Can Trade-Ins Hurt You?

Exploring the Effect of a Trade-In on Consumers’ Willingness to Pay for a New Product

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When a consumer decides to upgrade to a new or better product, she often trades in her currently owned or used product for the new one. The authors examine whether such trade-in behavior, where the consumer must negotiate the price for both the new and used product, affects her willingness-to-pay price for the new good. Based on research on mental accounting, the authors reason that when a consumer engages in a transaction involving a trade-in, i.e., acts as both buyer and seller simultaneously, she places more importance on getting a good value for her used product than a good price for the new product. As a result, she will exhibit a higher willingness-to-pay price for the new product compared to consumers who just buy the new product alone. Results from a series of laboratory experiments provide systematic support for the above hypothesis. Finally, the authors lend external validity to their results by confirming the hypothesis using real world transaction data from the automobile market.

**Keywords:** Trade-ins, mental accounting, automobile market
Consumers commonly engage in replacement purchases, where they replace an existing product with a new, usually better and upgraded, product. In such situations, the existing or used product is often exchanged or traded in towards a reduction in the price of the new good. While these types of purchases are most commonly observed for automobiles, where roughly 57% of all new car sales involve a trade-in (NADA Public Affairs 2001), such transactions also occur for a variety of other products, such as musical instruments, sporting goods, jewelry and appliances.

A distinctive feature of many of these large ticket transactions is that consumers must negotiate the price of the good. Thus, transactions that involve a trade-in require the consumer to negotiate two prices, one for the new product and another one for her existing product. This raises the question of whether the existence of the trade-in transaction creates any advantages or disadvantages for the consumer. For example, will the new product’s price differ depending on whether there is a trade-in or not? Are consumers better off trading in their used product toward the purchase of the new one from the same retailer or should they keep the two transactions separate by dealing with different retailers? This paper sheds light on these questions.

Anecdotal evidence from the automobile market, for example, suggests that dealers gain from the presence of the trade-in, possibly at the cost of consumers’ welfare. This notion is supported by many industry and consumer reports such as one which states that “Car dealers have a bad habit of giving you more for your trade-in than they actually are. They do this by artificially inflating the price of the car you’re purchasing and then artificially inflating the trade-in allowance.” (www.InsiderCarSecrets.com). Thus, a number of car buying guides such as www.edmunds.com and www.autotrader.com, advise consumers to keep the two transactions separate. Similar suggestions have also been forwarded by public policy makers who state that “…Consumers should not discuss the trade-in of their vehicle until after the purchase price of the
new car is finalized. It is extremely important to keep the trade-in out of the new car purchase negotiation.” (Lisa Madigan, Attorney General of Illinois). Similar incidents are prevalent in other markets (e.g., musical instruments) as well (e.g., Fine 2002).

While these examples suggest that the presence of a trade-in transaction during the new product negotiation process has an impact on the bargaining outcome, very little research has studied the association between such related transactions. Instead, the extant literature focuses primarily on situations where consumers act either as buyers or as sellers (e.g., Carmon and Ariely 2000), but not both. We therefore seek to extend this line of research by studying situations where a consumer acts simultaneously as a buyer and a seller by engaging in these two transactions with a single retailer, thereafter referred to as a “trade-in” consumer and comparing them to situations where a consumer acts either as a buyer or a seller, but not both.

We reason that when a consumer engages in a trade-in, due to mental accounting implications (Thaler 1980, 1985), she is likely to perceive the trade-in value of the currently owned product as highly important, and thus spend a considerable amount of resources on negotiating its price. Because individuals have limited resources at a given time, more resources allocated to the more important task would result in fewer resources available to respond to a less important task (Einstein and McDaniel 1987; Zhu and Meyers-Levy 2005). This implies that a trade-in consumer will have few resources left in negotiating the purchase price of the new good and should thus be more tolerant of a high purchase price. Based on these arguments, we expect that while a trade-in consumer and a seller alone (i.e., someone who is only selling her current product) should exhibit comparable levels of willingness-to-accept price for their current product, a trade-in consumer should reveal a higher willingness-to-pay price for the new product.
than a consumer who is only buying the new product. This effect should disappear, however, when trade-in consumers regard the used product transaction to be of low importance.

We test and find strong support for the above hypotheses through a series of lab experiments. We also validate these results using real world field data from the automobile market. Thus, this research makes several important contributions. First and foremost, it contributes to the trade-in literature by suggesting that trade-ins not only affect consumers’ likelihood to make a replacement decisions (Okada 2001, 2007), but also their willingness-to-pay for the new product. We provide process measures to explain why trade-in consumers often end up paying more for the new product compared to those who are only buying the new product. Second, this research adds to the buyer-seller differences literature by investigating situations where consumers act as both sellers and buyers simultaneously and arguing that such trade-in consumers tend to place heightened importance on the trade-in value of their used product, and therefore expect to pay more for the new product compared to buyers alone. Finally, this research offers important public policy implications. We were able to show that when consumers were explicitly told to treat the trade-in and new product purchase as two separate transactions, they expected comparable willingness-to-pay prices as buyers alone.

**THEORETICAL BACKGROUND**

Our central thesis is that trade-in consumers tend to perceive the trade-in value of their used product to be highly important and therefore spend considerable amount of resources on negotiating the trade-in price. Consequently, these consumers are left with few resources to focus
on the new product transaction and are therefore more tolerant of a higher price for the new product. Research on mental accounting and resource allocation offers support to our arguments.

According to mental accounting principles, consumers keep a mental account of the costs and benefits associated with a transaction (Gourville and Soman 1998; Thaler 1985, 1999). A consumer opens a mental account when she purchases a product (e.g., a vehicle). The cost of the product is recorded as a negative entry into the account. The benefits that the consumer derives from consuming the product are recorded as benefits or positive entries in the same account. When the consumer sells the product, it effectively closes the mental account associated with the product. The selling price essentially determines whether the account is closed at a gain or loss, i.e., in black or red, (Prelec and Loewenstein 1998). Given that closing an account (not opening an account) is when people get a final feedback in terms of how well they have managed it, closing an account should be perceived as more important than opening one (Prelec and Loewenstein 1998; Soman 2001; Soman and Gourville 2001).

A number of studies have shown that closing an account at a loss is painful and thus consumers try their best to avoid it. For example, Odean (1998) tracked investors’ behaviors in the stock market and observed that they were more likely to sell stocks that had increased in value (i.e., closing at a gain) than stocks that had decreased in value (i.e., closing at a loss). As another example, (Okada 2001, 2007) suggests that one of key factors that hinders consumers from upgrading their products is the psychological cost associated with closing the existing product account in the red.

Because closing an account is more important than opening one, and because consumers try to avoid the painful cost associated with closing an account at a loss, such mental accounting implications suggest that trade-in consumers should place heightened importance on the trade-in
value of their used product, probably even more so than the purchase price of the new product. This is because the trade-in value indicates the closing amount of the existing mental account, and therefore ultimately determines whether the used product account is closed in the red or black. In contrast, the purchase price for the new product indicates the opening amount of a new mental account. Because there are still many other factors, such as benefits associated with the new product and the future resale price of the product, that will affect the overall performance of the new account, the opening amount is not weighted as much as the closing amount.

Extensive research suggests that task importance is a critical determinant of effortful processing (Brewer 1998; Fiske and Neuberg 1990; Petty and Cacioppo 1986). When tasks are perceived to be more important, people spend considerable amount of attention and effort on it, and exhibit better performance (Andrzejewski, Moore and Corvette 1999; Chaiken, Liberman and Eagly 1989). Furthermore, because individuals have limited resources at a given time, as the importance of one task increases thus demanding more resources, the resources left for other tasks will decrease (Kliegel et al. 2001; Zhu and Meyers-Levy 2005). In a trade-in context, we argue that, due to the above discussed mental accounting implications, consumers will perceive the trade-in transaction involving their used product to be highly important. Thus, they are likely to devote their resources primarily to negotiating the best possible price of their used product. As a result, these trade-in consumers would have few resources left for the new product transaction.

In contrast, individuals who are involved in a single transaction have only one task to focus on and are simply looking for the best deal possible. Buyers alone, for example, would focus exclusively on the opening amount of the new product mental account and try to minimize the “red” as much as possible. Thus, compared to buyers alone, trade-in consumers are expected to perceive the new product transaction as less important and therefore exhibit a higher willingness-
to-pay price for the new product, due to their emphasis on getting a good closing amount (i.e., trade-in value) for the existing product account. On the other hand, we expect trade-in consumers to exhibit comparable willingness-to-accept prices for their used product as those who act as sellers alone, because for both, the willingness-to-accept prices indicate the closing amounts for their existing products mental accounts and should be perceived as equally important.

Indirect support for our theorizing also comes from research on how consumers process partitioned prices (Hossain and Morgan 2006; Morowitz, Greenleaf and Johnson 1998). Firms often divide the price they charge consumers into two parts, such as the base price for the item itself and a charge for shipping and handling. According to Yadav (1994), people usually anchor on the piece of information they perceive as most important and then adjust this for other less important information. Thus, it seems reasonable that consumers may pay more attention to the base price and then probably adjust insufficiently for the surcharges. This is probably because people usually perceive the base price as more important, as the base price is usually higher than the surcharges, although not necessarily so in all situations. Consistent with this idea, Hossain and Morgan (2006) (also see Stross 2006) find that on eBay, bidders happily accepted outrageously high shipping charges if they thought they were getting a really good deal on the auctioned item. This happened presumably because bidders cared more about the item and its base price than the surcharges and were therefore willing to accept the high surcharges. Coming back to our context, the above research implies that trade-in consumers should focus more on the used product trade-in value versus the new product purchase price because they are likely to consider the used product transaction as more important (due to mental accounting implications). Thus, they should be more willing to accept a higher purchase price for the new product compared to those who are simply buying the product alone.
Based on the above theorizing, we forward the following formal hypotheses:

H1a: Trade-in consumers will exhibit comparable levels of willingness-to-accept prices toward their used product as those who are only selling their used product.

H1b: Trade-in consumers will exhibit a higher willingness-to-pay price toward the new product compared to those who are only buying the new product.

H2: Perceived importance toward the new product transaction mediates the effect hypothesized in H1b.

In addition, an inference from our theorizing suggests that if the final outcome (i.e., the price paid to get the new product after accounting for the trade-in value) is fixed, trade-in consumers should feel happier when they gain on the used but lose on the new product than vice versa.

H3: When controlling for the net outcome, trade-in consumers should feel happier when they gain on the used product but lose on the new product than vice versa.

Next, we describe five lab studies conducted to test the above hypotheses. Specifically, experiment 1 tests H1a, H1b, and H2. Experiment 2 further investigates the underlying mechanism (H2) by explicitly manipulating the importance of the trade-in, and at the same time controls individuals’ income level. Experiment 3 aims to test H3. Experiment 4 and 5 extends on the previous studies by investigating whether dealers and consumers have the same perspective in a trade-in context, and whether trade-in consumers can take certain actions to avoid paying high price for the new product. Finally, we use real world transaction data from the automobile market to provide more compelling support to our theory.

EXPERIMENT 1
This experiment tests H1a, H1b, and H2. Specifically, participants imagined they were either only buying, selling, or trading-in a car, and estimated the price they would be willing to pay for the new vehicle and/or the price they would be willing to accept for the used one. In addition, to test H2, we took measures that assessed participants’ importance rating of their involved transaction(s).

Method

Forty-three undergraduate students participated in this study in exchange for course credit. They completed a survey in small groups of no more than five people. Participants were randomly assigned to one of three conditions, each representing the selling alone, buying alone, or trade-in situation.

Participants in the selling alone condition imagined that Jack was thinking of selling his used car to a local dealer. Detailed information about the used car was included. Upon imagining the above scenario, participants were first asked to estimate the lowest price that they think Jack would be willing to accept from the dealer. Next, to assess the perceived importance of this used car transaction, participants were asked to indicate (1) how important it is for Jack to get a good price for his used car (1: not at all important; 7: very important), and (2) how much effort Jack would spend on negotiating his used car trade-in price (1: A little bit of effort; 7: a great deal of effort). These two items were combined to form a used car importance index ($r = .54$, $p < .01$). The study ended with some demographic questions.

In the buying alone condition, participants imagined that Jack was thinking of buying a brand new car from a local dealer. The scenario provided detailed information about the new car. After
imagining the scenario, participants were asked to first estimate the highest price that they think
Jack would be willing to pay. Next, to assess the perceived importance of this new car
transaction, they were asked to indicate (1) how important it is for Jack to get a good price for his
new car (1: not at all important; 7: very important), and (2) how much effort Jack would spend
on negotiating his new car purchase price (1: A little bit of effort; 7: a great deal of effort). These
two items were combined to create a new car importance index ($r = .83, p< .001$).

Participants in the trade-in condition were asked to read a scenario where they were told to
imagine Jack buying a new vehicle from, and at the same time trading-in his used car to, the
same local dealer. All the information provided was identical to the previously-described two
conditions, but the new car and used car information were presented simultaneously (see
appendix A for details). Participants were reminded that Jack was likely to bargain with the
dealer over both prices, but his goal was to maximize the total gain from these two transactions.
Upon finishing reading the scenario, participants were asked to estimate (1) the lowest price that
Jack would be willing to accept for his used car, and (2) the highest price that Jack would be
willing to pay for his new car. Finally, participants were asked to rate on the two sets of
importance questions regarding both the used car transaction and the new car transaction, as
described earlier.

Results

To test H1a, we compared the willingness-to-accept prices for the used vehicles produced by
participants in the trade-in versus the selling alone condition. To test H1b, we compared the
willingness-to-pay prices for the new vehicle produced by those in the trade-in versus the buying
alone condition. All the prices were subject to a log transformation. In addition, we compared participants’ importance ratings regarding the used car transaction between those in the trade-in and those in the selling alone condition, and the importance ratings regarding the new car transaction between those in the trade-in and those in buying alone condition. A one-way ANOVA (condition: trade-in vs. selling alone/buying alone) was used for the above analyses.

As predicted by H1a, there was no treatment effect on willingness-to-accept prices for the used vehicle (F <1). Specifically, individuals in the trade-in (M = $7,335.20) as well as in the selling alone (M = $6,829.21) conditions estimated comparable levels of willingness-to-accept price for their used vehicles. The anticipated treatment effect emerged on the willingness-to-pay prices for the new vehicle (F(1, 27) = 4.93, p < .04). As predicted by H1b, participants in the trade-in condition expected to pay more for the new vehicle (M = 29,716.67) than those in the buying alone condition (M = $27,382.14).

To test our proposed process mechanism (H2), we analyzed participants’ importance ratings regarding the used and/or new car transactions. As expected, we found that those in the trade-in and selling alone conditions perceived the used car transaction as equally important (M\text{trade-in} = 5.73, M\text{sell} = 5.32; F(1, 27) = 1.46, p > .23). Yet, those in the trade-in versus buying alone condition perceived the new car transaction as less important (M\text{trade-in} = 4.40, M\text{buy} = 5.68; F(1, 27) = 7.28, p < .02). Furthermore, a Paired Sample T Test within the trade-in condition revealed that trade-in participants perceived the used car transaction to be more important than the new car transaction (t(14) = -3.37, p < .01). In particular, 12 out of 15 trade-in participants gave higher importance rating to the used versus new product transaction.

Mediation analyses were conducted to assess whether perceived importance of the new car transaction mediated the effect of condition (trade-in vs. buy alone) on willingness-to-pay prices
(Baron and Kenney 1986). Results confirmed our theorizing. Specifically, the condition factor affected the willingness-to-pay prices for the new vehicle \( b = -.04, p < .04 \), and it influenced importance ratings regarding the new car transaction \( b = 1.28, p < .02 \). However, the effect of condition on willingness-to-pay prices was mediated by perceived importance of the new car transaction \( b_{\text{condition}} = -.01, p = .47; b_{\text{importance}} = -.02, p < .01; \text{Sobel: } Z = -2.10, p < .05 \).

Discussion

Experiment 1 provides empirical support for H1 and H2. Specifically, it shows that, presumably due to mental accounting principles, participants in the trade-in and selling alone conditions perceived the used car transaction as equally important, and thus revealed comparable levels of willingness-to-accept prices for the used vehicles. In contrast, those in the trade-in versus buying alone condition perceived the new car transaction as less important, and therefore revealed a much higher willingness-to-pay price for the new vehicle.

Note that to test the generalizability of the observed effects, we also tested our theorizing with a different scenario. Specifically, individuals imagined either selling one’s current house (selling alone condition), buying a new house (buying alone condition), or selling one’s current house and buying a new one (selling & buying condition). These housing scenarios were strategically designed such that the new house participants asked to imagine buying was smaller and cheaper than the current house they own. Still, we observed that those in the selling & buying condition suggested a comparable willingness-to-accept price for the currently owned house as those in the selling alone condition \( F <1 \), but a much higher willingness-to-pay price for the new house than those in the buying alone condition \( p< .01 \).
EXPERIMENT 2

This experiment has two objectives. First, it aims to further test the underlying mechanism for the effects observed in Experiment 1 (i.e., those in the trade-in condition expected to pay more for the new product than those in the buying alone condition). We argue and find support in experiment 1 that perceived importance mediates the observed effect. In this experiment, we further examine this mechanism by explicitly manipulating individuals’ perceived importance toward the trade-in transaction. Specifically, we expect that the observed effect will only emerge if trade-in individuals are explicitly told that their used product trade-in value is of high importance. This is so because in this case, trade-in consumers would focus primarily on getting a good deal on the trade-in value. As such, they are likely to perceive the new product transaction as less important than those in the buying alone condition, and consequently expect to pay more for the new product. However, such an effect should disappear if these individuals are made to believe that their trade-in value is of low importance, because in this case, trade-in consumers would likely to perceive the new product transaction as equally important as buyer alone and thus estimate comparable purchasing prices for the new product.

The second objective of this experiment is to examine a potential alterative explanation for the observed effect, namely the income effect. Specifically, consumers who trade in, compared to buyers alone, have more cash due to the trade-in, and may therefore be willing to pay more for the new product. To test whether such an income effect has caused our effect, we controlled the income level of all participants in this study.
Method

A total of 66 undergraduate students participated in this study. Three treatment conditions were created. Specifically, two conditions involved the same trade-in situation as employed in study 1, except that the importance of the trade-in transaction was manipulated to be either high or low. In the trade-in high importance condition, participants were told that because the used car has served Jack very well and he has many great memories with it, it is extremely important for Jack to get a good value on his used car. In contrast, in the trade-in low importance condition, participants were told that Jack just wants to sell his used car as soon as possible without worrying too much about getting a good deal on his used car. The third condition involved the same buying alone situation as that used in study 1, but in order to control the income effect, individuals in this condition were told that Jack has just sold his used vehicle and plans to use that money toward the purchase of his new car. Specifically, participants in this condition were first presented with the same used car information as those in the trade-in condition, and were asked to estimate the lowest price Jack would be willing to accept. However, the main task for these participants was to estimate the highest willingness-to-pay price for the new car Jack plans to buy. Note that the buying alone condition is different from the two trade-in conditions in that the used car was already sold in the former case. The purpose of including such used car information in the buying alone condition is only to control the income effect, such that people in all conditions presumably have the same amount of money when purchasing the new vehicle.

Similar to experiment 1, participants in the two trade-in conditions were asked to estimate the lowest willingness-to-accept price for the used car and the highest willingness-to-pay price for the new car. Also, they indicated the perceived importance of the two transactions on the same
two questions as employed in study 1 (i.e., importance and effort level). These two items were combined to create a new car importance index \((r = .48, p < .001)\) and a used car importance index \((r = .67, p < .001)\). Those in the buying alone condition estimated the willingness-to-pay price for the new car and indicated the importance ratings for the new car transaction.

**Results**

*Importance Ratings and Manipulation Check.* First, we analyzed participants’ importance ratings regarding the used car transaction. Only those in the two trade-in conditions answered these questions. As expected, those in the trade-in high importance condition perceived the trade-in transaction as more important (i.e., they think getting a good price is more important, and think Jack will spend more effort in negotiating the new car price) than those in the trade-in low importance condition \((M_{\text{high}} = 6.04, M_{\text{low}} = 3.74; F(1, 42) = 41.70, p < .001)\). This confirmed that our importance manipulation was successful. In addition, participants in all conditions answered the two importance questions regarding the new car transaction. Analysis on this measure revealed a significant treatment effect \((F(2, 63) = 7.32, p < .001)\). As anticipated, those in the trade-in high importance condition rated the new car transaction as less important \((M = 5.22)\) than those in the trade-in low importance condition \((M = 6.19; t(63) = -3.70, p < .001)\) as well as those in the buying alone condition \((M = 5.91; t(63) = -2.66, p < .01)\). The difference between the two latter conditions was not significant \((p > .30)\).

*Price Estimates.* All price estimates were log transformed before further analysis. One-way ANOVA on the estimated willingness-to-accept prices for the used car revealed the expected treatment effect \((F(1, 42) = 15.96, p < .001)\), such that trade-in participants estimated a much
higher willingness-to-accept price for their used vehicle when they believed that the used car transaction is of high versus low importance ($M_{\text{high}} = $7,738.96, M_{\text{low}} = $6,342.38$).

More importantly, one-way ANOVA on the expected willingness-to-pay prices for the new car also revealed the anticipated treatment effect ($F(2, 63) = 3.30, p < .05$). Specifically, when trade-in consumers were explicitly told that their trade-in transaction is of high importance, the result replicated that observed in experiment 1; that is, these trade-in participants indicated a much higher willingness-to-pay price for the new car ($M = $29,943.48) than those in the buying alone condition ($M = $28,329.55, t(63) = 2.29, p < .03$). However, also as anticipated, when the trade-in participants were explicitly told that their trade-in transaction is of low importance, they expected to pay a comparable low price ($M = $28,419.05) as those in the buying alone condition ($t(63) = .12, p > .90$). Finally, the willingness-to-pay price estimated by those in the trade-in high importance condition was significantly higher than that suggested by those in the trade-in low importance condition ($t(63) = 2.13, p < .04$).

Discussion

Results from this study provide additional support to our proposed process mechanism. By manipulating the perceived importance of the trade-in transaction, we observed that the predicted effect (i.e., trade-in consumers expect to pay more for the new product than buyers alone) only emerged when people perceive their trade-in transactions as highly important. When the trade-in transaction is deemed as unimportant, such an effect disappears. Thus, perceived importance of the trade-in transaction (and consequently the perceived importance of the new product
transaction) is driving the observed effect. Finally, we replicated study 1 results even after controlling the income level, suggesting that the observed effect is not due to income effect.¹

**EXPERIMENT 3**

This study aims to test H3 by demonstrating that when the final net outcome (i.e., the net price trade-in consumers must pay to get the new product) is fixed, trade-in consumers should feel happier when they gain on the used product while losing on the new one than vice versa.

*Method*

An outcome evaluation task was created for this study. A total of 122 undergraduate students participated in the study, in which they were asked to imagine that two people (person A and person B) have each bought an identical new car, and at the same time, traded in their comparable used car to the same dealer. Participants were next presented with five sets of possible outcomes. Each set detailed the final selling price for the used car and the buying price for the new car for both A and B. They were asked to rate on a 1-7 scale which person is happier (1: A is much happier than B; 4: A and B equally happy; and 7: B is much happier than A). To test H3, we designed outcome sets in the following manner.

For three sets of possible outcomes, A and B end up with exactly the same net outcome (i.e., they have to pay exactly the same amount to get the new vehicle after accounting for the trade-in value for their used cars). However, compared to A, B always gets more for the trade-in vehicle but pays more for the new car. For example, one set presents the following information:
Set 1: Person A: Sold the used car for $9,000, and purchased the new car at $33,000.
Person B: Sold the used car for $9,500, and purchased the new car at $33,500.

Note that in the above set, both A and B end up paying $24,000 to purchase the new car. However, compared to A, B gained on the used car by $500 but lost on the new car by $500. Similarly, two other sets of possible outcomes were created for replication purposes (see appendix B for a complete list of the outcome sets). For these three sets of outcomes, H3 would be confirmed if participants rate B as happier than A (i.e., for each set, the observed value is higher than the middle point 4, which indicates that A and B as equally happy).

In addition, we designed two more outcome sets, such that we made person A better off than person B overall. Specifically, the two sets were presented as following:

Set 4: Person A: Sold the used car for $9,050, and purchased the new car at $32,750.
Person B: Sold the used car for $8,500, and purchased the new car at $32,500.

Set 5: Person A: Sold the used car for $9,050, and purchased the new car at $32,750.
Person B: Sold the used car for $9,600, and purchased the new car at $33,600.

In the above two outcome sets, A was always better off overall (i.e., A ended up paying $300 less than B to buy the new car). We intentionally kept A constant in both sets but varied B, such that compared to B, A either gained (in set 4) or lost (in set 5) on the used car by $550. If our theorizing is correct, participants should rate A as happier in set 1 versus in set 2. Note that the presentation sequence of the five sets of outcomes was randomized, and there was no time limit.

Results

As detailed earlier, three of the outcome sets featured identical outcome between person A
and person B, but person B always gained on the used car while lost the same amount on the new
car price. Thus, for each of these three sets, we conducted a One-Sample T Test, with the test
value set up at 4 (i.e., which indicates A and B as equally happy). For each of the three sets, the
t-test produced a significant p value (for set 1: $t(121) = 4.15, p < .001$; for set 2: $t(121) = 4.52, p$
$< .001$; for set 3: $t(121) = 4.90, p < .001$). Consistent with our expectation, in all sets, participants
perceived person B as happier than person A ($M_{set1} = 4.43, M_{set2} = 4.46, M_{set3} = 4.54$).

For the next two outcome sets (i.e., set 4 and 5), where A is always better off than B but
either gained or lost on the used car compared to B, we conducted a Paired-Samples T Test. As
anticipated, the t test revealed a significant result ($t(121) = -6.55, p < .001$), such that participants
rated person A as happier in set 4 ($M = 2.55$; where A gained on the used car but lost on the new
car) versus in set 5 ($M = 3.94$; where A lost on the used car but gained on the new car).

Discussion

Results from experiment 3 confirmed H3. In particular, across a number of outcome sets, we
observed that, when controlling for the net outcome, trade-in consumers felt happier when they
gained on the used product but lost on the new product than vice versa. Note that one alternative
explanation to the outcome evaluation task results could be that participants paid more attention
to the used car price because the price difference on the used car represented a bigger percentage
level than the price difference on the new car price. To test this explanation, we employed a
different scenario in another study (i.e., a person sells a more expensive piano in order to buy a
cheaper one), and designed outcome sets such that the new product purchase price is actually
lower than the old product selling price. Thus, within each outcome set, the price difference
between the used product selling prices represented a lower percentage level than the price difference between the new product purchase prices. Still, we replicated what we observed in Experiment 3 in this new study.

In the next study, we examine whether dealers versus consumers have different perspectives in a trade-in context. In addition, we aim to provide qualitative evidence (e.g., thoughts data) that suggests that trade-in consumers value the trade-in price more than the new product price

EXPERIMENT 4

Our theorizing suggests that trade-in consumers usually place more weight on the used product trade-in value than the new product purchase price. What remains unclear is whether dealers would have the same perspective as trade-in consumers, or whether they are indifferent to the alternative price combinations, as long as the final outcome is the same. We argue that dealers should be indifferent to the price combinations, mainly because they do not have the same concern as trade-in consumers about closing the used product account in the “red.” Given that dealers’ only motivation is to make as much profit as possible from the two transactions combined, they should treat both transactions as equally important. Therefore, if we provide participants with similar outcome sets as those presented in experiment 3, we should replicate the experiment 3 results from the consumers’ perspective. However, if participants are asked to imagine from a dealer’s perspective, those effects should disappear.

Method
A total of 83 undergraduate students were asked to imagine auto trade-in situations from the dealer’s perspective. In particular, the scenario described that Person A has come to you (the dealer) to buy a new vehicle and at the same time trade-in his used one. After doing all the calculation, you think you could accept a bottom line of $20,500 paid by A to trade-in for the new car. Next, participants were presented with two possible outcomes. Specifically:

Option1: Give person A $8,600 for his used car, and charge him $29,100 for the new car.

Option2: Give person A $8,200 for his used car, and charge him $28,700 for the new car.

Then, they were asked to rate on a 1-7 scale (1: definitely option 1; 4: no difference; 7: definitely option 2) the following two questions: (1) which option do you think will make you (as a dealer) feel happier? and (2) which option do you think will make customer A feel happier. Note that the two options in set 1 actually have the same net outcome, but A gained on the used car while losing on the new car in option 1 compared to option 2. Finally, participants were asked to provide reasons for the ratings by writing down their thoughts in detail.

Results

For each of the two ratings participants provided, we conducted a One-Sample T Test with the test value set at 4. When participants took the dealer’s perspective, their ratings were not significantly different from the middle point of the scale (M = 3.94, p > .56). However, when participants were asked to think from consumer A’s perspective, their ratings replicated experiment 3A results. That is, they rated that option 1 (where A gained on used car but lost on the new car) would make customer A happier (M = 2.77, t(82) = -6.83, p < .001).

Participants’ thoughts provided further support to our theory. We coded (1) the number of thoughts concerning dealers are indifferent to the price allocations (e.g., dealers are rational, so there's no difference for the two options), and (2) the number of thoughts concerning consumers
value more of the trade-in value (e.g., Existing user has emotion towards the loss, so would be happier for higher sale price of the car).

We first conducted frequency analysis and found that more than 32% of the participants generated thoughts in the first category, and more than 51% of the participants produced thoughts in the second category. In addition, the number of the thoughts in the second category (i.e., consumers value more of the trade-in value) was significantly correlated with participants’ rating of the customer A’s happiness ($r = -.62, p < .001$). Such thoughts were not correlated with participants’ rating of the dealer’s happiness ($p > .59$). The number of thoughts in the first category (regarding dealers should be indifferent) was not correlated with participants’ ratings of either the dealer’s or customer’s happiness ($p > .29$).

Discussion

Results from experiment 4 provided more insights to our theorizing. Specifically, when participants were asked to imagine the situations either from the customer’s or the dealer’s perspective, we observed different but expected results. While participants perceived dealers to be indifferent to the price allocations between the trade-in value and the new vehicle purchase price, they thought the customer would place more value on the trade-in. Thought protocols provided additional support to our arguments.

EXPERIMENT 5

In this last experiment, we attempt to address a potentially important public policy issue,
namely whether there is anything that consumers can do to avoid paying a higher price for the new good if you are educated about the trade-in process. As suggested by the many experts quoted in this paper, it appears that if trade-in consumers can regard the trade-in and new product purchase as two separate transactions, they might be able to successfully negotiate a lower price for the new product. This should be the case because when regarded as separate transactions, consumers’ concern for the trade-in transaction should not affect their attitude toward the new product transaction. Thus, they should perceive the new product transaction as equally important as those in the buying alone condition and therefore expect to pay comparable amount of price for the new product. This study tests the above reasoning.

Method

A total of 66 students participated in the study and imagined one of the three scenarios. Two of the scenarios (i.e., buying alone and trade-in condition) were identical as those used in study 1. The third scenario also featured a trade-in situation but participants were explicitly told to treat the trade-in and new car purchase as two separate transactions and negotiate with the dealer on the price for one transaction at a time. Participants estimated their willingness-to-accept price for the used car and/or their willingness-to-pay price for the new one.

Results

One-way ANOVA on the willingness-to-pay measure reached significance (F (2,63) = 3.70, p < .05). As anticipated, when treating these transactions separately, trade-in consumers estimated a comparable low willingness-to-pay price for the new car as the buying alone consumers (M = $27,821.25 vs. $27,359.05; p > .54). In addition, participants who processed the
two transactions simultaneously estimated a significantly higher willingness-to-pay price ($M = 19,366.29$) than those in the buying alone ($t(63) = 2.59, p < .05$) and those in the trade-in separate condition ($t(63) = 2.06, p < .05$). Finally, one-way ANOVA on the willingness-to-accept measure revealed that regardless whether trade-in consumers processed the two transaction separately or simultaneously, they asked for comparable amount of prices for their used car ($M = 6,857.71$ vs. $6,926.00; F <1$).

Discussion

Results from this study confirmed our prediction that when trade-in consumers regard the two transactions as separate ones, they can avoid paying higher prices for the new products. We realize that in reality it may be hard for consumers to separate these two transactions (e.g., due to pressure from dealer). Thus, a more practical way might be for consumers to physically separate the two transactions by selling their used car and buying a new car from different dealers. In sum, results from the above five lab experiments provided convergent support to our theorizing. Next, we move onto a field study where we use real-life auto data to further test our theory.

FIELD STUDY USING AUTO TRANSACTION DATA

Data Description

We use data on individual purchases of new cars from the SUV segment collected by the Power Information Network (an affiliate of J.D. Power and Associates) from participating
dealers in California. The data consists of transactions for those dealers from January 1997 to March 2003. For each transaction, we observe the exact vehicle purchased, the price the consumer negotiated for it, the dealer’s cost of obtaining the car from the manufacturer, information on a potential trade-in, and consumer demographics.

We focus on “cash” transactions, which are transactions that are neither leases, nor are financed through the dealer system. This is because both leases and dealer financed transactions are subject to various types of promotions such as cash rebates, interest rate promotions and residual value enhancements, all of which could affect the final negotiated price. For example, a very low promotional interest rate or APR (annual percentage rate) on a lease could result in the consumer consenting to a higher price than if the promotion were absent. Since our objective is to understand only how the presence of a trade-in affects the negotiated price for the new car, deleting these transactions allows us to focus on how the trade-in alone has an impact on price.

Methodology

Our objective is to test whether trade-in consumers pay a higher price for a new car than customers who simply purchase a car without trading in a used vehicle with the dealer. Intuitively, this involves comparing prices of new cars that involve a trade-in with the prices of those without one. If our hypothesis is correct, the new car price for trade-in customers should, on average, be higher than non trade-in customers. We use a simple regression approach where our dependent variable, the new car price, is regressed on a dummy variable which indicates whether the transaction involved a trade in (=1) or not (=0). A positive coefficient for this variable, after having controlled for other effects, will signify that trade-in customers do indeed
pay a higher price for their new vehicle.

*Dependent Variable*

As stated earlier, the dependent variable in our regression is the transaction price for the new vehicle. This price is the pre-sales tax price that the customer pays for the vehicle, including factory installed accessories and options, and any dealer installed accessories contracted at the time of sale that contribute to the resale value of the car.

Conceptually, the price of the car should not reflect the impact of any promotions offered to the customer. We therefore eliminate leases and dealer financed transactions from our estimation set. However, cash transactions are still subjected to cash promotions such as customer and manufacturer rebates. For this reason, we make one modification to the observed transaction price, i.e., we subtract off a rebate amount if the purchase is made under a rebate offer. Thus, any difference in prices for trade-in and non trade-in customers should no longer reflect the impact of any cash promotions.

*Controls*

In order to correctly assess the impact of a trade-in on the final new car price, we need to control for a variety of factors. First, we control for car fixed effects. A “car” in our sample is the interaction of make, model, year, body type, transmission, displacement, doors, cylinders, and trim level. For identification purposes, we drop from the estimation set any thus defined cars that have fewer than 50 sales in our sample. This leaves us with 102 cars and a sample size of 11,146.
To control for time variation in prices, we define a dummy WeekEnd to specify whether the car was purchased on a Saturday or a Sunday. In addition, we also control for seasonal effects by including a dummy for each of the first three quarters. Since dealers tend to offer lower prices to clear high inventory, the impact of inventory levels on price is accounted for by including the number of days the car was on the lot before it was sold (DaysToTurn). Finally, if there are volume targets to be met at the end of the month, these are accounted for by an EndofMonth dummy, which equals 1 if the car was sold within the last five days of the month.

We also control for the age, gender, income, education, occupation, and race of buyers by using census data that the data provider matches with the buyer’s address from the transaction record. The data are at the level of “block groups”, which on average contain about 1,100 people. Finally, we control for the geographic region in which the car was sold (northern or Southern California).

Table 1 presents summary statistics for the data. 30% of our transactions involve trade-ins, the rest were simply direct purchases of new cars. The average transaction price of a new vehicle in our data is $29,070. The table also presents customer demographics.

Results

The equation to be estimated is given by:

\[ P_{ijt} = \lambda \text{Trade} \ln_i + \beta_1 X_1 + \beta_2 X_2 + \mu_j + \varepsilon_{ijt} \]
where $P_{ijt}$ is the adjusted price negotiated by consumer $i$ for vehicle $j$ at time $t$. TradeIn$_i$ is a dummy variable indicating whether a trade-in occurred at the time of the transaction (=1) or not (=0). $X_i$ is a vector of consumer characteristics including gender, age, race, income, education, employment type and home ownership. $X_{jt}$ is a vector of control variables, such as inventory levels. $\mu_j$ are car specific fixed effects.

The results of the analysis are presented in Table 2. The primary parameter of interest is $\lambda$, which measures the extent to which a trade-in influences the final price of the new vehicle. If $\lambda > 0$, then our hypothesis is supported. If $\lambda = 0$, then the trade-in has no influence on the new car price and if $\lambda < 0$, then trade-in customers will actually pay less on the new vehicle than their non trade-in counterparts.

________________________
Insert table 2 about here
________________________

We find, supportive of hypothesis H1b, $\lambda$ is positive and significant, implying that trade-in customers end up paying more than non trade-in consumers. We find that on average, when there is a trade-in, customers pay $452.5 more than if no trade-in were involved in the transaction.

**GENERAL DISCUSSION**

The goal of the present research is to examine how trading in a currently owned product for a new one might affect consumers’ willingness-to-pay price for the new product. Based on the literature, particularly mental accounting principles, we propose that trade-in consumers should
consider getting a good value on their current product to be particularly important and therefore spend a considerable amount of resources on it. As a result, they are left with few resources for the new product transaction and therefore exhibit a higher willingness-to-pay price for the new product compared to those who are only buying the new product.

This theorizing was supported by a series of five experiments. In experiment 1, we established that while trade-in consumers perceived the used product transaction as equally important as those who are only sellers, and therefore exhibited comparable levels of willingness-to-accept prices for their used products, they perceived the new product transaction as less important than those who are buyers alone, and thus expected to pay more for the new product. Experiment 2 provided additional evidence to the proposed process mechanism. By manipulating the perceived importance of the trade-in transaction, we replicated the results of experiment 1 when participants perceived their trade-in transaction to be highly important. Yet, such an effect was absent when the trade-in importance was low. Experiment 3 demonstrated that when the final net outcome is fixed, trade-in consumers feel happier when they gain on the used product and lose on the new product than vice versa. Finally, Experiment 4 and 5 extended on the previous studies by showing that consumers and dealers indeed have different perspectives in a trade-in context, and consumers can take actions (e.g., separating the two transactions) to avoid paying higher prices for the new product when there is a trade-in involved.

In addition to these lab studies, results from real transaction data in the automobile market provide external validity to our theorizing. Specifically, after controlling for various other variables which may affect the negotiated price, we are able to show that trade-in customers end up paying, on average, $452 more than customers who simply buy a new car from the dealer.

The present research makes several important contributions. First, it contributes to the
literature on trade-ins or replacement decisions. Extent research has focused primarily on factors that facilitates or hinders replacement decisions. For example, (Okada 2001) suggests that one of the key factors that hinder consumers from upgrading their products is the psychological cost of closing the existing product account in the red. Thus, the presence of a trade-in should lead to more replacement purchases, as the trade-in allows the consumer to reduce the mental cost associated with closing the existing product account. We add to this literature by suggesting that the presence of a trade-in not only affects consumers’ likelihood to make a replacement purchase, but also their purchase price for the new product (i.e., willingness-to-pay price in lab studies and real purchase price in the field data). Second, this research adds to the buyer-seller differences literature by investigating situations when consumers act as both buyer and seller simultaneously. We found that trade-in consumers tend to care more about the trade-in value they receive than the price they pay for the new product, and consequently, exhibit a higher willingness-to-pay price for the new product than those who are buyers alone. Third, this research offers important insights regarding consumer psychology in a trade-in context. While there is substantial anecdotal evidence suggesting that consumers should never discuss the terms of their trade-in product before finalizing a purchase price for the new product, it remains unclear why. This research addresses this question and provides evidence for the underlying process. Finally, this research offers public policy implications by demonstrating that when consumers separate the trade-in and new product purchase transactions, they could avoid paying higher price for the new goods.

Finally, the current research presents potential weaknesses which merit future studies. First, in our lab studies, we asked participants to imagine trade-in scenarios. Thus, we ignore the real world bargaining process that is usually involved in such transactions. Future research can
examine whether our results can be replicated in a real bargaining experiment. Second, future research could also further investigate the boundary conditions for our observed effects. Although in study 2 we show that when the used product is perceived to be unimportant, trade-in consumers no longer estimate a higher willingness-to-pay price for the new product than buyers alone, it remains unclear what contributes to such low importance perceptions. A number of factors, such as the extremely low value associated with the used product relative to the new one, might cause such low importance ratings. Third, in our field study, while we observe the trade-in price for each used car involved in a trade-in transaction, we have no information on prices obtained by consumers who sold their used cars separately to dealers (i.e., consumers who only sold their used car to the dealer without buying a new vehicle). Thus, we are unable to test whether the selling prices (presumably indicative of willingness-to-accept prices) of the used vehicle exhibited by trade-in consumers and selling alone consumers are indeed comparable, as our experimental results indicated. Finally, we do not have sufficient information to conclude whether there is a net loss when consumers buy a new car with a trade-in, compared to those who only buy the new car from a dealer but sell used car privately. Such an analysis would require not only information about the used car selling price when sold privately, but also the associated transaction costs. These and many other interesting questions await future investigation.
References


As pointed out by one reviewer, the income effect might be tested in a different manner. Specifically, if a trade-in consumer first negotiates the new product price and then the price of the trade-in, the observed effect should disappear if it is due to feelings of windfall or income effect, but should remain if it is due to the importance perception of the involved transactions. Accordingly, we conducted another study, where four conditions were included, namely the same buying alone and trade-in condition (i.e., buy and sell occur simultaneously) as those used in experiment 1, and two other trade-in conditions where we manipulated the sequence of the two transactions (i.e., participants either buy new car first and then sell the used car, or vice versa). Supportive of our theorizing, we found that those in the buying alone condition estimated a significantly lower WTP price for the new car compared to all other three trade-in conditions ($M_{\text{buy}} = $26,688.17, M_{\text{trade-in}} = $28,734.50, M_{\text{buy_sell}} = $28,165.22, M_{\text{sell_buy}} = $28,677.27; ps < .05). The differences among the latter three conditions were not significant (ps > .48). Thus, we ruled out the income effect as an alternative explanation.
## TABLE 1: DESCRIPTIVE STATISTICS FOR THE FIELD STUDY

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Median</th>
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<td>11581.0</td>
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<td>1st Quarter</td>
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<td>.4</td>
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<td>1.0</td>
<td>0</td>
</tr>
<tr>
<td>2nd Quarter</td>
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<td>.4</td>
<td>11146</td>
<td>0</td>
<td>1.0</td>
<td>0</td>
</tr>
<tr>
<td>3rd Quarter</td>
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<td>.4</td>
<td>11146</td>
<td>0</td>
<td>1.0</td>
<td>0</td>
</tr>
<tr>
<td>End of Month</td>
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<td>.4</td>
<td>11146</td>
<td>0</td>
<td>1.0</td>
<td>0</td>
</tr>
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<td>Weekend</td>
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<td>.4</td>
<td>11146</td>
<td>0</td>
<td>1.0</td>
<td>0</td>
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<tr>
<td>Trade-In</td>
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<td>1.0</td>
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<td>.5</td>
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<td>1.0</td>
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<td>102.0</td>
<td>46.0</td>
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<td>Female</td>
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<td>1.0</td>
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</tr>
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<td>%Asia</td>
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<td>11146</td>
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<td>87.7</td>
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<td>%Black</td>
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<td>100.0</td>
<td>1.0</td>
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<td>%Blue Collar</td>
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<td>100.0</td>
<td>18.2</td>
</tr>
<tr>
<td>%College Graduate</td>
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<td>11146</td>
<td>0</td>
<td>88.6</td>
<td>38.6</td>
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<tr>
<td>%Hispanic</td>
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<td>8.9</td>
<td>11146</td>
<td>0</td>
<td>56.4</td>
<td>8.9</td>
</tr>
<tr>
<td>%Less High School Graduate</td>
<td>8.4</td>
<td>8.2</td>
<td>11146</td>
<td>0</td>
<td>100.0</td>
<td>6.0</td>
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<tr>
<td>%House Ownership</td>
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<td>11146</td>
<td>.6</td>
<td>100.0</td>
<td>79.5</td>
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<tr>
<td>% Rural</td>
<td>8.5</td>
<td>25.2</td>
<td>11146</td>
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<tr>
<td>Median HHsize</td>
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<td>11146</td>
<td>1.5</td>
<td>6.0</td>
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<td>Median House Value ($)</td>
<td>274133.2</td>
<td>118019.6</td>
<td>11146</td>
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<td>248551.0</td>
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<td>Income ($)</td>
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<td>27239.9</td>
<td>11146</td>
<td>10551.0</td>
<td>150000.0</td>
<td>68114.0</td>
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TABLE 2: REGRESSION RESULTS FOR THE FIELD STUDY

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimates</th>
<th>St. Dev</th>
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</thead>
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<tr>
<td>Intercept</td>
<td>*22617.97</td>
<td>335.930</td>
</tr>
<tr>
<td>Trade-In</td>
<td>*452.515</td>
<td>43.629</td>
</tr>
<tr>
<td>Quarter 1</td>
<td>84.848</td>
<td>60.2303</td>
</tr>
<tr>
<td>Quarter 2</td>
<td>*120.847</td>
<td>60.416</td>
</tr>
<tr>
<td>Quarter 3</td>
<td>*-113.036</td>
<td>59.203</td>
</tr>
<tr>
<td>Weekend</td>
<td>10.081</td>
<td>51.076</td>
</tr>
<tr>
<td>Days to Turn</td>
<td>*-6.157</td>
<td>.341</td>
</tr>
<tr>
<td>Northern CA</td>
<td>*343.958</td>
<td>49.381</td>
</tr>
<tr>
<td>End of Month</td>
<td>-50.771</td>
<td>49.502</td>
</tr>
<tr>
<td>Age</td>
<td>0.993</td>
<td>1.691</td>
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<td>Female</td>
<td>*171.707</td>
<td>45.157</td>
</tr>
<tr>
<td>%Asia</td>
<td>1.437</td>
<td>2.157</td>
</tr>
<tr>
<td>%Black</td>
<td>*17.154</td>
<td>3.548</td>
</tr>
<tr>
<td>%Blue Collar</td>
<td>1.611</td>
<td>3.477</td>
</tr>
<tr>
<td>%College Graduate</td>
<td>3.733</td>
<td>2.607</td>
</tr>
<tr>
<td>%Hispanic</td>
<td>1.782</td>
<td>3.842</td>
</tr>
<tr>
<td>%Less High School Graduate</td>
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<td>4.775</td>
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<tr>
<td>%House Ownership</td>
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<td>% Rural</td>
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<td>.905</td>
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<tr>
<td>Median HHsize</td>
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<td>51.670</td>
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<tr>
<td>Median House Value (divided by 10^5)</td>
<td>*-59.353</td>
<td>32.757</td>
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<tr>
<td>Income (divided by 10^5)</td>
<td>572.368</td>
<td>474.275</td>
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<td>Income2 (divided by 10^{10})</td>
<td>-79.255</td>
<td>230.791</td>
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<tr>
<td>Adj. R-squared</td>
<td>.7476</td>
<td></td>
</tr>
</tbody>
</table>

Note: (*) indicates significance at 5% level.

Note: Product dummy was not included in the table.
APPENDIX A: EXPERIMENT 1 STIMULI (TRADE-IN CONDITION)

Jack is thinking of buying a new car (2006 Volkswagen Passat) from a local dealer (say, Dealer C), and at the same time, trades in his used car (2000 Honda Accord) to the same dealer.

Jack’s current used car is a 2000 Honda Accord and he has had it for nearly 5 years. The vehicle has been an important part of his life in the past several years, as he drives it to school everyday as well as to various other places. In sum, the car has served him very well. However, due to various reasons, Jack has decided to move on and trade it in for a new car.

Jack did his research and found that, according to the Canadian Black Book, the average price for a used 2000 Honda Accord in average condition is CAD$7,528. The Manufacturer Suggested Retail Price (MSRP) for the 2006 Volkswagen Passat is CAD$29,950.

Below are the brief descriptions of both Jack’s used car that he plans to trade in and the new car that he is thinking of buying from Dealer C:

<table>
<thead>
<tr>
<th>Year</th>
<th>Jack’s Used Car that He Plans to Trade in</th>
<th>The New Car Jack Plans to Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make &amp; model</td>
<td>Honda Accord</td>
<td>Volkswagen Passat</td>
</tr>
<tr>
<td>Description</td>
<td>4 door Sedan, Two Wheel Drive, 2.3Liter</td>
<td>4 door Sedan, Four Wheel Drive, 3.6Liter</td>
</tr>
<tr>
<td>Mileage</td>
<td>63,000</td>
<td>110</td>
</tr>
<tr>
<td>Horse Power</td>
<td>135</td>
<td>280</td>
</tr>
<tr>
<td>Weight</td>
<td>2932 lbs</td>
<td>3576 lbs</td>
</tr>
<tr>
<td>Length</td>
<td>188.8 inches</td>
<td>188.2 inches</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>106.9 inches</td>
<td>106.7 inches</td>
</tr>
<tr>
<td>Price</td>
<td>CAD$7,528 (Average price, according to the Canadian Black Book)</td>
<td>$29,950 (MSRP)</td>
</tr>
</tbody>
</table>

Note: Participants in the buying alone condition only imagined that Jack is thinking of buying a new car from the dealer, and they were presented only with the new car information. Similar, participants in the selling alone condition only imagined that Jack is thinking of selling his used car to the local dealer, and they were presented only with the used vehicle information.
### APPENDIX B: EXPERIMENT 3 STIMULI (OUTCOME SETS)

<table>
<thead>
<tr>
<th>Set</th>
<th>Outcome Sets</th>
<th>Net Outcome</th>
</tr>
</thead>
</table>
| Set 1 | **Person A**: Sold the used car for $9,000, and purchased the new car at $33,000.  
**Person B**: Sold the used car for $9,500, and purchased the new car at $33,500. | Same net outcome within each set, but compared to A, B always gains on the used car.                   |
| Set 2 | **Person A**: Sold the used car for $8,340, and purchased the new car at $33,000.  
**Person B**: Sold the used car for $8,520, and purchased the new car at $33,180. |                                                                                                       |
| Set 3 | **Person A**: Sold the used car for $8,950, and purchased the new car at $31,500.  
**Person B**: Sold the used car for $9,100, and purchased the new car at $31,650. |                                                                                                       |
| Set 4 | **Person A**: Sold the used car for $9,050, and purchased the new car at $32,750.  
**Person B**: Sold the used car for $8,500, and purchased the new car at $32,500. | A is always better off by $300 overall, but compared to B, either gains (set 4) or loses (set 5) on used car. |
| Set 5 | **Person A**: Sold the used car for $9,050, and purchased the new car at $32,750.  
**Person B**: Sold the used car for $9,600, and purchased the new car at $33,600. |                                                                                                       |