-based business school. Again, participation in the experiment was rewarded with extra credit.

Subjects read a scenario in which they were asked to think as a restaurant manager who wants to purchase a commercial dishwasher. In the informed condition, students were told that they had done some research before purchasing the dishwasher and via a website called restaurantequip.com they had gotten information on average price paid ($850), invoice price ($750), and MSRP ($1100; see the Appendix). Subjects in the uninformed condition did not see this data. Next, the participants read the negotiation process depending on which disclosure condition they were in. To control for total (frontend + backend) budget arguments, in all the three disclosure condition scenarios, the same final price ($850) was agreed on. The description of the negotiation process in all three conditions was the same, with the exception of invoice disclosure and the timing of disclosure. The subjects then read the descriptions of six aftermarket products and services along with their prices offered by the salesperson and selected which ones they wanted to buy. Then the participants reflected back on the scenario and answered questions about the salesperson and the company (trust to salesperson, trust to the selling firm, etc.).

Analysis and Results

Backend. For our dependent variable, we looked at both the number of add-on items selected and the total backend revenues generated. A 3×2 ANOVA revealed significant differences between the conditions in both models ($F_{\text{number of add-ons bought}}$=2.97; $F_{\text{backend profits}}$ =2.78, p<.01) and a significant interaction between invoice disclosure and the informed condition ($F_{\text{number of add-ons bought}}$=4.15; $F_{\text{backend profits}}$=2.51, p<.01). In particular, participants in the informed-open negotiation condition significantly chose more products than others (M=3.4, SE=.12, t= 3.74, p<.01) and generated significantly higher back-end gross profits than those in other conditions (M=61.49, SE=2.59, t=3.56, p<.01), supporting our hypotheses (see Figure 4 Panels C and D, following References).

Trust. The same 3 × 2 ANOVA was performed with trust to salesperson as well as trust to the selling firm as the dependent variable. F test confirmed a significant difference between the conditions ($F_{\text{trust_to_salesperson}}$=8.87, p<.01; $F_{\text{trust-to-seller}}$=3.18, p<.01) in both models. Moreover, results revealed a significant interaction between invoice disclosure and the informed condition ($F_{\text{trust_to_salesperson}}$=2.59, p<.01; $F_{\text{trust-to-seller}}$ =2.52; p<.01). Particularly, participants in the informed-open negotiation condition had significantly higher trust than others ($M_{\text{trust_to_salesperson}}$= 5.33, SE=.13, t=5.87, p<.01; $M_{\text{trust_to_seller}}$=5.32, SE=.12, t=3.81, p<.01).

Mediation analysis. We used Preacher and Hayes' PROCESS software (model 6). Using 5000 bootstrapped samples, we found a significant total effect of open negotiation on the number of backend items chosen (effect=.20, SE=.10, p<.05). Moreover, the indirect effect of open negotiation through the hypothesized route (open negotiation → trust to salesperson → trust to the selling firm → number of additional products chosen) was significant (effect=.06, bootSE= .02; bootCI: [.02, .11]). We obtained similar results with the backend profits as the dependent

variable (effect = 1.92, bootSE = .76; bootCI: [.43, 3.40]). These results provide further support for H1 and H2.

Moderated mediation. Finally, we found that the conditional indirect effect of open negotiation on the number of purchased products through trust to salesperson is significant only for the informed participants (effect=.18, bootSE=.06; bootCI: [.08, .30]), but not for the uninformed participants (effect=.06, bootSE=.04; bootCI: [–.02, .14]). We found similar results with the backend profits as the dependent variable (indirect effect for the informed=4.01, bootSE=1.21, bootCI: [1.91, 6.52]; indirect effect for the uninformed=1.35, bootSE=.93, bootCI: [-.54,3.15]). The index of moderated mediation was also significant ($index_{number\ of\ products}$=.12; bootSE=.07; bootCI: [.01, .25]; $index_{backend}$=2.66,bootSE=1.47, bootCI=[.04, 5.80]) indicating that early disclosure is trust-building only for the informed participants.

GENERAL DISCUSSION

Under the traditional assumption of information asymmetry in negotiations, building trust is arguably the primary objective of negotiators. However, this primary goal is also difficult to reach because the party with less information can hardly verify the reliability of the claims made by the more informed party. However, the recent revolution in the way customers gather information about their upcoming purchases has created a unique situation in most negotiated markets. While the frontend has become more symmetric in terms of information distribution, the bulk of the marketers' profits has shifted to the backend of the deals where information distribution remains skewed towards the seller.

We argue that this new setting calls for a different approach in negotiating the frontend. Information symmetry in the frontend has made it easier to build trust, since customers can better verify the reliability of the communicated claims. Rather than withholding cost information,

which reveals the true value of the product to the seller, we propose that salespeople disclose this information at the beginning of the negotiation. We hypothesized that by disclosing their cost at the beginning of the negotiation to customers who can verify that the information is accurate, salespeople gain customers' trust. The benefits of the earned trust are subsequently reaped in the backend, where the information is asymmetric and favors the seller.

Theoretical Contributions

We contribute to the extant literature of buyer-seller negotiations, general negotiation, and personal selling in the following ways. First, the negotiation literature has been sluggish in addressing recent changes in the way customers access and collect information prior to negotiations. The literature has traditionally assumed that information asymmetry exists between the two parties and the asymmetry favors sellers (Brett and Thompson 2016; Kong et al. 2014; Milgrom and Weber 1982; Srivastava et al. 2000). However, this assumption could be relaxed due to the prevalence of data regarding the main purchase as well as more informed customers.

We demonstrate that negotiating under information symmetry calls for a different negotiation strategy than negotiating under asymmetric information. In particular, we show that disclosing cost information, which is deemed an unpardonable sin under information asymmetry, can be very useful and build trust in the era of information symmetry. Disclosing the invoice price of a product reveals the true value of the product to the seller. While researchers have looked at information sharing in the form of partially revealing interests and priorities in order to increase the likelihood of reaching a deal, the literature has treated cost disclosure as a drastic sacrifice that is unlikely to happen (Adair and Brett 2005; Brett and Thompson 2016). Under information asymmetry, the informed party is unwilling to disclose cost information and even if they do so, the uninformed party is unlikely to believe that the information is reliable (Brett and

Thompson 2016; Srivastava et al. 2000). However, according to our findings, cost disclosure at the beginning of the negotiation is actually beneficial under information symmetry, since it captures the trust of informed customers who can verify the reliability of the revealed information.

Second, our study extends prior sales research on price negotiations (e.g. Patton and Balakrishnan 2010; Wieseke et al. 2014) by introducing the concept of open negotiation. In particular, we demonstrate how salespeople can build customer trust by revealing the information that, despite being sensitive, is verifiable by the customer. Our findings build on behavioral negotiation theory (Neale and Northcraft 1991) which emphasizes the value of revealing and concealing information on negotiation outcomes and adds to prior work on information disclosure in auctions (Milgrom and Weber 1982; Tadelis and Zettelmeyer 2015), which has studied information disclosure as a matching mechanism between buyers and sellers.

Third, our study is the first to examine the effects of salespeople's negotiation behavior on customers' backend value. We thus extend prior research on price negotiations that has predominantly focused on negotiation outcomes that directly relate to the focal deal, such as profits or satisfaction with the outcome (Patton and Balakrishnan 2010).

Fourth, we studied a setting that is very common in practice, but untouched by researchers. These settings are characterized by the differing nature of information distribution across two stages: symmetric in the frontend and asymmetric in the backend. As we illustrated in study 2 and 3, the backend benefits of open negotiation hinges on this difference between the frontend and the backend. We found that when both stages have information asymmetry (i.e. the uninformed condition in study 2 and 3) open negotiation is not effective. We contribute to the

negotiation literature by examining this type of differing information distribution, which is key to the effectiveness of information disclosure.

Fifth, prior research has had a descriptive look at the evolution and progression of behaviors during negotiation (Arrow et al. 2004; Olekalns, Brett, and Weingart 2003). However, this line of research has not looked at the effectiveness of any given strategy at different times during negotiation. We contribute to this literature by finding that information disclosure is effective only at the beginning of the negotiation, but not later on.

Sixth, our results also shed light on the interplay of salespeople's negotiation behavior and the purchase channel, advancing current research that separately studies customer-level and seller-level factors (Patton and Balakrishnan 2010; Wieseke et al. 2014). Our results indicate that the effectiveness of open negotiation strongly depends on the negotiation channel. While open negotiation is particularly effective in increasing future customer value in face-to-face negotiations, the positive effect disappears for internet customers.

Finally, our research contributes to personal selling literature, which has dichotomized selling strategies in two broad categories of behaviors, namely transactional and relational strategies (Ingram et al. 2015). Transactional selling are behaviors that focus on closing individual transactions rather than forging relationships with customers (Rackham and DeVincentis 1998). These strategies can run a whole gamut of behaviors from discount giving to influence attempts that aim at spurring immediate sales (Boichuk et al. 2014; Ingram et al. 2015; Saxe and Weitz 1982). In contrast to transactional selling, relational selling contains a group of strategies that focus on building relationships with customers by earning customer's trust (Ingram et al. 2015; Narayandas and Rangan 2004; Weitz and Bradford 1999).

Our findings blur the well-known relational-transactional dichotomy. On one hand, the open negotiation can be viewed as a transactional behavior: by disclosing the invoice price of the product at the beginning of the negotiation, the salesperson is committing to a maximum point to which he/she can bend, thereby allowing the customer to push for concessions. Similar to discount giving and other transactional behaviors, the open negotiation strategy is a good way to stimulate immediate sales. We found support for this view in study 2 by finding that subjects to whom the invoice was disclosed were more likely to reach an agreement than others.

From another perspective, this strategy can be a relational selling method because of its effect on customer trust and customer future value. We found that customers were more likely to spend on the backend of the deal and even more likely to come back for service when salespeople disclosed the invoice at the beginning of the negotiation. Therefore, the open negotiation strategy can be classified as both a relational and a transactional method, a view that extends the currently bifurcating perspective of personal selling strategies.

Managerial Implications

U.S. firms and consumers spend about a trillion dollars annually on aftermarkets, which constitute the bulk of sellers' profits in many industries (Cohen et al. 2006). Most products for which a significant aftermarket exists are considered 'high-involvement' purchases, and hence are bought after negotiations between the buyer and the seller. Our results suggest that firms can utilize the extensive interaction between salespeople and customers during these negotiations to increase their aftermarket profits. This is particularly important since in many of these industries, the backend items have a much higher margin than the frontend. Moreover, certain elements of the aftermarket such as service and maintenance can bring in handsome stream of future cash flow. Interestingly, we found that disclosing the factory invoice at the beginning of the

negotiation did not significantly reduce the frontend margins compared to the undisclosed condition. Moreover, not only this trust-building strategy helps the backend of the deal without any significant frontend losses, it also increases the likelihood of reaching a deal. In our second study, we found that subjects in the open negotiation condition were more likely to reach a deal than those in the undisclosed condition.

These findings point to a number of actionable implications for practitioners. First, most firms incentivize their salespeople based on short-term negotiation outcomes, such as sales margin or number of units sold. According to our findings, companies need to focus on the entirety of frontend and the backend, when evaluating their salespeople's performance. Therefore, in order to motivate their sales force to maximize overall customer value, firms might need to adapt their control systems to account for the spillover effect of salespeople's negotiation behavior on other profit centers. To direct their salespeople towards potentially sacrificing the frontend in exchange for the backend, firms could extend the set of key performance indicators for performance evaluations to accommodate for aftermarket success as well.

Second, empirical evidence reveals that many firms today conceive their product sales and aftermarket sales as two detached businesses (Jasmand, Blazevic, and de Ruyter 2012). However, this paper calls for a better analysis of the interdependencies between the frontend and the backend. Our results show that building trust in the front-end is a strong driver of customer's aftermarket value. Thus, firms should institutionalize the cooperation between their various customer touchpoints in order to maximize the overall customer value. For instance, firms could encourage a systematic job rotation for their service, F&I, and sales personnel to enhance the abilities and the knowledge of their customer-contact employees regarding all potential touchpoints and encourage the teamwork across these touchpoints.

Third, our results suggest a different look at traditional bargaining strategies. Facing sophisticated and knowledgeable customers, firms might modify current salesforce training strategies to include trust-building behaviors such as open negotiation. Moreover, we recommend firms to adapt their specific incentives and guidelines based on their priorities. In particular, firms willing to secure the frontend gross profits might want to motivate their salespeople to apply a more competitive negotiation strategy. However, for firms that focus on increasing customer's aftermarket value, our findings recommend a transparent negotiation strategy in order to build trust. Finally, we recommend firms to vary their guidelines and incentives with respect to the focal negotiation channel. While early open negotiation behavior is effective in improving future customer value in face-to-face negotiations, it is not particularly useful for internet communications.

APPENDIX

Computation of salesperson's negotiation skill

To compute salesperson's negotiation power, we followed three steps. First utilizing the entire CRM data, we ran the following quantile regression model (Davino, Furno, and Vistocco 2014; Hao and Naiman 2007) to compute the median price paid for a given car-type in a given month of a given year.

$$Q\tau(P|x) = \inf (p : Prob(P \leq p|x = \tau), \tau = .5 \quad \text{(W1)}$$

$$Q\tau(P|x) = X'\beta(\tau) \quad \text{(W2)}$$

, where P is the final price paid and X is the vector of car-type covariates, month, year, and the dealer. The fitted values of the above regression (equation 2) give the median price paid for a given car-type in a given dealership in a given time. Similar to Busse, Silva-Risso, and Zettlemeyer (2006), we defined the car-type as cars with the same make, model, year, and trim. For instance the fitted values of equation 2 can give the median price paid for a 2012 Infiniti JX35 84113 sold in August 2012 in dealer X.

Next, for each transaction, we divided the final price paid by the customer by the median price computed as explained above. This ratio reflects the degree to which a particular customer had paid compared to others who bought the same product from the same dealer in the same month of the same year. Finally, we computed salesperson negotiation power by averaging the above ratio for each salesperson across his/her entire sales records in previous years to reflect his/her ability to negotiate higher than average prices.

MMWS

The MMWS method is the most rigorous *nonparametric* method designed for addressing selection for treatment variables with more than one condition (Atefi et al. 2018; Hong 2015, 2012). Standard matching procedures such as nearest neighbor matching are designed for binary treatment variables. The only other viable propensity-score-based option for multivalued treatments is the inverse probability of treatment weighting (IPTW; Guo and Fraser 2015), which has demonstrated slightly inferior properties to MMWS (for a detailed comparison of MMWS with alternative methods see Hong 2015). Both methods are propensity score *weighting* methods, generating regression weights that can be used in subsequent analyses. The generated weights can be used in a comprehensive range of statistical models including survival analysis (Buchanan et al. 2014; Hong 2015). We found consistent results with both IPTW and MMWS.

The IPTW first uses a multinomial logistic regression to regress the three negotiation strategies as the dependent variable on potential confounding covariates or other variables of interest. For each observation, the multinomial logit computes the estimated probabilities (i.e. the propensity scores) of receiving each of the three treatment variables conditional on the covariates. Then for each observation receiving treatment *z*, the IPTW weights are computed as $pr(Z=z)/\theta_z$, where θ_z is the computed propensity score for receiving that treatment and $pr(Z=z)$ is the proportion of observations receiving that treatment (Hong 2015). For instance, if the propensity score for being in the late disclosure condition for an observation assigned to the late disclosure condition is .2, then the IPTW would be (54/400)/.2=.675.

The MMWS uses the following steps to compute the regression weights. First, for each treatment condition, we ran a binary logistic regression to determine the likelihood of receiving that treatment. The fitted values of the logistic regression are the propensity scores. Second, we

stratified the sample into different subclasses such that in each subclass, the propensity score as well as the relevant covariates had the same distribution for observations that received that treatment and those that did not. Finally, for observation assigned to treatment T_i, we computed the marginal mean weights as MMWS=$(n_S/n_{Ti,S})\times$ pr(Z=z), where n_S is the number of observations in stratum S, $n_{Ti,S}$ is the number of observations assigned to treatment T_i in stratum S, and pr(Z=z) is the proportion of observations receiving T_i (Atefi et al. 2018; Hong 2015, 2012; Hong and Hong 2009). Table W1 summarizes the complete stratification information along with the computed marginal mean weights. For instance, for an observation in the undisclosed condition that fell into stratum 3, received a marginal weight of (44/28)(301/400)=1.18.

Table W1 – Number of Observations in Each Stratum across the 3 Treatments and Computed MMWs

	T_0 = Undisclosed				*T_1 = Open negotiation*				*T_2 = Late disclosure*			
Stratum	MMW	T_0=1	T_0=0	Total	MMW	T_1=1	T_1=0	Total	MMW	T_2=1	T_2=0	Total
1	1.67	14	17	31	1.93	15	242	257	2.60	14	256	270
2	3.16	5	16	21	.71	15	79	94	.64	13	49	62
3	1.18	28	16	44	.37	15	34	49	.34	13	20	33
4	1.18	30	17	47		-	-	-	.34	14	21	35
5	.97	56	16	72		-	-	-	-	-	-	-
6	.83	168	17	185		-	-	-	-	-	-	-
Total treated		301				45				54		
Total										400		

One of the strengths of the MMWS method is that it has a built-in procedure that adjusts for potential misspecifications of the propensity score model, making it superior to IPTW (Hong 2015). Moreover, if observations receiving T_i are over-(or under-) represented in their stratum, they will receive a weight below (or above) 1 so that after weighting, all the three treatment groups are expected to have the same pretreatment composition. Table W2 presents the complete covariate balance, pre-and post-matching, for each of the negotiation strategies. Figure W1 graphically compares pre- and post-matching covariate balance for selected treatments.

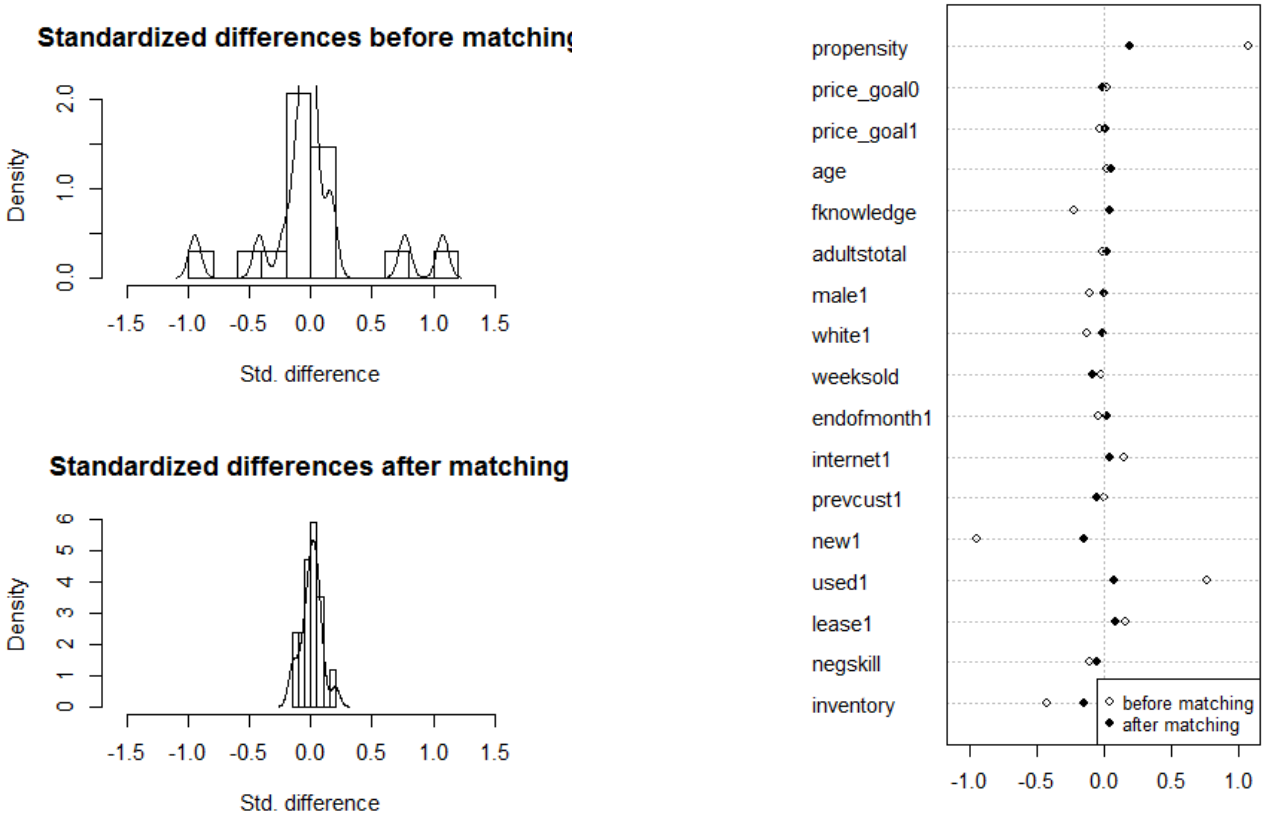
Table W2 – Covariate balance across the three negotiation strategies before and after MMWS*

	Means $T_i = 1$		Means $T_i = 0$		Std. Mean Diff.	
Covariates	Before	After	Before	After	Before	After
T_0 = Undisclosed						
Propensity score	.797	.651	.619	.619	1.075	**.198**
Salesperson's negotiation skill	.008	.009	.010	.010	-.099	**-.051**
Model inventory	23.472	29.940	33.404	33.404	-.421	**-.147**
Customer's age	.075	.563	-.227	-.227	.022	**.059**
Customer's product knowledge	-.070	.263	.213	.213	-.223	**.039**
Number of customers	-.001	.017	.002	.002	-.004	**.019**
Customer's gender (Male=1)	.754	.798	.798	.798	-.102	**-.001**
Customer's race (Caucasian=1)	.648	.702	.707	.707	-.124	**-.010**
Previous customer (Yes=1)	.223	.202	.222	.222	.001	**-.048**
Price goal (Yes=1)	.684	.702	.697	.697	-.027	**.012**
Week of the month	-.035	-.683	.107	.107	-.015	**-.085**
End of month (Yes=1)	.226	.250	.242	.242	-.039	**.018**
Internet customer (Yes=1)	.409	.357	.333	.333	.153	**.048**
Lease	.186	.155	.121	.121	.166	**.086**
New car purchase	.309	.679	.747	.747	-.947	**-.149**
Used car purchase	.525	.179	.141	.141	.767	**.074**
T_1 = Open negotiation (early disclosure)						
Propensity score	.179	.179	.104	.169	.776	**.107**
Salesperson's negotiation skill	.014	.014	.008	.014	.225	**-.004**
Model inventory	31.867	31.867	25.177	32.882	.284	**-.043**
Customer's age	-2.164	-2.164	.274	-1.214	-.207	**-.081**
Customer's product knowledge	.018	.018	-.002	.146	.016	**-.099**
Number of customers	.029	.029	-.004	.059	.040	**-.037**
Customer's gender (Male=1)	.778	.778	.763	.800	.034	**-.053**
Customer's race (Caucasian=1)	.667	.667	.662	.741	.010	**-.156**
Previous customer (Yes=1)	.178	.178	.228	.165	-.130	**.034**
Price goal (Yes=1)	.578	.578	.701	.635	-.248	**-.115**
Week of the month	.176	.176	-.022	1.736	.022	**-.170**
End of month (Yes=1)	.267	.267	.225	.259	.092	**.018**
Internet customer (Yes=1)	.356	.356	.394	.376	-.080	**-.043**
New car purchase	.689	.689	.383	.659	.653	**.064**
Used car purchase	.178	.178	.462	.153	-.735	**.064**
T_2 = Late disclosure						
Propensity score	.267	.267	.114	.248	1.143	**.148**
Salesperson's negotiation skill	.007	.007	.009	.009	-.091	**-.117**
Model inventory	34.685	34.685	24.564	35.011	.481	**-.015**

Customer's age	1.387	1.387	-.217	.136	.107	**.083**
Customer's product knowledge	.375	.375	-.059	.224	.516	**.180**
Number of customers	-.020	-.020	.003	-.052	-.024	**.035**
Customer's gender (Male=1)	.815	.815	.757	.774	.147	**.104**
Customer's race (Caucasian=1)	.741	.741	.650	.645	.204	**.216**
Previous customer (Yes=1)	.259	.259	.217	.258	.096	**.003**
Price goal (Yes=1)	.796	.796	.671	.763	.309	**.081**
Week of the month	.050	.050	-.008	-1.038	.005	**.098**
End of month (Yes=1)	.222	.222	.231	.258	-.021	**-.085**
Internet customer (Yes=1)	.315	.315	.402	.312	-.185	**.006**
Lease	.093	.093	.182	.075	-.306	**.059**
New car purchase	.796	.796	.358	.796	1.077	**.001**
Used car purchase	.111	.111	.480	.129	-1.162	**-.056**

*Notes: 1) continuous variables were centered prior to matching; 2) All covariates meet the criteria for a precise match, which is a post-matching standardized mean difference (last column) with an absolute value of less than .25 (Guo and Frazer 2015).

Figure W1 – Graphic depiction of matching results for T_0=undisclosed



Panel A) standardized differences pre/post matching

Panel B) covariate balance pre/post matching

Additional Tables

Table W3 – The Results of the First Stage of the Selection Model

DV: Negotiation strategy *(reference group: Undisclosed invoice)*		
Open negotiation (disclosed at the beginning)	Coeff.	S.E.
Intercept	-2.71***	(.75)
Salesperson's negotiation skill	17.38**	(10.72)
Inventory of the model	.01	(.01)
Previous customer (Yes=1)	-.12	(.45)
Price goal (Yes=1)	-.32	(.37)
Age	-.03**	(.01)
New	1.37***	(.51)
Used	-.48	(.62)
Internet	.01	(.36)
Customer's product knowledge	.02	(.15)
Number of buyers	.05	(.22)
Gender (Male=1)	.02	(.43)
Race (White=1)	.02	(.38)
Week of the month	.01	(.02)
End of the month (Yes=1)	.40	(.40)
Late disclosure		
Intercept	-3.72***	(.81)
Salesperson's negotiation skill	-10.78	(9.15)
Inventory of the model	.01*	(.007)
Previous customer (Yes=1)	.12	(.39)
Price goal (Yes=1)	.89**	(.41)
Age	-.01	(.01)
New	1.45***	(.54)
Used	-.95*	(.69)
Internet	-.18	(.37)
Customer's product knowledge	.24**	(.15)
Number of buyers	-.05	(.20)
Gender (Male=1)	.51	(.43)
Race (White=1)	.24	(.39)
Week of the month	.00	(.02)
End of the month (Yes=1)	.15	(.40)
log-likelihood	-247.61	

*p<.1; **p < .05; ***p < .01.

Table W4 – The Impact of Invoice Disclosure on the **Frontend** (Study 1)

DV: *Frontend gross profits*	Coeff.	S.E.
Intercept	-2184.53	(2907.19)
Open negotiation	42.06	(523.88)
Late disclosure (of the invoice price)	-834.17*	(444.78)
New	1721.25	(1302.19)
Used	256.17	(819.05)
Internet customer	-683.53*	(346.95)
Number of buyers	-261.69*	(157.17)
Customer age	-19.01	(17.67)
Male customer	362.14	(455.13)
Caucasian customer	764.37**	(311.97)
Week sold	-24.95*	(15.48)
End of month	-194.19	(313.15)
Open negotiation × Internet customer	-813.51	(715.44)
Late disclosure × Internet customer	151.15	(742.11)
Customer front-end knowledge	159.67	(191.75)
Customer stated price goal	554.65	(688.73)
Car-type fixed effects		Included
$Lambda_1$	-642.11*	(314.07)
$Lambda_2$	1009.74	(799.74)
Adj. R^2	.51	

*p<.05, **p<.01. Notes: Undisclosed invoice is the baseline. $Lambda_i$ are the inverse Mills ratios.

Table W5 – The Impact of Invoice Disclosure on the **Frontend** (Study 2)

DV: *Frontend gross profits*	Coeff.	S.E.
Intercept	28.71**	(1.45)
Open negotiation	-1.67	(2.05)
Late disclosure	-11.19**	(2.05)
Internet	-10.1**	(1.67)
Open negotiation × Internet customer	-1.9	(2.37)
Late disclosure × Internet customer	-.38	(2.37)
Informed (Yes=1)	2.3	(1.67)
Open negotiation × Informed	-2.4	(2.37)
Late disclosure × Informed	-.15	(2.37)
Adj. R^2	.31	

*p<.05, **p<.01. Notes: Undisclosed invoice is the baseline. $F(8, 471)=28.32$**.

Table W6 – Study 2&3 Measures

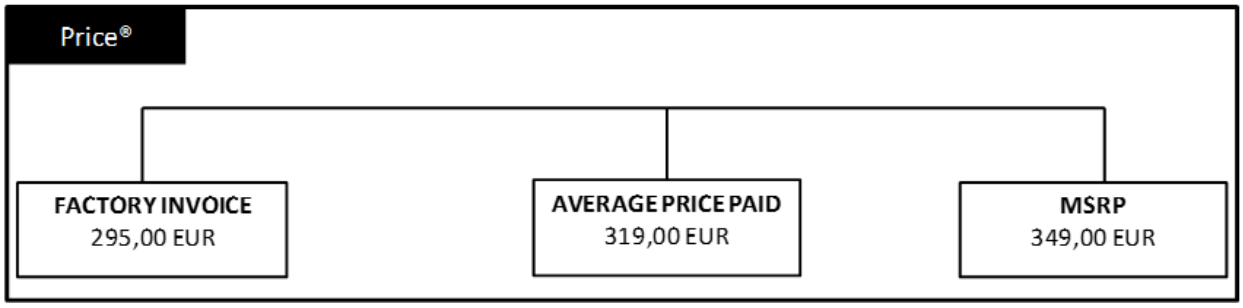
Constructs/Measures*	***Cronbach's alpha***	
	Study 2	Study 3
Trust to the salesperson (Young and Albaum 2003)	.87	.88
I trusted this salesperson.		
This salesperson behaved in a trustworthy manner towards me.		
I had confidence in the accuracy of the information I got from this salesperson.		
Trust to the selling company (Young and Albaum 2003)	.88	.90
I trusted the [company name] company.		
[Company name] behaved in a trustworthy manner towards me.		
I had confidence in the accuracy of the information I got from [company name].		

*All items were rated on a seven-point Likert scale (1 = "strongly disagree," 7 = "strongly agree").

Manipulation of Information Level in Study 2 & 3

Subjects in the informed condition were told that a third party website provides information on the average price paid as well as invoice price of the selected models. They saw the figures below and read breif explanations of what invoice price, average price paid, and MSRP are.

Study 2:



Study 3:

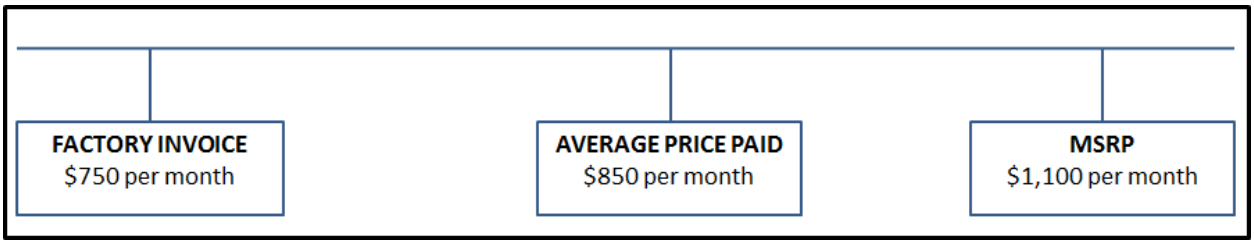
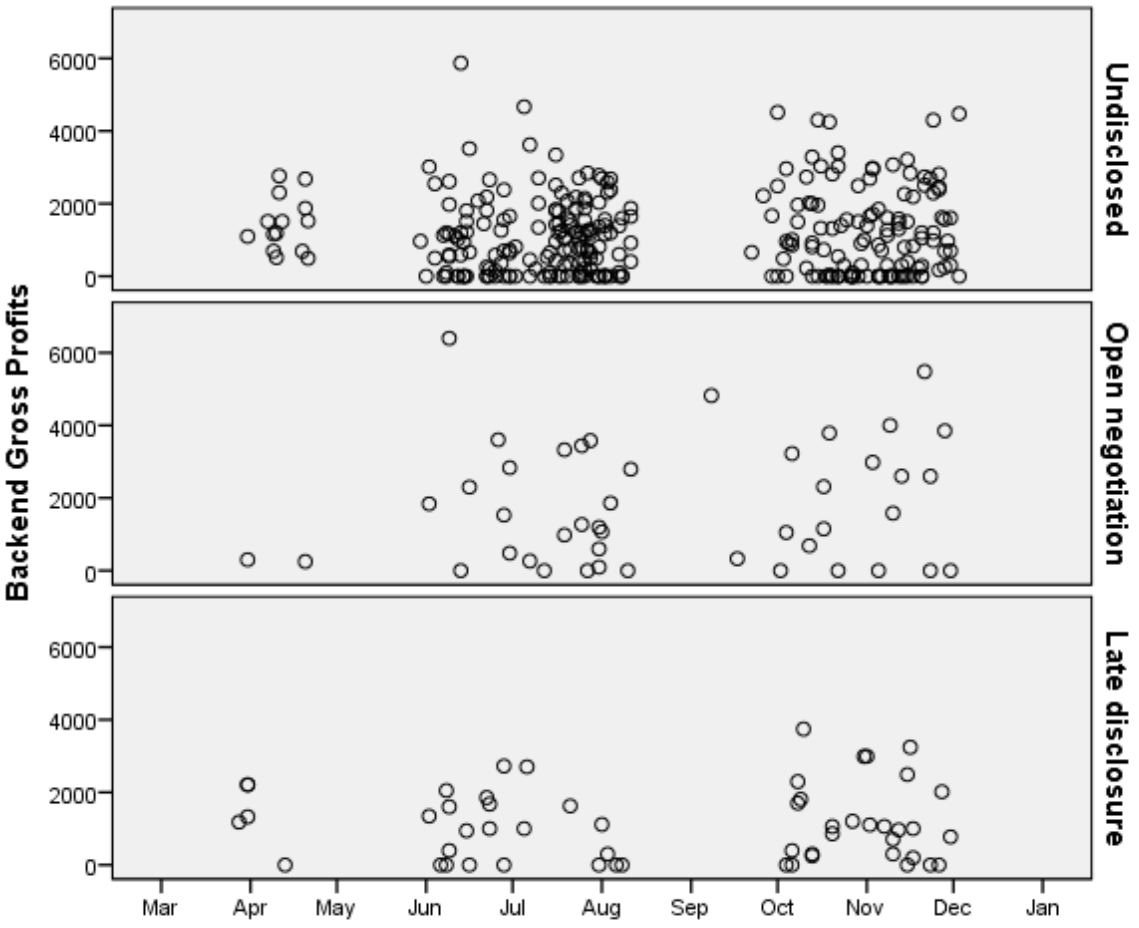


Figure W2 - The distribution of the negotiation strategies over the months of the study



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Footnotes

[1] In one of our additional analyses, we looked at the likelihood of returning for service to the dealership a year after the negotiation. For this analysis, we applied a survival model and used recent developments that allow for including MMWS and IPTW as regression weights in a survival model (Buchanan et al. 2014). However, including Heckman-type selection models in survival analysis is still in its nascent phase and the current recommendations (e.g. Boehmke, Morey, and Shannon 2006) only apply to binary treatments in different types of selection models. Therefore, for this particular model we only addressed selection through propensity-score-based models.

[2] This would essentially measure on average how much higher can a salesperson make the customer pay for the same car sold in the same period.

[3] In both studies, the difference between the frontend gross profits of subjects in the open negotiation condition and those in the undisclosed condition was not significant. Therefore, those in the open negotiation condition did not necessarily have higher remainder of their budget since they hadn't spent significantly less on the frontend than the undisclosed condition. However, those in the late disclosure condition did spend significantly less on the frontend than both open negotiation and undisclosed conditions.

Table 1 – An overview of the negotiation literature

Discipline	Sample papers*	Context	Method	Include timing of negotiation strategies	Study recent changes in information access	Disclosure of explicit information (e.g. cost, invoice price, real quality)?	Information distribution	Aftermarkets studied?
Economics	- Luce & Raiffa (1957) - Walton & McKersie (1965) - Chatterjee & Samuelson (1983)	Labor negotiations	Game theory	No.	No.	No.	Asymmetric	No.
Social psychology	- Pruitt & Lewis (1975) - Pruitt (Pruitt 1981); Brett (2000) - Pruitt & Rubin (1986) - Weingart et al.(1990) - Adair et al.(2004) - Adair & Brett (2005)	-General bargaining -General; culture -Conflict management -Conflict management -Culture -Culture	-Lab experiment -Theoretical -Theoretical -Lab experiment -Lab experiment -Lab experiment	No.	No.	No. Sharing info about priorities/interests	Asymmetric	No.
Management & Decision sciences	-Valley et al. (1998) -McGinn et al. (2003)	-General bargaining	-Lab experiment	No.	No.	No. General communication	Asymmetric	No.
Marketing	- Neslin & Greenhalgh (1983) - Evans & Beltramini (1987) - Ganesan (1993) - Srivastava et al. (2000) - Banks,Hutchinson,&Meyer(2002) - Srivastava & Chakravarti (2009) - Wieseke et al. (2014) - Blanchard et al. (2016)	-General -Consumer bargaining -Channel management -Channel management -Channel management -Channel management -Buyer-seller -Consumer shopping	-Game theory -Theoretical -Survey research -Lab experiment -Game theory -Lab experiment -Survey research + lab -Lab experiment	No.	No.	No.	Asymmetric	No.
-Marketing -Economics	- Zettelmeyer et al. (2006) - Tadelis&Zettelmeyer (2015)	-Automotive -Auctions	-Secondary data -Field experiment	No.	-Yes. -No.	-No. -Yes (quality).	Asymmetric	No.
Marketing	**Current study**	**Salesperson-customer negotiations**	**Natural experiment (real field negotiations) + lab experiments**	**Yes.**	**Yes.**	**Yes.**	**Symmetric in the frontend + Asymmetric in the backend**	**Yes.**

*For brevity, papers that were similar to the already cited papers in each category are excluded.

Table 2 – Sample Characteristics (Study 1)

Criterion	Characteristics	Characteristic
Participants	N	400 customers
Customer gender	Male [%]	76.5%
	Female [%]	23.5%
Customer age	Mean [years]	44.52
	Standard deviation	13.48
Customer ethnicity	Caucasian [%]	66.25%
	Other [%]	33.75%
Invoice disclosure	Open negotiation [%]	11.25%
	Late disclosure [%]	13.50%
	No disclosure [%]	75.25%
Channel type	Online [%]	39.00%
	Face-to-face [%]	61.00%

Table 3 – Inter-correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 BGR	1.00																			
2 SERV	.11*	1.00																		
3 OPEN	.17*	.11*	1.00																	
4 LATE	-.03	.00	-.14*	1.00																
5 INT	-.15*	-.19*	-.03	-.06	1.00															
6 NEW	.04	.17*	.20*	.30*	-.09	1.00														
7 USED	-.17*	-.20*	-.18*	-.25*	.20*	-.74*	1.00													
8 C_NUM	.04	.00	.01	.01	-.06	.03	.04	1.00												
9 AGE	-.23*	.12*	-.06	.04	-.13*	.18*	-.10	.07	1.00											
10 WHI	-.09	.08	.00	.07	.03	.15*	-.12*	-.08	.25*	1.00										
11 MALE	-.02	-.12*	.01	.05	.01	.01	-.03	-.13*	.00	.00	1.00									
12 WEEK	.04	-.18*	.01	.00	-.04	-.04	.06	-.05	-.14*	-.04	.30*	1.00								
13 EMO	-.06	.03	.03	-.01	.01	-.07	.05	.00	-.06	-.11*	.02	-.02	1.00							
14 B_K	.12*	-.01	-.01	.02	.00	-.03	-.06	-.01	-.09	.10*	-.05	-.01	.04	1.00						
15 B_P	.35*	-.03	-.04	.08	.08	.14*	-.04	.05	-.10	.00	-.05	-.03	.07	.25*	1.00					
16 PRE	-.04	.04	.02	.03	-.02	-.03	.05	-.05	.00	.03	-.07	-.06	-.02	.14*	.04	1.00				
17 DIST	.01	.13*	.02	.02	-.04	.05	-.05	.00	.03	.09	-.10*	-.06	-.06	-.10	.01	-.07	1.00			
18 CL	-.05	.14*	.00	.03	-.11*	.02	-.06	-.08	.08	.04	.08	.04	.03	.03	.00	.09	-.31*	1.00		
19 UND	-.10*	-.08	-.62*	-.69*	.07	-.38*	.33*	.00	.01	-.05	-.04	-.02	-.01	-.01	-.05	.00	-.03	-.02	1.00	
20 LEAS	.15*	.04	-.01	-.08	-.12*	-.33*	-.34*	-.11*	-.12*	-.01	.02	-.03	-.01	.15*	-.11*	.01	.00	.05	.07	1.00
Mean	1211.6	.37	.11	.14	.39	.42	.43	1.48	44.52	.66	.77	34.16	.23	4.69	.70	.22	18.42	.39	.75	.17
SD	1183.8	.48	.32	.34	.49	.49	.50	.81	13.48	.47	.42	9.53	.42	1.52	.23	.42	30.46	.49	.43	.38

*$p < .05$.Notes: BGR=backend gross profits, SERV=binary variable with 1 if the customer came back for service, OPEN=invoice disclosure in the beginning (open negotiation), LATE=invoice disclosure late, INT=internet customer, NEW=new car, USED=used car, C_NUM= number of buyers, AGE= age, WHI=if the customer was white/caucasian, MALE=if the customer was male, WEEK=week sold, EMO=end of month, B_K=rating of customer knowledge, B_P=what percentage of backend items were presented to customer, PRE=previous customer, CL=whether the dealership was close (less than 15 miles) to the customer, DIST=distance customer travelled to dealership, UND=undisclosed, LEAS= lease.

Table 4 – The Impact of Invoice Disclosure on Seller's Backend Gross Profits

DV: Backend gross profits	*Model 1 (OLS)*		*Model 2 (MMWS)*		*Model 3 (IPTW)*		*Model 4 (selection)*		*Model 5 (selection +car fixed effects)*		
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	
Intercept	674.37**	(237.87)	741.34**	(239.36)	750.25**	(245.34)	500.68	(490.21)	156.79	(759.26)	
Open negotiation	**759.83****	**(206.14)**	**833.74****	**(207.21)**	**871.37****	**(208.73)**	**761.53****	**(305.62)**	**701.75***	**(310.00)**	**H1(✓)**
Late disclosure of the invoice price	-192.18	(194.37)	-257.53	(192.03)	-70.84	(202.26)	-187.22	(181.70)	-197.70	(181.01)	
Open negotiation × Internet	**-699.28***	**(345.09)**	**-868.45****	(331.10)	**-995.58****	**(340.49)**	**-779.95***	**(409.27)**	**-741.54***	**(415.67)**	**H4(✓)**
Late disclosure × Internet	190.06	(328.17)	528.92	**(324.57)**	609.66	(363.12)	222.63	(286.63)	233.66	(289.27)	
Controls:											
New	-551.48**	(163.01)	-471.405**	(155.33)	-540. 79**	(161.96)	-678.17*	(291.68)	-556.70*	(299.53)	
Used	-716.47**	(157.44)	-607.21**	(155.06)	-647.08**	(159.13)	-802.10**	(160.13)	-658.94**	(183.20)	
Internet customer	-328.58**	(122.32)	-407.64**	(120.93)	-377.45**	(121.46)	-314.93**	(114.96)	-283.92**	(119.39)	
Number of buyers	58.07	(64.58)	78.19	(66.34)	71.70	(67.49)	30.00	(60.90)	29.31	(62.39)	
Customer's age	-10.60*	(4.61)	-11.58**	(4.56)	-12.27**	(4.59)	-7.02	(4.66)	-9.73*	(5.09)	
Male customer	-8.91	(127.4)	-40.23	(124.62)	-161.43	(126.63)	48.09	(137.17)	52.23	(144.47)	
Caucasian customer	-111.98	(113.93)	-175.38	(111.23)	-85.37	(113.70)	-77.84	(107.45)	-87.42	(116.48)	
Week sold	2.60	(5.70)	.38	(5.57)	1.82	(5.61)	1.62	(5.86)	1.12	(6.09)	
End of month	-297.86*	(123.22)	-258. 69*	(118.69)	-230.77*	(118.18)	-342.07**	(115.23)	-323.92**	(121.60)	
Customer's back-end knowledge	22.87	(42.39)	23.02	(42.16)	-78	(43.011)	23.99	(32.49)	43.77	(33.76)	
% of backend products offered	1874.7**	(242.87)	1799.212**	(245.8)	1864.52**	(250.12)	1982.16**	(230.02)	2130.98**	(259.77)	
Open negotiation × customer's age	-36.84**	(14.25)	-21.74	(14.62)	-8.99	(15.78)	-28.39*	(17.40)	-30.99*	(17.37)	
Late disclosure × customer's age	-14.06	(10.61)	-17.23	(10.93)	-16.21	(12.23)	-10.56	(9.67)	-11.54	(9.58)	
Car-type fixed effects									Included		
$Lambda_1$			-		-		-164.63**	(51.89)	-151.55**	(56.92)	
$Lambda_2$			-		-		-427.27*	(225.68)	-331.44	(234.75)	
(Adj.) R^2	.27		.26		.26		.31		.36		

*p<.05, **p<.01. Notes: Undisclosed invoice is the baseline. $Lambda_i$ are the inverse Mills ratios.

Table 5 – The Impact of Invoice Disclosure on Future Service

Model: Weighted Cox proportional hazard	*Model 1 (Cox)*		*Model 2 (Cox+MMWS)*		*Model 3 (Cox+IPTW)*		
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	
Open negotiation	**.73****	**(.27)**	**1.04****	**(.26)**	**1.01****	**(.25)**	**H1(✓)**
Late disclosure of the invoice price	-.04	(.28)	.25	(.28)	.06	(.28)	
Open negotiation × Internet customer	-.92	(.59)	**-1.09***	**(.56)**	**-1.27***	**(.61)**	**H4(✓)**
Late disclosure × Internet customer	-.07	(.66)	.07	(.54)	-1.3	(.74)	
New	.25	(.24)	.15	(.23)	.15	(.24)	
Used	-.28	(.26)	-.24	(.26)	-.21	(.26)	
Internet customer	-.37	(.22)	-.44*	(.22)	-.43*	(.22)	
Customer age	.01	(.006)	.01*	(.006)	.01*	(.006)	
Male customer	-.08	(.18)	-.19	(.18)	-.14	(.18)	
Caucasian customer	.08	(.19)	.003	(.19)	.007	(.19)	
Previous customer	.17	(.20)	.12	(.19)	.24	(.18)	
Customer distance to dealership	.002	(.003)	.003	(.002)	.002	(.002)	
Closest dealership for customer	.47**	(.19)	.57**	(.19)	.46**	(.19)	
-2 log-likelihood	1549.52		1573.64		1593.062		

*p<.05, **p<.01. Notes: Undisclosed invoice is the baseline.

Figure 1 – Theoretical Framework and Overview of Studies

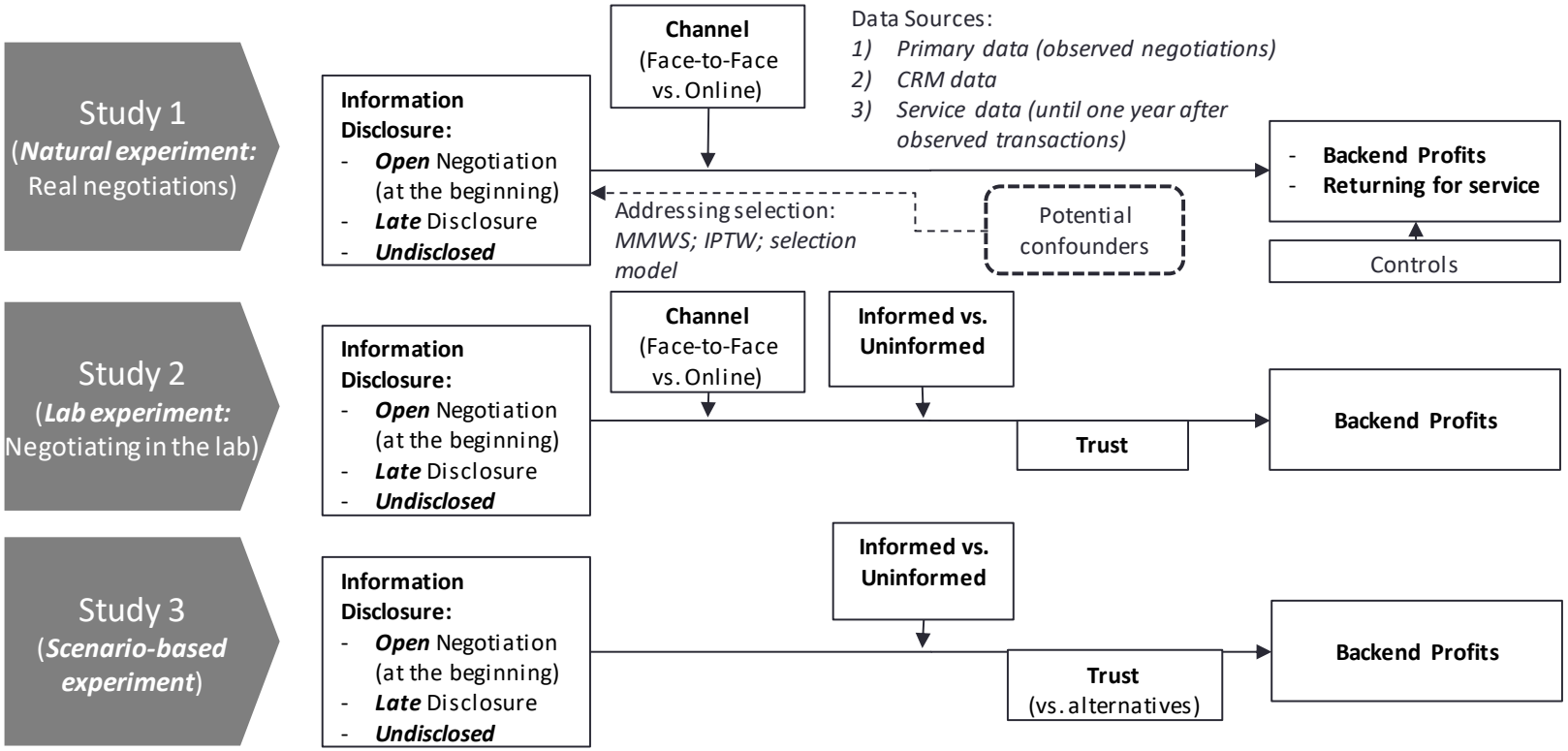

Figure 2 - Sample search result from Edmunds.com

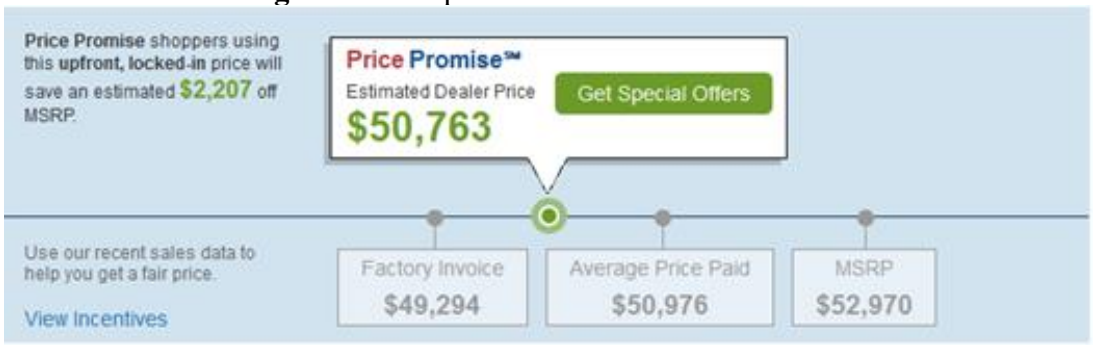

Figure 3 – The Impact of Invoice Price Disclosure on Back-End Gross Profits (Study 1)

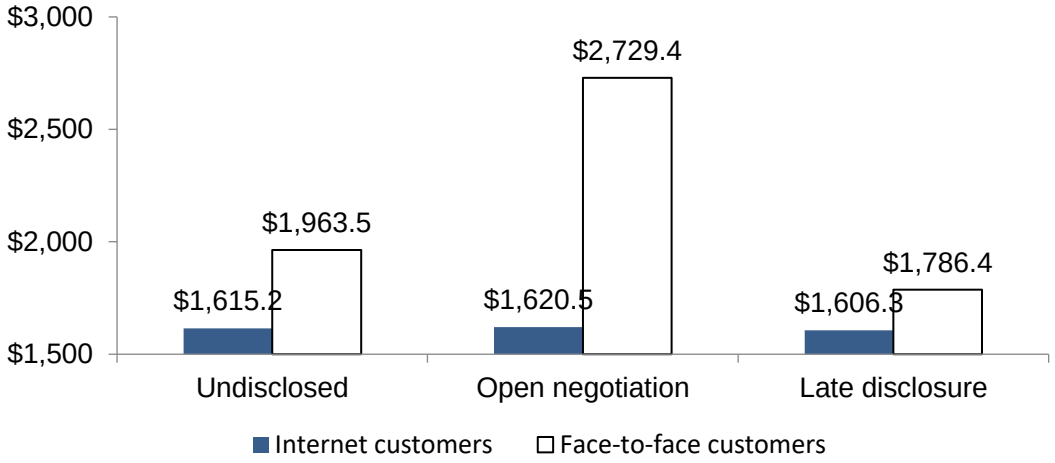
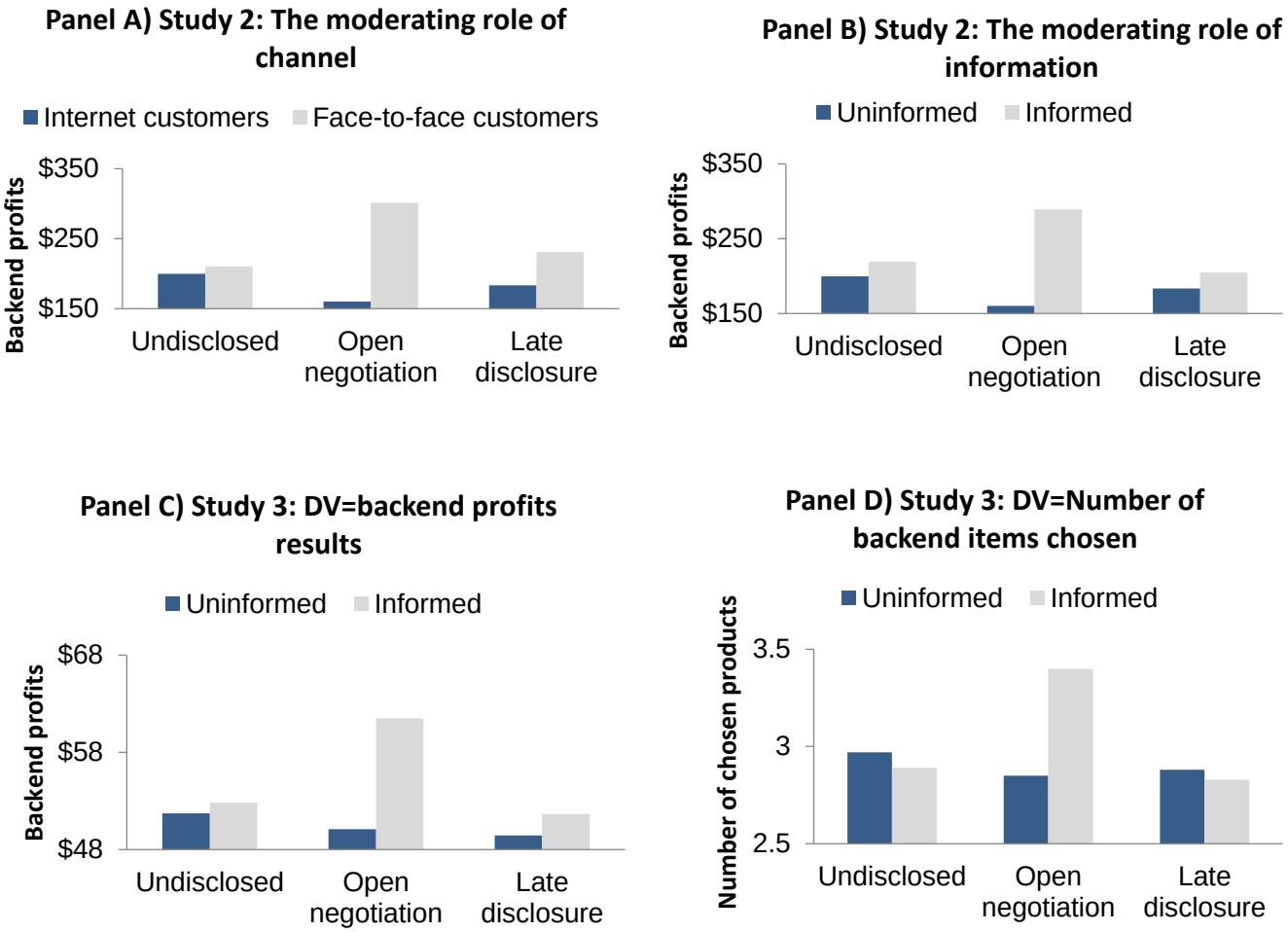
Figure 4 – The Impact of Invoice Price Disclosure on Back-End Gross Profits (Study 2&3)