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Spending on the Fly: Mental Budgets, Promotions, and Spending Behavior

Recent research has suggested that consumers have in-store slack for grocery trips—that is, they leave room in their mental budgets to make unplanned purchases. Drawing on this work, this article examines how the impact of promotions depends on whether the shopper still has in-store slack remaining in his or her mental budget. Specifically, the authors evaluate how the effect of promotional savings for both planned and unplanned items on spending varies as a function of whether the item is purchased before or after the shopper's in-store slack is depleted. In addition, they examine how these relationships vary depending on income. To achieve these goals, the authors conducted a field study in which respondents used a handheld scanner to record the order of purchases. The results suggest that savings on planned items lead to stockpiling by higher-income shoppers when the savings occur before the in-store slack has been depleted but lead to increased purchase of unplanned items when they occur after in-store slack is depleted. The results also show that promotions on unplanned grocery items generate incremental spending at the basket level, which increases with income but only when the item is purchased after the in-store slack is exceeded. The authors discuss implications for shopper marketing strategies.

Keywords: mental budgets, promotions, shopper marketing, in-store decision making, unplanned purchases

Manufacturers and retailers are increasingly focusing on the importance of in-store decision making. Recently, Procter & Gamble coined the phrase the "first moment of truth" to describe the first three to seven seconds when a consumer sees a product on the shelf. The importance that Procter & Gamble puts on in-store decision making is demonstrated by its appointment of a "Director of First Moment of Truth" and a supporting department. Other manufacturers and retailers are also increasingly investing in in-store decision making, as evinced by the projected growth rate of 21% for in-store marketing through 2010 (Neff 2007). Furthermore, there are a growing number of joint promotions between marketers and retailers (Spethmann 2005).

For first moment of truth to be of such interest, consumers need to be making a substantial number of decisions at the point of purchase. An encouraging statistic in this regard is that shoppers make the majority of their decisions in the store. Specifically, only 30% of purchases are preplanned down to the brand level, and a surprising 59% are totally unplanned before a consumer enters the store (Inman and Winer 1998). However, does shopper marketing actually generate incremental sales at the basket level, or does it simply serve to redirect which items consumers purchase? While Blattberg, Briesch, and Fox (1995) indicate that it is an empirical generalization that temporary promotions increase sales of the promoted item, less attention has been paid to the basket-level impact. To our knowledge, studies on the store- or basket-level impact of promotions have primarily been conducted outside the grocery domain (i.e., Ailawadi et al. 2006; Lam et al. 2001; Mulhern and Padgett 1995). A notable exception is Walters and MacKenzie (1988), who conclude that in-store price promotions do not influence overall store sales or profit. Given these limited findings, this article provides further insight into the basket-level impact of promotions, which is an important topic for retailers because of their investment in joint promotions.

Research on promotions has incorporated various perspectives from behavioral decision theory, such as transaction utility (i.e., Grewal, Monroe, and Krishnan 1998; Lichtenstein, Netemeyer, and Burton 1990; Thaler 1985), reference prices (i.e., Kalyanaram and Winer 1995; Winer 1986), and loss aversion (Hardie, Johnson, and Fader 1993), but there is a dearth of research that considers the role of mental budgeting. While economists have traditionally assumed that money is fungible, research has shown that consumers use a form of mental budgeting in which they allocate money to mental accounts and try to resist further purchases when the budget is depleted (Heath and Soll 1996; Thaler 1985). Stilley, Inman, and Wakefield (2010) provide evidence that consumers have a mental budget, even if implicit, at the shopping trip level. Furthermore, they report that consumers have in-store slack in these budgets, which means that a portion of the total budget is not

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assigned to be spent on any particular product before the shopping trip begins. Instead, the funds remain available for in-store decisions—that is, consumers leave room in their trip budgets to make unplanned purchases.

Given these recent developments, the goal of this article is to determine whether the impact of promotions depends on whether the shopper still has in-store slack remaining in his or her mental budget. Specifically, we argue that the effect of promotional savings on spending varies depending on whether the item is purchased before or after the shopper's in-store slack is depleted. In addition, we predict that these relationships vary depending on income. To test our theses, we report the results of a field study in which we examine the relationship between promotional savings and spending. The respondents used a handheld scanner to record the order of purchases, which enables us to assess which items were purchased before and after the in-store slack was depleted.

This article makes at least three important contributions. First, we find that the nature of the spending increase associated with savings on planned items depends on whether the consumer still has in-store slack remaining. Specifically, we find that savings on planned items are positively related to spending on planned items while there is in-store slack remaining but positively related to spending on unplanned items after the in-store slack is exhausted. In doing so, we qualify the findings of Heilman, Nakamoto, and Rao (2002) by showing that savings on planned items only increases spending on unplanned items after in-store slack is depleted. Second, we show that promotions on unplanned grocery items generate incremental spending at the basket level (which differs from Walters and Mackenzie 1988) but only when the item is purchased after the in-store slack is exceeded. This suggests that though some promotions can be effective in encouraging incremental unplanned purchases, savings from other promotions are simply absorbed into the in-store slack. Third, in contrast to previous research (Bell, Chiang, and Padmanabhan 1999; Neslin, Henderson, and Quelch 1985), we find that the tendency to stockpile depends on income when the savings occur before in-store slack is depleted. These findings have implications for the placement of promotions in the store trip path (Hui, Fader, and Bradlow 2009) and the nature of promoted items.

We organize the remainder of this article as follows: We review the literature to develop our hypotheses regarding spending on planned and unplanned items. Then, we present the model and the results using a field study of more than 300 respondents. After presenting the main results, we conduct additional analysis to assess the implications of mental budget uncertainty. We close with a discussion of managerial implications.

Background and Hypotheses

In contrast to the assumption that money is fungible, empirical evidence demonstrates that many consumers use a system of mental budgeting in which they allocate money to different mental accounts (e.g., food, entertainment) and try to resist further spending in that category after the budget is depleted (Heath and Soll 1996; Thaler 1985). To help themselves stay within overall spending limits, consumers use mental budgets to facilitate rational trade-offs between competing funds as a self-control device (Thaler 1999; Thaler and Shefrin 1981). Furthermore, Prelec and Loewenstein (1998) argue that consumers can use mental budgets as a way of mentally "prepaying" to reduce mental costs at the time of purchase.

Stilley, Inman, and Wakefield (2010) take the idea of mental budgets further by demonstrating that consumers have mental budgets for grocery shopping trips and by showing that mental budgets include room for unplanned purchases. Although not all consumers have explicit grocery budgets, shoppers have experience with the amount they spend on typical trips because grocery shopping patterns tend to display a weekly cycle (Kahn and Schmittlein 1989). These past spending levels serve as a basis for the shopper's future spending expectations, as they do in many organizations' budgeting processes (Cyert and March 1963; Wildawsky 1964).

A shopper anticipates the occurrence of unplanned purchases in his or her overall spending expectation for at least two major reasons. First, the routine nature of grocery shopping means that a shopper is aware that in-store stimuli will trigger forgotten needs (Bettman 1979; Lynch and Srull 1982). Second, a shopper has experience that he or she will get new ideas while in the store (Inman, Winer, and Ferraro 2009; Iyer 1989; Stern 1962) or that he or she may make impulse purchases. Drawing on this research, Stilley, Inman, and Wakefield (2010) introduce the idea that the trip mental budget consists of both an itemized portion and in-store slack. They define the itemized portion of the mental budget as the amount of money that is allocated to be spent on items that are planned at either the category or the brand level (e.g., cereal or Cheerios). They define in-store slack as the portion of the mental budget that is not assigned to be spent on any particular product or category before the shopping trip begins. Instead, the funds remain available for in-store decisions. Stilley, Inman, and Wakefield (2010) find that the average shopper in their field study had in-store slack of $17.35 but only exceeded the average total mental budget of $58.46 by $.47. In addition, they collected free response data in which more than half the respondents with in-store slack indicated that the money was for "unplanned wants," while approximately 40% indicated that the money was for "forgotten needs." They did not find a significant difference in the amount of slack or budget deviation between the forgotten needs and the unplanned wants groups.

We argue that the amount of in-store slack remaining at a given point during the shopping trip has important implications regarding the impact of promotional savings. We first present H_1 and H_2, which pertain to savings on planned items, and then we present H_3, which pertains to savings on unplanned items. Finally, we present H_4 and H_5, which make predictions regarding the moderating role of income. Figure 1 provides an overview of our hypotheses.

FIGURE 1
Overview of Hypotheses

The Promotional Savings Are for a(n):	The Purchase Decision is Made: Before Slack Spent	The Purchase Decision is Made: After Slack Spent
Planned Item	Increases planned-item spending (H_1) *Increases with income (H_4)*	Increases unplanned-item spending (H_2)
Unplanned Item	Absorbed into slack (H_3)	Increases unplanned-item spending (H_3) *Increases with income (H_5)*

Savings on Planned Items

We first consider the impact of savings on planned items on spending on planned items and on spending on unplanned items. We define a planned item as an item planned to at least the category level (i.e., the customer intends to buy cereal). Drawing on the literature, in Table 1, we summarize the four potential outcomes that can occur. Savings on planned items could have a negative relationship to planned-item spending (buy planned brand and pocket the savings), no relationship (switch up to a higher-tier brand with same net price), or a positive relationship (stockpile). Although behavior varies across consumers, we expect that the net effect will be an increase in spending on planned items because of the consistent empirical support for stockpiling and brand switching (Bell, Chiang, and Padmanabhan 1999). Savings on planned items can also increase purchases of unplanned items (Heilman, Nakamoto, and Rao 2002) because the savings may be perceived as a windfall gain and therefore are more readily spent than even current income (i.e., Arkes et al. 1994). Notably, Heilman, Nakamoto, and Rao (2002) find that in addition to making more unplanned purchases, shoppers who received a coupon for a planned item sometimes purchase an increased quantity of the couponed item. The coupon led to both an increase in unplanned purchases and an increase in purchase quantity of the planned item (i.e., stockpiling), indicating that more information is needed on factors that influence the choice of items that consumers use the savings to purchase.

We argue that it is important to consider that most consumers anticipate the occurrence of unplanned purchases and incorporate these expectations into their mental budgets for the trip through in-store slack (Stilley, Inman, and Wakefield 2010). As with psychological windfalls, consumers should have a high marginal propensity to purchase unplanned items with their in-store slack because the mental account is intended for this purpose. Therefore, we argue that whether or not the shopper has in-store slack remaining will influence the degree to which promotional savings on planned items are perceived as a windfall. Consequently, we predict that people who currently have in-store slack remaining (and therefore already have the ability to make unplanned purchases without exceeding their mental budget) will be less sensitive to the psychological windfall associated with savings on planned items.

Our predictions qualify the findings from previous research by distinguishing between savings on planned items selected before the in-store slack is depleted and those selected after the in-store slack is depleted.[1] When in-store slack remains, the shopper will have less motivation to use the perceived windfall from the planned-item savings to justify the purchase of unplanned items. There-

[1]Before testing our hypotheses, we first demonstrate that parsing the savings into before and after the slack is depleted increases the variance explained by the model.

TABLE 1
Insights from Promotions Literature

Potential Outcomes of Savings on a Planned Item	Insights from Literature
Buy item at discounted price for a decrease in spending on planned items	•Discounts on planned purchases may function as a reward for current customers without increasing sales (Taylor and Long-Tolbert 2002). •Promotions to customers already planning to purchase decrease overall revenue for product/service (Matosian 1982).
Switch to discounted higher-tier brand with no change in spending on planned items	•Promotions can entice consumers to switch brands (i.e., Bell, Chiang, and Padmanabhan 1999; Blattberg and Neslin 1993; Gupta 1988). •Higher-tier brands tend to draw more from low-tier brands than the reverse (i.e., Blattberg and Wisinewski 1999; Heath et al. 2000; Kumar and Leone 1998).
Increased spending on planned items because of stockpiling	•Promotions can encourage stockpiling (Chintagunta 1993; Heilman, Nakamoto, and Rao 2002; Nijs et al. 2001; Pauwels, Hanssens, and Siddarth 2002). •Stockpiling when items are discounted is an effective heuristic to minimize costs (Dellaert, Golounov, and Prabhu 2005).
Increased spending on unplanned items because of a perceived windfall	•A surprise coupon on a planned item increases unplanned-item spending because savings are perceived as a windfall gain and generate a positive mood (Heilman, Nakamoto, and Rao 2002). •Windfall gains are more readily spent than even current income (i.e., Arkes et al. 1994). •A positive mood leads to increased purchases (i.e., Donovan et al. 1994).

fore, the funds are available to purchase additional quantities of planned items. As a result, we predict that there will be a positive relationship between savings on planned items before the slack is depleted and planned-item spending (stockpiling). In contrast, shoppers who have already depleted their slack are likely to seize the opportunity to make unplanned purchases instead of the more practical choice of stockpiling planned items. In summary, we posit that there will be a positive relationship between savings on planned items after the in-store slack is depleted and spending on unplanned purchases.

H_1: There is a positive relationship between planned-item savings and spending on planned items when the savings are realized before the in-store slack is depleted. However, this relationship does not manifest after the in-store slack is depleted.

H_2: There is a positive relationship between planned-item savings and spending on unplanned items when the savings are realized after the in-store slack is depleted. However, this relationship does not manifest before the in-store slack is depleted.

Savings on Unplanned Items

Previously, it has been assumed that offering an item at a discount may spur shoppers to make unplanned purchases (e.g., Bucklin and Lattin 1991; Cobb and Hoyer 1986; Kahn and Schmittlein 1992; Lam et al. 2001; Stern 1962). The associated inference is that the unplanned purchase represents spending that is incremental to what would have occurred on the shopping trip in lieu of the promotion. However, we again argue that it is important to consider whether the promotional savings occur before or after the in-store slack is depleted. As a result, we predict a differential impact of sales promotions that occur before the in-store slack is depleted and those that occur after the in-store slack is depleted (as we did for savings on planned items).

Because the shopper is mentally prepared to spend the money allocated to in-store slack on unplanned items during the current trip, we argue that a sales promotion encountered before the in-store slack is depleted may simply serve to redirect which items or how many items the shopper purchases with the in-store slack. For example, imagine that Janice plans to spend a total of $75 on her shopping trip, with $30 of this amount being in-store slack. Therefore, we would predict that Janice will spend approximately $30 on unplanned items. In Scenario A, Janice does not encounter any specials, so she buys 10 unplanned items at the average normal cost of $3.00. In Scenario B, Janice encounters an in-store special in which an item normally priced at $3.50 is offered for $3.00. Janice decides to purchase this unplanned item on promotion, but she does not purchase one of the other unplanned items (offered at the normal price of $3.00) that she would have in Scenario A. In Scenario C, Janice encounters several in-store specials on items that she did not plan to purchase. In this situation, Janice buys 12 unplanned items at an average cost of $2.50. In all three scenarios, Janice spends $30 dollars on unplanned purchases. As this example illustrates, we predict that, on average, there is no relationship between savings on unplanned items before the in-store slack is depleted and unplanned-item spending.

Although shoppers may attempt to restrain spending after their mental budget is depleted (Heath and Soll 1996), this is not to say that consumers never exceed their mental budgets. Shoppers may ultimately exceed their mental budgets if they experience a self-control failure (i.e., Muraven and Baumeister 2000), or they may manipulate their mental budgets to justify decisions (Cheema and Soman 2006). For example, a consumer could justify exceeding a mental budget if a good price on an item warrants borrowing from a future trip budget. Therefore, we expect that promotional savings may tempt people to purchase unplanned items after they exceed their in-store slack. In this case, savings on unplanned items would be positively related to unplanned-item spending because the purchase would be incremental. Thus, we expect that there is a positive relationship between savings on unplanned items after the in-store slack is depleted and unplanned-item spending.

H_3: There is a positive relationship between unplanned-item savings after in-store slack is exceeded and unplanned-item spending. However, this relationship does not manifest for unplanned-item savings before the in-store slack is depleted.

Moderating Effect of Income

H_1–H_3 predict that the impact of savings depends on whether the savings are realized before or after the in-store slack is depleted. However, these relationships may also vary across levels of household income. For example, H_1 predicts that a positive relationship between savings on planned items and planned-item spending will occur if the consumer is enticed to stockpile the promoted item. When considering the potential for stockpiling, however, it is important to note that a mental budgeting perspective suggests that shoppers' ability to stockpile can be constrained by their mental budget. This is especially true for lower-income shoppers, for whom budgets tend to be more binding (Thaler 1999). Higher-income households are more able to exceed their mental budgets because they can more easily dip into the larger amounts they have allocated to other discretionary accounts, such as eating out (Lee and Brown 1986), consumer durables (Mueller 1963), and savings (Dynan, Skinner, and Zeldes 2004). Because of more flexible budget constraints, we expect that higher-income households will be more likely to take advantage of the promotion by exceeding their budgets and stockpiling. Conversely, lower-income households can take the opportunity to switch up to a higher-tier brand (i.e., Blattberg and Wisinewski 1999; Heath et al. 2002; Kumar and Leone 1998) while still staying within their mental budget. Thus:

H_4: Before depletion of in-store slack, the impact of planned-item savings on planned-item spending is greater for higher-income households because of their greater likelihood of stockpiling.

It is less clear whether income will have the same moderating impact on the relationship between savings on planned items after the slack is depleted and unplanned-

item spending (H_2). According to Heilman, Nakamoto, and Rao (2002), the effect of planned-item savings on unplanned-item spending is due to the mood effects associated with a psychological windfall. Although higher-income households can spend more because they are less constrained by their budgets, it is likely that they will be less excited about the windfall associated with the savings on planned items. Therefore, we do not formally hypothesize that income moderates the relationship between planned-item savings after slack is depleted and unplanned-item spending, but we empirically investigate the relationship.

H_3 predicts that unplanned-item savings after shoppers exceed their slack could entice increased spending if shoppers justify transferring funds from another budget category, borrow from a future budget period, or simply succumb to impulse. Because higher-income shoppers have more discretionary funds (Lee and Brown 1986; Mueller 1963), it is easier for them to justify exceeding their mental budget. If consumers are acting purely on impulse without regard for their mental budgets, income should not play a moderating role. Conversely, if consumers try to exert self-control to adhere to their budgets, higher-income shoppers will have less motivation to do so and therefore will be more likely to spend more. Thus:

H_5: The higher the household income, the greater is the impact of unplanned-item savings after the in-store slack is depleted on unplanned-item spending.

Study

To test our hypotheses, we conducted a field study in which 400 customers were systematically intercepted as they entered two grocery stores located in a southwestern U.S. city. We selected every tenth shopper or one every five minutes, whichever came first. Respondents were offered a $10 incentive that they received at the end of the trip (for future use to mitigate a windfall effect). Before they entered the store, respondents were first asked what items they planned to purchase and to indicate the purchase quantity of each item. They were then asked to estimate how much they intended to spend in total and to estimate the cost of the items they planned to purchase (i.e., the itemized portion of the mental budget). This approach enables us to measure the respondents' in-store slack by subtracting the itemized portion from the total they planned to spend. Although previous research has demonstrated that this research format does not affect the amount that shoppers spend (Kollat and Willett 1967; Stilley, Inman, and Wakefield 2010), to be conservative, we assessed whether the survey methodology influenced spending. Specifically, we compared each shopper's spending on the survey trip with his or her spending on similar trips using data from the chain's frequent-shopper program. To facilitate relevant comparisons, we compared the survey trip with the average amount spent on trips of the same type (major versus fill-in) during the preceding six-month period. Following Kahn and Schmittlein (1989, 1992), we characterized a trip as a major trip or a fill-in trip on the basis of each shopper's spending distribution. Adequate data were available for 297 respondents. For this set of respondents, the results of this analysis indicate that there is not a statistically significant difference between the amount spent on the day of the survey (M = $70.21) and the preceding six-month mean (M = $67.95; F = 1.70, $p > .10$).

After respondents completed the initial questions, they were provided with a handheld scanner gun and instructed how to scan the bar code of each item as they placed it in their carts or baskets. This methodology enables us to record the order of purchases and, therefore, to determine which items were purchased before and after the in-store slack was exceeded. A pretest (N = 73) indicated that use of the scanner did not have a significant impact on the amount spent (t = .32, $p > .10$). After the respondents checked out, they returned to the interviewer, who then downloaded the scanner gun information. Respondents completed an exit interview, which contained questions such as demographics. Finally, the interviewer made a copy of each respondent's receipt so that we had a record of the items purchased, amount spent, and price of each item purchased. Respondents also provided their frequent-shopper card numbers, which enabled us to access their shopping histories.

Sample

Of the 400 respondents, 83 had missing responses, missing receipts, or incomplete scanner files, which left 317 respondents available for analysis (78% were women). The average household size was 2.96 people. Next, we describe the measures used for each construct. Table 2 provides the distribution of household income.

Measures

Itemized budget (ITZ). After reporting the items they planned to purchase, respondents estimated how much they expected to spend on their list of planned items.

In-store slack (ISS). We calculated this measure by subtracting the itemized portion from the total respondents planned to spend.

Number in household (HH). Respondents indicated the number of people in their household.

Income (INC). During the exit interview, respondents indicated their annual household income. To increase the response to such a personally sensitive question, respondents were provided with seven choices: <$20,000; $20,000–$39,999; $40,000–$59,999; $60,000–$79,999; $80,000–$99,999; $100,000–$119,999, and $120,000+. Using this approach, we received a 97% response rate for the income question. We then created a continuous income

TABLE 2
Income Distribution

Household Income Level	Percentage of Sample
Less than $20,000	18.6
$20,000–$39,999	22.4
$40,000–$59,999	22.4
$60,000–$79,999	13.6
$80,000–$99,999	10.1
$100,000–$119,999	5.1
$120,000+	7.9

variable by taking the midpoint for each of the income categories.

Spending on planned items (SPEND_P). After respondents checked out, interviewers photocopied their receipts. The net sales price of all planned items was summed for each shopper.

Spending on unplanned items (SPEND_UP). Any items that had not been listed in the initial interview were coded as unplanned items. The net sales price of all unplanned items was summed for each shopper.

Savings on planned items before in-store slack depleted (SPB). Frequent-shopper data were used to determine which items were purchased at a promotional savings. Specifically, the purchase price of each item was compared with the price of the same item from the prior week. Previous research has indicated that a consumer's reference price is best represented as a range (Kalyanaram and Little 1994) and, therefore, that a price reduction needs to be of significant magnitude before the consumer perceives it as a deal (Monroe and Lee 1999; Vanhuele and Drezé 2002). Because our focus is on promotions that the shopper would recognize as a deal, we classify an item as being on promotion only if the purchase price was at least 10% less than the prior price (see Alba et al. [1999], who suggest indifference for discounts less than 10% on grocery items). We then calculated savings per item by subtracting the difference between the present purchase price and the prior price.

We sorted all items in the order of purchase on the basis of the handheld scanner records. We then calculated a cumulative variable to represent the amount of unplanned-item spending that occurred when each item was selected. If the cumulative variable had not yet exceeded the shopper's in-store slack when the promoted item was selected, we classified the savings as occurring before the in-store slack was depleted. The variable, savings on planned items before the in-store slack was depleted (SPB), represents the sum of all such purchases by the respondent.

Savings on planned items after in-store slack depleted (SPA). We calculated this measure as we did for SPB, except that it represents the sum of all the savings that the respondent realized on planned items that were purchased after depleting his or her in-store slack.

Savings on unplanned items before in-store slack depleted (SUB). We calculated savings for each unplanned item as we did for savings for each planned item. Again, the items were classified as being selected before or after the shopper's in-store slack was depleted. The variable, savings on unplanned items before in-store slack depleted (SUB), represents the sum of all savings on unplanned items selected by a shopper before depleting his or her in-store slack.

Savings on unplanned items after in-store slack depleted (SUA). We calculated this measure as we did for SUB, except that it is the sum of all the savings on unplanned items that were selected after the shopper depleted his or her in-store slack.

Amount spent on extra planned items (EXTRA_PLAN). During the initial interview, respondents were asked to list all the items they planned to buy, including intended purchase quantity for each item. We used respondents' receipts to identify whether the actual purchase quantity exceeded the intended purchase quantity. If so, we coded these items as extra planned items. We summed the total amount spent on extra planned items for each respondent.

Model

To test our hypotheses, we specify a series of regression equations with the dependent variables of planned-item spending and unplanned-item spending.[2] Because the error terms (ε_1, ε_2) may be correlated with each other, we employ seemingly unrelated regression, which produces more efficient coefficients than traditional least squares estimation techniques (Johnston and DiNardo 1997; Zellner 1962).

$$\text{(1)}\quad \text{SPEND\_P} = \beta_0 + \beta_1\text{ITZ} + \beta_2\text{SPB} + \beta_3\text{SPA} + \beta_4\text{HH} + \beta_5\text{INC} + \beta_6(\text{SPB} \times \text{INC}) + \beta_7(\text{SPA} \times \text{INC}) + \varepsilon_1.$$

$$\text{(2)}\quad \text{SPEND\_UP} = \lambda_0 + \lambda_1\text{ISS} + \lambda_2\text{SPB} + \lambda_3\text{SPA} + \lambda_4\text{SUB} + \lambda_5\text{SUA} + \lambda_6\text{HH} + \lambda_7\text{INC} + \lambda_8(\text{SPB} \times \text{INC}) + \lambda_9(\text{SPA} \times \text{INC}) + \lambda_{10}(\text{SUB} \times \text{INC}) + \lambda_{11}(\text{SUA} \times \text{INC}) + \varepsilon_2.$$

Results

Descriptive results. One key premise of this article is that shoppers have in-store slack in their mental budgets, as Stilley, Inman, and Wakefield (2010) demonstrate. That is, we expect that consumers leave room in their trip budgets to make unplanned purchases. Therefore, we first examine the degree to which this holds in our sample. As Table 3, Panel A, shows, the average total trip budget is $66.45. Of this amount, $46.08 is accounted for by planned items at the product or brand level (i.e., the itemized portion). Therefore, the average amount of in-store slack is the remaining $20.37 ($66.45 – $46.08).[3] Furthermore, in support of our mental budgeting framework, we find that the average shopper exceeded his or her total mental budget only by 5% (actual spend of $69.84 versus planned spend of $66.45). Table 3, Panel B, provides the correlation between our measures, and Panel C describes the number and type of promotions.

Base model. Our hypotheses are also based on the assumption that the impact of promotional savings varies depending on whether the savings occur before or after the shopper's slack is depleted. To first assess this overall assumption, we compare our proposed model with a base

[2]We assessed whether the residuals followed a normal distribution using normal q–q plots and did not find significant departures from normality for the residuals from either Equation 1 or Equation 2.

[3]As with any consumer behavior, there is heterogeneity with regard to the practice of having slack. Of the respondents in the study, 27% (N = 87) had no slack, with an additional 6 respondents having less than $5 slack. Rerunning the analysis without these shoppers yields the same pattern of results.

TABLE 3
Study Summary Statistics

A: Average Mental Budgets and Spending

	M (SD)
Total Trip Budget	$66.45 (49.09)
Itemized budget	$46.08 (33.56)
In-store slack	$20.37 (28.72)
Total Amount Spent	$69.84 (49.22)
Amount spent on planned purchases	$35.25 (25.24)
Amount spent on unplanned purchases	$34.59 (34.35)

B: Correlation Matrix[a]

	1	2	3	4	5	6	7
1. Itemized budget	1.00						
2. In-store slack	.24	1.00					
3. Income	.29	.20	1.00				
4. SPB	.12	.15	.05	1.00			
5. SPA	.24	–.14	.01	.11	1.00		
6. SUB	.17	.44	.10	.23	–.05	1.00	
7. SUA	.09	–.13	–.04	–.03	.20	–.06	1.00

C: Percentage of Items Bought on Promotion[b]

Position of Savings Relative to Slack	Planned Items	Unplanned Items
Before slack depleted	31.6%	24.2%
After slack depleted	22.5%	21.8%

[a]All correlations greater (less) than ±.11 are significant at $p < .05$. N = 317.
[b]N = 522 items on promotions, which represents 5.33% of the total number of items purchased.

model. The base model includes all the variables and interactions specified in Equations 1 and 2, except that no distinction is made between before and after in-store slack is depleted (i.e., we sum planned-item savings before and after slack is exceeded and sum unplanned-item savings before and after slack is exceeded). The results of the base model appear in Table 4. Incremental F-tests indicate that the proposed model explains significantly more variance than the base model for both the dependent variables of planned-item spending ($F(2, 309) = 4.83$, $p < .01$) and unplanned-item spending ($F(4, 305) = 8.03$, $p < .01$). This supports our thesis that it is useful to distinguish between savings before and after the shopper's slack is depleted. Thus, although there is likely to be some heterogeneity in shoppers' price awareness and attentiveness to their in-store slack, this test suggests that, on average, shoppers pay attention to their slack.

Proposed model. The results of the analysis appear in Table 5. Consistent with Stilley, Inman, and Wakefield (2010), there is a positive, statistically significant relationship between the itemized budget and planned-item spending ($\beta_1 = .61$, $p < .01$) and between the in-store slack and unplanned-item spending ($\lambda_1 = .92$, $p < .01$). We now present the results that test our hypotheses.

H_1 predicts that there will be a positive relationship between planned-item savings and spending on planned items only when the savings are realized before the shopper's in-store slack is depleted. Consistent with this hypothesis, we find a significant, positive relationship between planned-item savings before slack depletion and planned-item spending ($\beta_2 = 4.63$, $p < .01$) but no relationship between planned-item savings after slack depletion and planned-item spending ($\beta_3 = -1.17$, $p > .10$). That is, each dollar saved on planned items purchased before the in-store slack is spent leads to an additional $4.63 in planned-item spending. In the next section, we test our hypothesis that this is driven by stockpiling (H_4).

For unplanned-item spending, we find the pattern of results predicted in H_2. Specifically, there is no relationship between planned-item savings before slack depletion and unplanned-item spending ($\lambda_2 = -2.55$, $p > .10$) but a significant, positive relationship between planned-item savings after slack depletion and unplanned-item spending ($\lambda_3 = 10.03$, $p < .01$). This suggests that savings on planned items are absorbed into the in-store slack if the slack has not already been depleted. After the in-store slack has been spent, each dollar saved on planned items generates a $10 average additional spend on unplanned items. Although the

TABLE 4
Base Model Results

	Spending on Planned Items		Spending on Unplanned Items	
	Parameter Estimate	t-Value	Parameter Estimate	t-Value
Intercept	6.46***	4.48	15.05***	8.88
Itemized budget (ITZ)	.61***	23.14	—	—
In-store slack (ISS)	—	—	.83***	17.69
Savings on planned items (SP)	1.20*	1.89	3.18*	–1.94
Savings on unplanned items (SU)	—	—	2.28**	2.31
Household size (HH)	.79	1.41	.99	1.13
Income (INC)	–.03	–1.09	.08**	1.97
SP × INC	.09***	2.95	–.03	–.55
SU × INC	—	—	.02	.81

*$p < .10$.
**$p < .05$.
***$p < .01$.

TABLE 5
Model Results

	Equation 1: Spending on Planned Items		Equation 2: Spending on Unplanned Items	
	Parameter Estimate	t-Value	Parameter Estimate	t-Value
Intercept	6.29**	4.36	13.17**	7.89
Itemized budget (ITZ)	.61**	23.17	—	—
In-store slack (ISS)	—	—	.92**	18.90
Savings on planned items before slack depleted (SPB)	4.63**	3.03	–2.55	–1.06
Savings on planned items after slack depleted (SPA)	–1.17	–.69	10.03**	3.97
Savings on unplanned items before slack depleted (SUB)	—	—	–.06	–.04
Savings on unplanned items after slack depleted (SUA)	—	—	5.94**	4.10
Household size (HH)	.81	1.46	1.01	1.19
Income (INC)	–.03	–1.11	.06	1.51
SPB × INC	.08**	2.01	–.03	–.56
SPA × INC	.08	1.42	.03	.37
SUB × INC	—	—	.02	.48
SUA × INC	—	—	.09*	2.25

*$p < .05$.
**$p < .01$.

magnitude of this result may seem unusually large, it is in line with the $7.68 increase per $1.00 coupon that Heilman, Nakamoto, and Rao (2002) found. Although our result appears larger, Heilman, Nakamoto, and Rao do not consider in-store slack. Therefore, their results are most likely tempered by savings on planned items that occurred before the shopper's in-store slack was depleted (which we find has no impact on unplanned-item spending).

In summary, when savings on planned items are realized before the slack is depleted, it appears that those savings are solely used to increase planned-item spending. As we test subsequently, this result is consistent with a stockpiling explanation. Notably, there is no associated decrease in unplanned-item spending, which suggests that the money used to stockpile planned items is not deducted from the in-store slack. In contrast, when savings on planned items are realized after the slack is depleted, the savings are used to purchase unplanned items, which is consistent with a psychological windfall effect explanation (Arkes et al. 1994; O'Curry and Strahilevitz 2001). These results both generalize and qualify Heilman, Nakamoto, and Rao's (2002) findings. Heilman, Nakamoto, and Rao focus exclusively on in-store coupons for planned items, while our results generalize the findings to savings on planned items in general. Furthermore, we provide evidence that the windfall effects occur only after the shopper's in-store slack has been depleted.

H_3 predicts that savings on unplanned items will increase unplanned-item spending only when those savings occur after the slack is depleted. We also find support for this hypothesis. Savings before slack was depleted did not have a significant impact on unplanned-item spending ($\lambda_4 = -.06$, $p > .10$), but savings on unplanned items after the slack was depleted had a positive relationship with unplanned-item spending ($\lambda_5 = 5.94$, $p < .01$). This finding suggests that for every dollar saved on unplanned items after the in-store slack is depleted, unplanned-item spending increases by $5.94 on average. Notably, this increase in unplanned spending is significantly less than the increase of $10.03 associated with savings on planned items after the slack is exceeded ($F = 9.46$, $p < .01$). These findings have important implications. They suggest that attractive promotions for products encountered later in the trip spur unplanned spending, while promotions on unplanned items encountered early in the trip only serve to direct the use of the shopper's in-store slack. Although we do not have access to cost data, the finding that promotions on unplanned items before the slack is depleted simply are absorbed into slack suggests that, given the discount, retailers' profits are most negatively affected by promotions on unplanned items early in the typical trip path.

Income results. Income does not exhibit a main effect on either planned-item spending ($\beta_5 = -.03$, $p > .10$) or unplanned-item spending ($\lambda_7 = .06$, $p > .10$). However, income is positively correlated with the itemized portion of the budget ($\rho = .29$, $p < .01$), the amount of slack ($\rho = .20$, $p < .01$), and the total amount spent ($\rho = .29$, $p < .01$). Therefore, on average, the greater amount spent by higher-income shoppers is already accounted for in their mental budgets. However, we argue that certain promotions can entice shoppers to increase spending beyond their mental budgets and that these reactions depend on income.

H_4 predicts that the relationship between planned-item savings before slack depletion and planned-item spending will be stronger as household income increases. Consistent with this hypothesis, we find that the positive effect of planned-item savings before slack depletion on planned-item spending ($\beta_2 = 4.63$, $p < .01$) is qualified by a positive, significant interaction between income and planned-item savings before slack depletion ($\beta_6 = .08$, $p < .05$). To further

explore the significant interaction between planned-item savings before slack depletion and income, we follow the post hoc probing procedure that Aiken and West (1991) recommend. Specifically, we first calculate high and low income levels by adding or subtracting the standard deviation from the mean. We then conduct simple slope analysis, which examines the relationship between planned-item savings before slack depletion and planned-item spending at these different income levels. When income is low (M – 1 SD = $17,000), the slope is 1.75 (4.63 – .08 × 36), which is not significantly different from 0 ($p > .10$). This result is consistent with the idea that a sales promotion on a planned item encourages consumers to switch up to a higher-tier brand that they can buy at the same net price (i.e., Blattberg and Wisniewski 1991; Heath et al. 2000; Kumar and Leone 1988). In contrast, when income is high ($89,000), the slope increases to 7.51 (4.63 + .08 × 36). This suggests that for every dollar saved on planned items, high-income shoppers spend $7.51 more on planned items. This finding is consistent with our argument that promotional savings can drive increased purchase quantities of the promoted items (i.e., stockpiling) but that this effect is greater for higher-income shoppers because they are less constrained by their budgets.

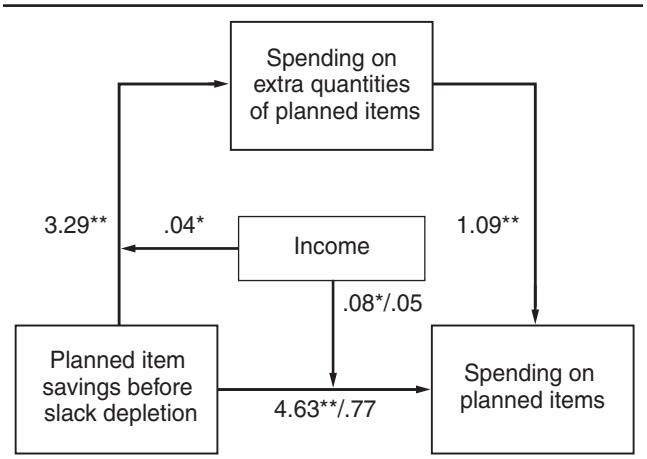
We then conducted additional analysis to provide evidence that while lower-income households were buying higher-tier brands than they otherwise would have, higher-income households were stockpiling. We conducted a mixed model in which the dependent variable was the natural log of the original price of the goods and the independent variables were income, a dummy variable that equaled 1 if the product was on promotion and 0 if otherwise, and the two-way interaction between income and the promotion variable.[4] The results indicate that there was a significant effect of income ($\beta = .0016$, $p < .01$), promotion ($\beta = .08$, $p < .05$), and the two-way interaction between income and promotion ($\beta = -.0035$, $p < .01$). Using Aiken and West's (1991) procedure detailed previously, we conducted additional tests that indicated that for low-income households, the original price of items bought on promotion is higher than for items not on promotion ($\beta = .20$, $p < .01$). However, for high-income households, there is not a significant difference from the original prices associated with promotions ($\beta = -.05$, $p > .10$). This is consistent with our argument that a promotion is more likely to encourage lower-income households to switch to a higher-tier brand.

Next, we performed mediational analyses (Baron and Kenny 1986) to empirically test whether stockpiling mediates the interaction between savings on planned items before slack depletion and income. We summarize the results of the mediation in Figure 2. As we indicated previously, there is a significant main effect of planned-item savings before slack depletion ($\beta = 4.63$, $p < .01$) and a significant interaction of planned-item savings before slack depletion and income ($\beta = .08$, $p < .05$) for the dependent variable of planned-item spending. There is also a significant main effect of planned-item savings before slack depletion ($\beta = 3.29$, $p < .01$) and a significant interaction of planned-item savings before slack depletion and income ($\beta = .04$, $p < .05$) on the mediating variable of spending on extra quantities of planned items. We then included spending on extra quantities of planned items (the proposed mediator) as a predictor of planned-item spending. Importantly, this model indicates that spending on extra quantities of planned items is a significant predictor ($\beta = 1.09$, $p < .01$), but both the main effect of planned-item savings before slack depletion ($\beta = .77$, $p > .10$) and its interaction with income ($\beta = .05$, $p > .10$) become nonsignificant. The Sobel's Z confirms that the mediation by spending on extra quantities of planned items is significant ($Z = 2.26$, $p < .05$). These results indicate that promotional savings on planned items lead to stockpiling of planned items, but the effect is obtained only for households with above-average income.

In support of H_5, we find a positive, significant interaction between income and unplanned-item savings after the slack is exceeded on unplanned-item spending ($\lambda_{11} = .09$, $p < .05$). To further explore this interaction, we again follow the post hoc probing procedure that Aiken and West (1991) recommend. When income is low (M – 1 SD = $17,000), the slope is 2.70 (5.94 – .09 × 36), which is only marginally greater than 0 ($p < .10$). This means that for low-income shoppers, there is only directional evidence that savings on unplanned items can entice them to make an additional purchase after slack is exceeded. In contrast, when income is high ($89,000), the slope increases to 9.18 (5.94 + .09 × 36), indicating that these shoppers spend $9.18 for every dollar saved. This suggests that higher-income households are more easily enticed to exceed their mental budgets and buy more unplanned items because their budgets are less constraining.

In addition to the hypothesized interactions, we included interactions between all the other savings variables and income. None of these other interactions were significant (all $p > .10$). Two of the null results are particularly notable. First, we did not find evidence that income moder-

FIGURE 2
Results of Mediation



*$p < .05$.
**$p < .01$.

[4]We calculated original price by adding the savings to the sales price. We then log-transformed the variable to normalize the distribution.

ates the relationship between planned-item savings after slack depletion and unplanned-item spending posited in H_2 ($\lambda_7 = .03$, $p > .10$), which indicates that the magnitude of this increase in unplanned-item spending does not vary significantly with income. As we discussed previously, there may be two conflicting forces operating here. On the one hand, in general, budgets are less constraining for higher-income households (Thaler 1999); on the other hand, higher-income households are less likely to be as susceptible to the windfall effect associated with savings on planned items (Heilman, Nakamoto, and Rao 2002). Second, there is not a significant interaction between income and unplanned-item savings before slack is depleted and unplanned-item spending ($\lambda_{10} = -.03$, $p > .10$), which indicates that savings on unplanned items are simply absorbed into the slack regardless of income.

Additional Analysis: Mental Budget Uncertainty

Although the average shopper stays close to his or her mental budget, it may be important to consider that people vary in the degree of uncertainty about spending expectations for a given trip. One approach would be to have the respondents directly estimate their uncertainty, but people tend to have difficulty calibrating confidence judgments (i.e., Fischer, Luce, and Jia 2000; Lichenstein, Fischoff, and Phillips 1982). Therefore, we estimate each respondent's mental budget uncertainty using variability in trip size based on the frequent-shopper data from the six months preceding the survey. To account for the notion that shoppers make different types of grocery trips (Kahn and Schmittlein 1989, 1992), we first classify each shopping trip as either a major trip or a fill-in trip depending on whether the amount spent on each trip is above or below the midpoint of the shopper's spending distribution.[5] For our measure of budget uncertainty, we then calculate the coefficient of variation (SD/M) for trips that match the shopper's trip type on the day of the survey. For example, if a respondent was on a major trip on the day of the survey, his or her budget uncertainty is the coefficient of variation of the amount spent on major trips over the last six months.

We then reestimate Equations 1 and 2 using weighted least squares regression in which the weight is the reciprocal of the budget uncertainty. This approach places greater weight on observations with greater budget certainty.[6] The results of this weighted analysis mirror the unweighted results in Table 5 with one exception: The two-way interaction between savings on unplanned items after in-store slack depleted and income becomes only marginally significant (b = .08, $p < .10$) instead of significant at the .05 level as it was in the unweighted model (b = .09, $p < .05$). A potential explanation is that budget certainty is related to income; however, there is not a significant correlation between budget certainty and income ($p > .10$). Instead, the results suggest that higher-income households with low budget certainty are partially driving the interaction between savings and income. The intuition here is clear. Shoppers with greater budget certainty are more likely to resist making additional purchases after they exceed their budget.

Discussion

While a significant body of research has examined the impact of promotions on brand choice within a category (i.e., Bell, Chiang, and Padmanabhan 1999; Blattberg and Neslin 1993; Gupta 1988; Narasimhan, Neslin, and Sen 1996), less attention has been paid to the basket-level impact of promotional savings, a topic of particular interest to retailers. Using a field study, we address this gap in the literature and show that the impact of savings depends on whether they occur before or after the shopper's in-store slack is depleted and on item type (planned or unplanned) and household income. To our knowledge, we are the first to employ a handheld scanner to record the order in which purchases are selected. Combining this methodology with a mental budgeting perspective provides several key contributions with implications for researchers and managers.

We find that the impact of savings on planned items and unplanned items depends on whether the savings are encountered before or after the shopper's in-store slack is depleted. When slack remains, savings on planned items are associated with increased planned-item spending as a function of income. We show that the underlying mechanism is stockpiling of the promoted planned item by higher-income households, while lower-income households appear to switch to a higher-tier brand with no net impact on spending. This stockpiling behavior is a rational process on the part of the consumer (Dellaert, Golounov, and Prabhu 2005). After the slack is depleted, the results indicate that unplanned-item spending increases by $10 for every dollar saved on planned items, regardless of income. Consistent with Heilman, Nakamoto, and Rao (2002), the findings show that savings on planned items can create a psychological windfall effect, leading to an increased purchase of unplanned items greater than the amount of the windfall. However, the findings suggest that this windfall effect is attenuated (or even eliminated) if the shopper already has funds earmarked for miscellaneous unplanned purchases.

Similarly, we find that savings on unplanned items can lead to higher spending on unplanned items, increasing with income, but only when those savings occur after the slack is exceeded. These findings are consistent with the idea that promotions on unplanned items before the in-store slack is exceeded simply serve to redirect which items the in-store slack is used to purchase rather than increase the total amount spent. We find that the results are robust to variations in budget certainty, with the exception of the increased

[5]Because we screened for shoppers who were picking up more than just "a couple items," we eliminated any comparison shopping trips with a basket size of less than $10.00. We also removed pharmacy and gasoline purchases from the spending distribution because they would not be relevant to respondents' grocery spending expectations.

[6]It might be expected that larger variation (more uncertainty) is associated with a larger slack. However, the coefficient of variation is only marginally correlated with slack ($\rho = .11$, $p < .10$). This supports the notion that shoppers have adopted the use of slack as a routine approach for allowing for unplanned purchases while sticking to a budget and that it does not necessarily mean that they have uncertainty regarding the amount they will spend.

spending on unplanned items by higher-income households. This suggests that under conditions of high budget certainty, high-income shoppers are still more likely to exceed their budgets for easily justifiable purchases, such as stockpiling planned items, but are equally likely to exceed their budgets for unplanned items.

The finding that higher-income households have a greater tendency to stockpile differs from previous research, which has found no significant effect of income on stockpiling behavior (Bell, Chiang, and Padmanabhan 1999; Neslin, Henderson, and Quelch 1985). There are several potential explanations for why we find significant results when previous research has failed to do so. First, Neslin, Henderson, and Quelch's (1985) analysis is limited to two product categories, and stockpiling tendencies have been shown to vary across product categories (Bell, Chiang, and Padmanabhan 1999). Second, Bell, Chiang, and Padmanabhan (1999) conduct their study at the brand level rather than at the individual level, so income is coded as the modal income of consumers who purchase the brand. Third, the current analysis differentiates between planned and unplanned items, while Neslin, Henderson, and Quelch and Bell, Chiang, and Padmanabhan simply examine purchase quantities in general. Finally, the handheld scanner methodology we employ enables us to demonstrate that the incidence of stockpiling depends on whether the savings occur before the in-store slack has been spent.

Implications for Managers

The findings offer several insights to guide shopper marketing strategies. Table 6 summarizes the implications of each of the findings. In general, we show that the impact of promotional savings depends on whether the item is purchased before or after the shopper's slack is exceeded. Although it will be difficult for retailers to ascertain exactly when the slack becomes depleted for each shopper, one proxy is position in the store. Promotions should be placed early in a typical store pattern to target consumers with slack remaining and later to target consumers who have depleted their slack. Because the findings also depend on whether items are planned or unplanned, managers need to familiarize themselves with which items tend to be of which type. Accordingly, Panels A and B in Table 7 list the categories with the highest percentage of planned and unplanned items, respectively (see also Point of Purchase Advertising Institute 1995).

The findings suggest that promotions on planned items are effective in generating incremental sales; however, the nature of the incremental items, as well as quantity purchased, varies depending on whether the savings are realized before or after the consumer's in-store slack is depleted. Stockpiling occurs primarily among higher-income shoppers when the item is encountered before their slack is depleted. Under these same conditions, lower-income shoppers tend to switch up to a higher-tier brand but do not spend additional funds. Therefore, manufacturers and retailers should try to place stockpiling-inducing promotions of higher-tier brands, such as buy-one-get-one-free promotions, earlier in the typical store traffic pattern, when shoppers are more likely to have in-store slack remaining. Managers should also explore messages that help lower-income households think long-term and encourage them to stockpile.[7] Conversely, stockpiling is less desirable for deep-discount ("loss-leader") promotions, which are offered to drive store traffic (so the item would presumably be a planned item). These promotions might be best placed later in the trip path to discourage stockpiling.

Although these guidelines may be useful in developing more successful stockpiling promotions, the results also

[7]Although it might be speculated that lower-income households simply do not have funds to exceed their budget, we find a positive relationship between planned-item savings after slack is exceeded and spending on unplanned items. This suggests that their budget constraints are not so strict as to rule out any additional spending.

TABLE 6
Shopper Marketing Implications

Finding	Shopper Marketing Strategy
H_1: Savings on planned items increase planned-item spending before slack is depleted but not after. ($1 ≈ $5)	•Place stockpiling-inducing promotions (e.g., buy-one-get-one-free promotions) earlier in the typical store traffic pattern. •Focus these promotions on items that tend to be planned, such as yogurt or bottled water.
H_2: Savings on planned items increase unplanned-item spending after slack is depleted but not before. ($1 ≈ $10)	•Offer promotions on planned items later in the store pattern. •Place displays of products that tend to be unplanned near promotions of these planned items.
H_3: Savings on unplanned items increase unplanned-item spending after slack is depleted but not before. ($1 ≈ $6)	•Avoid offering promotions on unplanned items early in the store pattern. Instead, consider "reminder" displays of full-price, high-margin items. •Promote items that tend to be unplanned later in the store pattern.
H_4: Higher-income households stockpile planned items before slack depleted, while lower-income households switch to higher-tier brand.	•Promote top-tier brands that appeal to higher-income households. •Lower-tier brands should consider marketing messages that help lower-income households think longer term so they will stockpile.
H_5: The greater the household income, the greater is the impact of unplanned-item savings after the in-store slack is depleted on unplanned-item spending.	•Use frequent-shopper program data to identify categories/brands with a higher penetration of higher-income households and add a secondary location later in the typical trip path.

suggest that retailers should only selectively employ these types of promotions. Instead, they should focus more on promotions on planned items that would be selected after the in-store slack is depleted because the results show that these types of promotions have a greater impact on average (~$10 versus ~$5), and this effect manifests in terms of the purchase of unplanned items. To take advantage of the windfall effect associated with savings on planned items, retailers should consider placing full-price displays of items that tend to be unplanned (see Table 7, Panel A) near the promoted item.

The results for savings on unplanned items also offer shopper marketing implications. We show that promotions on unplanned items are positively related to spending at the basket level when the item is purchased after the in-store slack is exceeded, but otherwise they are absorbed into in-store slack. This implies that though manufacturers may benefit from promotions on unplanned items before in-store slack is depleted, retailers may not fare as well by promoting unplanned items early in the store trip path. Although we do not have cost data, the lack of an increase in sales associated with price promotion suggests a decrease in retailer profit. Therefore, retailers should consider displays of full-price, high-margin unplanned items early in the store trip path. They should then promote items that tend to be unplanned later in the store trip path. When possible, these promotions should be targeted at above-average-income households because such shoppers appear to be less resistant to exceeding their mental budgets.

Limitations and Further Research

There is significant opportunity for further research regarding how the findings vary across consumer segments, promotion types, product categories, and retailers. First, a future study could explore whether consumers whose slack is spent primarily on "forgotten needs" are more differentially influenced by promotional savings than those whose slack is spent primarily on "unplanned wants." Relatedly, researchers should consider moderators beyond income, such as payment method. Second, there is an opportunity to study the impact of in-store slack on different types of price promotions examined in recent research (i.e., Saini, Rao, and Monga 2010; Tsiros and Hardesty 2010). Third, a limitation of our data set is that it does not include a measure of nonprice marketing factors that can affect sales, such as amount of shelf space, displays, and features (i.e., Bemmaor and Mouchoux 1991; Chandon et al. 2009; Inman, Winer, and Ferraro 2009). Further research could consider whether and how these nonprice promotions affect the magnitude of the spending increases we observed. Fourth, more insight is needed into which types of promoted categories are most likely to induce shoppers to exceed their mental budgets. For example, although hedonic categories may be more tempting (Shiv and Fedorikhin 1999), promotions on more utilitarian categories may also be effective because they justify manipulation of mental budgets (i.e., Cheema and Soman 2006). Finally, although we conducted the study at two stores, both stores are operated by the same grocer in the same southwestern city. Further research is needed to generalize these results to other grocery retailers and other types of retailers. For example, we would not expect a consumer who wants to purchase a television to have slack, but a shopper may have slack for routine apparel shopping trips, such as when he or she is stocking up on a back-to-school shopping trip.

Chains that are more effective at implementing these practices should be able to boost their market share. We suggest that more effective promotion planning should result in increasing total average basket revenue. If so, would such an increase come at the expense of competing stores or perhaps reduce fill-in shopping at the same or other stores? Of particular importance to the grocery chain we studied (which maintains a dominant market share) is the ability to reduce what the retailer referred to as customers "cheating on them" by shopping at other stores for fill-in purchases. Further research may be able to determine whether implementing practices suggested here leads to increased market share among selected shopper segments.

TABLE 7
Items Typically Unplanned Versus Planned

A: Categories with the Highest Percentage of Unplanned Items[a]

Category	% Unplanned	Items Purchased
1. Candy and gum	87	168
2. Ice cream, frozen yogurt, and other frozen desserts	74	149
3. Cookies	73	79
4. Shelf-stable juices and ready-to-drink juice boxes	73	171
5. Packaged bread, rolls, bagels, and muffins	73	70
6. Crackers	73	99
7. Baking mixes for cake, cookies, brownies, and so on	70	101
8. Ketchup, mustard, BBQ sauce, and other condiments	69	143
9. Salad dressing and mayonnaise	68	90
10. Canned fish (e.g., tuna, sardines)	64	74

B: Categories with the Highest Percentage of Planned Items[a]

Category	% Unplanned	Items Purchased
1. Pet foods	77	177
2. Fresh milk	75	178
3. Fresh meat and seafood	73	111
4. Eggs	69	90
5. Soft drinks (includes soda and ice tea)	66	351
6. Laundry detergent	63	80
7. Yogurt	61	181
8. Paper goods	60	120
9. Sparkling and nonsparkling bottled waters	59	94
10. Fresh-baked goods from in-store bakery	58	406

[a]Of categories purchased by at least 20% of respondents.

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