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Table 2 reports estimates of the paper’s key treatment effects: the effects of different overdraft messages on overdraft usage during the experiment.

Columns 1, 3, and 5 report estimates of the effect of offering a 50% discount on overdraft interest—and thereby mentioning something about the cost of overdrafting—on three different measures of overdraft usage. The row variable (2) captures this effect by comparing the performance of the three overdraft interest discount arms to the three arms that do not offer that discount. Column 1 shows that the effect on the extensive margin is negative: offering to cut the cost of overdrafting by one-half *reduces* the likelihood of overdrafting by 0.65 percentage points (SE= 0.28).

The magnitude of the effect in Column 1 is small—2 percent relative to the sample mean of 0.31—but likely economically significant, for several reasons. First, it suggests that drawing attention to overdraft costs induces upward-sloping demand. Framed differently, it suggests that messaging about costs without offering a discount—as one might contemplate as part of a pure debiasing strategy—would depress demand even more. Second, the messaging here does not mention the level of costs— again as one might contemplate as part of a pure debiasing strategy like “Beware of overdrafts at 60% APR!” Instead it offers to give back “half of the interest”. It seems plausible to think that messaging around the cost level might depress demand even more, particularly if consumers tend to underestimate add-on costs as assumed by shrouding models. Third, messaging costs are low, and hence bank strategy is sensitive to small changes in demand. Fourth, our estimates are in intention-to-treat (ITT) units, and we should keep in mind that some recipients may have ignored the messages and hence not actually been “treated”. Treatment-on-the-treated effects might be more informative for mapping the steady-state implications of our results, and they would be larger than the ITTs, but we have no good way of estimating how much larger in the context of this study.

Turning to other measures of overdraft use, Column 3 shows that the overdraft discount offer reduces the count of days with an overdraft balance, by 0.073 days (SE= 0.037 days) over the course of the experiment. This is a 3% reduction relative to the mean of 2.77 days. Column 5’s point estimate suggests a small reduction in the average daily overdraft balance (-0.11 TL on a base of 27TL) that is not statistically significant (SE =0.47). Overdraft balances are



right-skewed, and so we test sensitivity to outliers in Appendix Table 2. We find similar results across four different rules for dealing with the top 1% of overdraft balances: each of the four point estimates is small and negative.

In all, Columns 1, 3, and 5 support a key prediction of shrouding models: drawing attention to the cost of a shrouded attribute reduces the demand for it (even, in our case, when offering a 50% discount!). We confirm that this lower demand likely maps into lower profitability for the bank in Appendix Table 3, which shows that deposit account balances (checking + saving) do not increase to offset promotion costs and lost overdraft revenue with increased implicit interest.<sup>27</sup>

Columns 2, 4, and 6 report estimates for each of the four different overdraft messages relative to the two messages that did not mention overdrafts (instead mentioning only the debit card or auto-debit bill registration promotions). This specification unpacks the three different overdraft interest discount messages to test whether they have differential effects (p-values reported at the bottom of the table), and also identifies our second key result: the effect of the overdraft availability reminder that does not mention costs or offer a discount.

Comparing the three different overdraft interest discount messages, we see two interesting patterns in Columns 2, 4, and 6. First, the negative point estimate for the overdraft interest discount goes away compared to Columns 1, 3 and 5 (it actually becomes slightly positive but not statistically significant in each case), suggesting that the overdraft discount by itself does not depress demand (row 3). Second, comparing the overdraft discount (row 3) to the bundled discounts (overdraft discount + auto-debit discount in row 4, overdraft discount + debit card discount in row 5), we find the reduced demand from the overdraft interest discount only manifests itself when mentioned in tandem with the debit card discount (and to a lesser extent, the auto-debit discount). We posit a salience mechanism: using the debit card without paying attention to one's balance is exactly how one can find oneself in overdraft status without intending to do so. By bundling the two together, the consumer not only becomes increasingly aware of the price of overdraft, but is also reminded of the exact behavior to reduce, in order to reduce use of the overdraft. This is consistent with Stango and Zinman (2014), which finds that survey questions about spending control, monitoring account balances, or other bank fees induce overdraft reductions.

<sup>27</sup> Stango and Zinman (2014) also find that consumers do *not* engineer overdraft reductions by holding larger/buffer balances in their deposit accounts.

The key finding in the even-numbered columns is that the overdraft availability reminder, which does not mention overdraft costs, *increases* overdraft usage relative to the non-overdraft messages. In Column 2 we see that the availability reminder sent on September 15th increases the likelihood of overdrafting during the experiment by 9/10 of a percentage point (SE= 4/10 of a pp), or 3% relative to the sample proportion. Column 4 shows that the simple reminder increases the count of days with an overdraft balance by 5%. Column 6 shows an average daily balance increase of 0.95 TL (SE=0.70) on a base of 27 TL.<sup>28</sup> We see a similar pattern of results for the days used and balance outcomes in the first row of Table 2, which reports estimates of the effect of getting the overdraft availability reminder on August 30<sup>th</sup> relative to not getting any message on August 30<sup>th</sup>.

The demand increase from the overdraft availability reminder is consistent with the overdraft feature—and not just its cost-- being far from top of mind: reminding someone of its availability and quantity (the size of the credit limit) increases usage.

#### *4.2 Do All Promotional Discounts Backfire? No.*

Table 3 checks whether other promotional discounts backfire as well, by estimating treatment effects of the debit card and auto-debit discount offers on their targeted behaviors during the experiment. Columns 1-4 show estimates of the effects of the debit card discount messages on two measures of debit card use for point-of-sale (POS) transactions: the extensive margin (Columns 1 and 2), and the count of debit card (POS) transactions. Each of the point estimates is positive, with one marginally statistically significant, suggesting that debit card discounts, unlike overdraft interest discounts, work (weakly) as intended by the bank. Columns 5-8 show estimates of the effects of the auto-debit discount message on the extensive margin of registering a bill payment for auto-debit. Because this type of transaction is low-prevalence—only 1.4% of our sample do it during the experiment— we report probit marginal effects (Columns 7 and 8) as well as OLS estimates (Columns 5 and 6). Here again each of the point estimates is positive. Both estimators find that the bundled discount— overdraft interest discount + auto-debit discount—increases bill payment registration significantly (Columns 6 and 8). This suggests that bundled discounts have their intended effect on auto-debit enrollment, in contrast to their perverse effect (from the bank’s perspective) on overdrafting.

<sup>28</sup> We get similar results in the outlier sensitivity checks of Appendix Table 2.

In all, we find no evidence that promotional discounts targeting debit card use and auto-debit bill payments backfire, and some evidence that they increase demand as intended.

#### *4.3 Effects of Messaging Frequency on Overdrafting*

Returning to treatment effects on overdrafting, Table 4 examines the effects of the frequency treatments. Here we take the specifications in Table 2 and break out treatments by whether the bank sent any promotional messages after September 15 (odd-numbered columns), and then by the frequency of any messages subsequent to September 15 (even-numbered columns). The treatments of interest here vary only the frequency of messaging, not message content (Tables 2 and 3) or the amount of time promotional incentives are in place (Table 5).

Columns 1, 2, 5, 6, 9, and 10 suggest that demand decreases the more the bank advertises the overdraft interest discount. The point estimate for sending post-Sept 15 messages promoting the discount is more negative than the point estimate for not sending any post-Sept 15 messages, for each of the three demand measures (Columns 1, 5, and 9), with p-values for the difference of 0.446, 0.003, and 0.007.<sup>29</sup> Breaking out the post-Sept 15 messages into more versus less-frequent (every 10 vs. every 20 days), we find a bit more evidence suggesting that more intense messaging about the overdraft discount decreases demand (Columns 2, 6, and 10): the point estimate on more-frequent messages is more negative than that on less-frequent messages for each of the three overdraft usage measures (row 3 vs. row 4), although none of these differences are statistically significant.

Columns 3, 4, 7, 8, 11, and 12 suggest that demand increases the more the bank advertises overdraft availability. The overdraft availability reminder has no effect when sent on Sept 15 without follow-up messages, but strongly increases demand when the bank does send subsequent messages (row 17 vs. row 18).

All told, the results here suggest that messaging intensity reinforces the main effects we find in Table 2: messaging more depresses demand more in the case of the overdraft interest discount, and increases demand more in the case of the overdraft availability reminder.

<sup>29</sup> There is even a bit of evidence that one-shot messaging about the overdraft interest discount actually increases demand (row 1, Columns 9 and 10). We discuss some additional evidence on one-shot messaging in the next sub-section, with respect to our analysis of the duration treatment.

#### 4.4 Effects of Promotional Duration (\*Messaging Frequency) on Overdrafting

Table 5 examines another margin of messaging and promotional intensity—the “duration”, or length of time over which the bank continued to send messages and offer discounts. Short-duration campaigns lasted until November 15<sup>th</sup>, while long-duration campaigns continued until December 15<sup>th</sup>. We find little evidence that duration alone affects demand, either for the overdraft interest discount (row 1 versus row 2), or for the overdraft availability reminder (row 7 versus row 8).

Promotional intensity depends on duration *and* frequency, so we explore these interactions in the remaining columns of Table 5. Columns 2, 5, and 8 focus on the overdraft interest discount. Comparing, e.g., the most-intense promotion (row 3: long duration + messages after Sept. 15) to the least-intense promotion (row 6: short duration, no messages after Sept 15), we find lower demand for the most-intense promotion in all three cases, with p-values of 0.55, 0.15, and 0.03. Columns 3, 6, and 9 also show results for the overdraft availability reminder, and again we find bigger effects on demand—an increase in this case-- for the most-intense promotion (row 7) compared to the least-intense promotion (row 9), with p-values of 0.07, 0.25, and 0.02.

Table 4 shows a hint of evidence that one-shot messaging about the overdraft interest discount induces a normal rather than perverse demand response, and we explore that further in rows 5 and 6 of Table 5. These rows capture groups that received only one message about the discount, on Sept 15, with an offer that was good until Dec. 15 (row 5) or Nov. 15 (row 6). These one-shot messages have basically null effects on the extensive margin (Column 2), while three of the four coefficients on overdraft days and overdraft balance are positive (Columns 5 and 8), with p-values of 0.1479, 0.0446, and 0.8158. Columns 3, 6, and 9 permit the same comparison between row 5 and row 6, but with the omitted group as no mention of overdraft instead of no overdraft interest discount.

All told, we infer two qualitative findings from Table 5. First, more-intense promotions amplify the demand-depressing effect of the overdraft interest incentive and the demand-increasing effect of the overdraft availability reminder. This also implies that demand responds more normally—in relative terms at least—to less-intense price promotion. Second, there is a bit of evidence that demand responds normally, in absolute terms, to a one-shot message about the overdraft interest discount.

#### *4.5 Results for Full-Factorial Design*

The regression models estimated thus far impose some theory to group treatment cells; we also report results for each individual test cell in Appendix Table 1.

#### *4.6 Heterogeneous Effects of Overdraft Messaging?*

Shrouding models, and models of limited attention and salience like Bordalo et al (2014), predict that responses to the advertising of add-ons will vary with how well-informed and/or attentive the consumer is. For example, a well-informed and attentive consumer should respond normally to the overdraft interest discount, and weakly if at all to the overdraft availability reminder.

We construct two proxies for baseline exposure to the overdraft product and then test for whether each proxy mediates our main treatment effects. The first proxy is recent overdraft use prior to the experiment. 18% of our sample overdrafted at some point during February-August 2012. (Recall that the pre-treatment proportion overdrafting is lower than the proportion overdrafting during or post- the experiment, presumably because the bank selected clients with low pre-experiment overdraft activity for the study.) Appendix Table 4 interacts a prior use indicator with our main treatment variables and shows little evidence of heterogeneous treatment effects (p-values at the bottom of the table). The second proxy is generated by the August 30<sup>th</sup> message YK sent to half of the sample. This initial overdraft availability reminder may have provided some consumers with information and/or drawn their attention to the add-on. But Appendix Table 5 finds little evidence that the August 30<sup>th</sup> message dampens (or amplifies) the effects of subsequent messages (p-values at bottom of the table).

#### *4.7 Do Treatment Effects Persist? Post-Experiment Effects of Overdraft Messaging*

Tables 6, 7, and 8 re-estimate our primary specifications (Table 2), message frequency specifications (Table 4), and duration specifications (Table 5) on overdraft usage after the promotional campaign stops. Specifically, we measure the extensive margin and average daily balances using monthly data covering the period January-May, 2013.<sup>30</sup> (Recall that the most-intensively treated accountholders in our experiment received their last message on December 15, 2012.) We find little evidence that treatment effects persist—there are no more

<sup>30</sup> We lack daily data for the post-experiment period and hence cannot calculate our days-with-a-balance variable.

statistically significant results than one would expect to find by chance—and therefore little evidence that consumers persist with the behaviors induced by the bank’s promotions during the experiment.

## 5. Conclusion

Working with a large Turkish bank to test SMS direct marketing promotions to 108,000 existing checking account holders, we find that messages promoting a 50% discount on the overdraft interest rate *reduce* overdraft usage. In contrast, messages that merely mention overdraft availability without mentioning price *increase* usage. Neither change persists long after messages stop, suggesting that induced change in overdrafting is not habit-forming. We also find some evidence that messaging intensity reinforces the main effects of overdraft discounts and availability reminders—messaging more about the overdraft *discount* further reduces demand, while messaging more about overdraft *availability* further increases demand—and that messages offering discounts on debit card or auto-debit use along with overdraft backfire more than simply offering a discount on overdrafts. But not all messages backfire: we find some evidence that debit card and auto-debit discounts increase usage of those features, and that a one-shot message about the overdraft discount actually increases overdraft usage.

These results are consistent with the Bordalo et al (2014) model of limited memory and attention. They also support the key prediction of equilibrium shrouding models: that firms lack incentives to draw attention to, or otherwise compete on, add-on prices. However we emphasize that our study does not map directly to most shrouding models, as most shrouding models focus on competition at the customer acquisition stage rather than the post-acquisition setting we have here.

Our results also support policymakers’ increasing scrutiny of add-on features, pricing, and practices, although we emphasize that we do not conduct welfare analysis that ought motivate and guide policy interventions.

Practically speaking, our results suggest that competing on overdraft prices will *not* capture market share or increase usage, and thus will lower revenue. Although cutting overdraft prices could in principle generate more customer loyalty or reciprocity, the fact that induced overdraft behavior does not persist suggests these sorts of long-term benefits will not materialize for banks. More subtly, our results should also give pause to third parties seeking

to improve overdraft markets with messages (like social marketing campaigns) that draw attention to overdraft costs.<sup>31</sup> The lack of habit formation in our results suggests that messaging would have to be sustained to affect behavior, and the effects of various bank messages on short-term demand suggest that banks would have incentives to counter any “debiasing” campaigns with overdraft-promoting campaigns.

Opportunities for future work abound. We think the most promising direction is one that pushes towards welfare analysis. This may require far more household-level consumption and expenditure data than is typically available from administrative data alone, although the growth of electronic payments and credit bureaus suggests possibilities for complementing or substituting for survey data. Furthermore, refinements to our design could help further tease out and test across models, for instance testing promotions that mention price without cutting it, and mentioning information on price levels as well as or instead of discounts. Other key potential refinements include measuring consumer price and usage perceptions at baseline and/or endline, as well as examining how awareness and pricing of overdrafts, and other additions in consumer finance, influences customer acquisition.

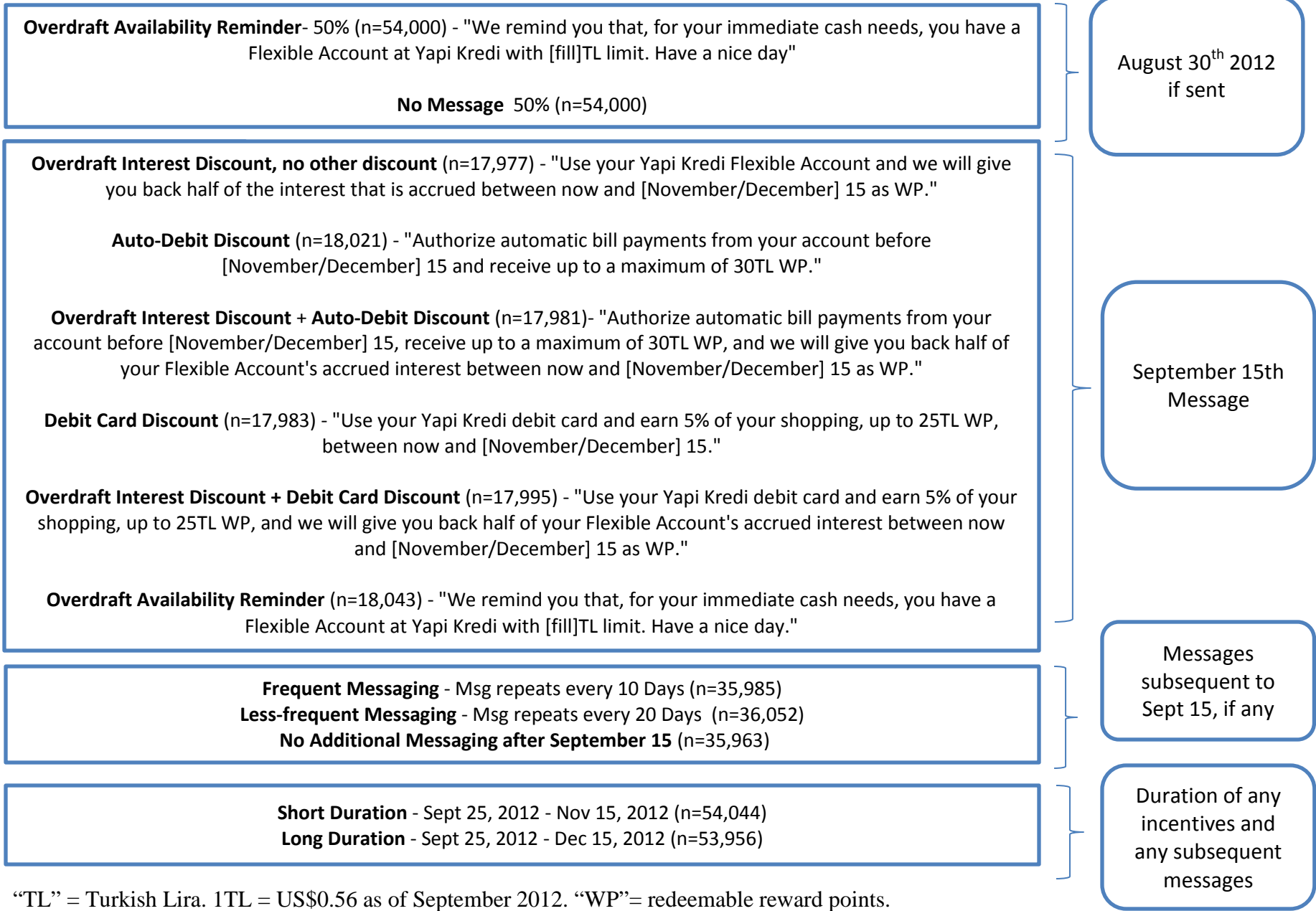
<sup>31</sup> Such third parties might include personal financial management providers, regulators, nonprofit credit counselors, and consumer advocacy groups.

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“TL” = Turkish Lira. 1TL = US\$0.56 as of September 2012. “WP”= redeemable reward points.  
 Yapi Kredi = the implementing bank.

Table 1: Orthogonality Checks

	Baseline Mean & SE	August 30	September 15	Overdraft	Auto-Debit Discount Only	September 15	Debit Card Discount Only	September 15	September 15	
		Message: Overdraft Availability Reminder	Message: Overdraft Interest Discount	Interest Discount + Subsequent Messages		Message: Overdraft Interest Discount + Subsequent Messages				Message: Overdraft Interest Discount + Subsequent Messages
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Baseline Stratification Variables (July 2012)										
Female	0.289 (0.001)	-0.0004 (0.0034)	-0.0005 (0.0034)	-0.0006 (0.0032)	-0.0009 (0.0025)	-0.0005 (0.0021)	0.0002 (0.0025)	-0.0000 (0.0025)	-0.0001 (0.0021)	-0.0003 (0.0025)
Lives in Istanbul	0.275 (0.001)	0.0000 (0.0036)	-0.0002 (0.0036)	-0.0000 (0.0034)	-0.0002 (0.0027)	-0.0001 (0.0023)	0.0001 (0.0027)	0.0002 (0.0027)	0.0004 (0.0023)	-0.0004 (0.0027)
Lives in Ankara	0.090 (0.001)	-0.0004 (0.0055)	0.0011 (0.0055)	0.0020 (0.0052)	0.0010 (0.0041)	-0.0000 (0.0035)	0.0005 (0.0041)	-0.0022 (0.0041)	-0.0013 (0.0035)	0.0006 (0.0041)
Lives in Izmir	0.050 (0.001)	-0.0009 (0.0071)	-0.0020 (0.0071)	0.0007 (0.0067)	-0.0009 (0.0053)	-0.0005 (0.0045)	-0.0010 (0.0053)	0.0012 (0.0053)	0.0012 (0.0045)	-0.0015 (0.0053)
Lives in Bursa	0.057 (0.001)	-0.0008 (0.0067)	0.0004 (0.0067)	0.0012 (0.0063)	0.0012 (0.0050)	0.0029 (0.0042)	-0.0000 (0.0050)	-0.0008 (0.0050)	-0.0002 (0.0042)	0.0028 (0.0050)
Married	0.572 (0.002)	0.0001 (0.0031)	0.0000 (0.0031)	0.0004 (0.0029)	-0.0003 (0.0023)	-0.0002 (0.0020)	0.0004 (0.0023)	0.0006 (0.0023)	0.0006 (0.0020)	-0.0002 (0.0023)
Overdraft Limit Between 1/2 and 1 monthly min wage	0.284 (0.001)	-0.0000 (0.0035)	-0.0012 (0.0035)	-0.0010 (0.0033)	0.0006 (0.0026)	0.0002 (0.0022)	-0.0012 (0.0026)	0.0003 (0.0026)	0.0000 (0.0022)	0.0001 (0.0026)
Overdraft Limit > monthly min wage omitted category: overdraft limit < 1/2 monthly min wage	0.081 (0.001)	-0.0004 (0.0058)	-0.0054 (0.0058)	-0.0047 (0.0055)	0.0018 (0.0043)	0.0019 (0.0036)	-0.0001 (0.0043)	-0.0004 (0.0043)	-0.0004 (0.0036)	-0.0043 (0.0043)
Overdraft Acct Bal: Balance below med	0.428 (0.002)	0.0042 (0.0047)	0.0016 (0.0047)	0.0004 (0.0044)	-0.0000 (0.0035)	-0.0002 (0.0029)	0.0003 (0.0035)	-0.0002 (0.0035)	-0.0002 (0.0029)	-0.0002 (0.0035)
Overdraft Acct Bal: Balance above med omitted category= zero balance	0.427 (0.002)	0.0038 (0.0046)	0.0021 (0.0046)	0.0007 (0.0044)	0.0008 (0.0035)	0.0003 (0.0029)	0.0007 (0.0035)	-0.0009 (0.0035)	-0.0008 (0.0029)	0.0001 (0.0035)
Baseline Values of Outcome Variables										
Avg Overdraft Balance Sept 2011-Apr 2012 > 0	0.184 (0.001)	0.0023 (0.0040)	-0.0014 (0.0040)	-0.0004 (0.0037)	-0.0059** (0.0030)	-0.0029 (0.0025)	-0.0001 (0.0030)	0.0049* (0.0030)	0.0024 (0.0025)	-0.0024 (0.0030)
Auto Bill Pay Registered any time Sept 2011-July 2012	0.012 (0.000)	0.0023 (0.0139)	0.0094 (0.0139)	0.0052 (0.0131)	0.0083 (0.0104)	-0.0102 (0.0088)	0.0198* (0.0104)	-0.0072 (0.0104)	-0.0034 (0.0087)	0.0046 (0.0104)
Count Debit Card POS Transactions Sept 2011-July 2012 > 0 (omitted category= zero transactions)	0.334 (0.001)	-0.0011 (0.0034)	0.0031 (0.0034)	0.0032 (0.0032)	-0.0039 (0.0025)	-0.0031 (0.0021)	-0.0026 (0.0025)	0.0040 (0.0025)	0.0026 (0.0021)	0.0049* (0.0025)
F-test of joint significance of all RHS variables		0.9369	0.6596	0.7164	0.0592	0.1136	0.2385	0.1033	0.4176	0.1976
Observations	108000	108000	108000	108000	108000	108000	108000	108000	108000	108000

Notes: Column 1 reports the baseline mean and standard error of each row variable. Columns 2-10 each report the coefficients of a single OLS regression of each treatment in the column header on each row variable.

Table 2. Effects of First Two Overdraft Messages on Overdraft Usage, During Experiment

	Overdraft Account Used		Days with Overdraft Balance		Avg Overdraft Account Balance (TL)	
	(1)	(2)	(3)	(4)	(5)	(6)
August 30 Message: Overdraft Availability Reminder (1)	0.0007	0.0007	0.0869**	0.0869**	1.0552**	1.0554**
Omitted category for (1): No August 30 Message	(0.0028)	(0.0028)	(0.0365)	(0.0365)	(0.4701)	(0.4701)
September 15 Message: Overdraft Interest Discount (2)	-0.0065**		-0.0728**		-0.1057	
Omitted cat for (2): No Overdraft Interest Discount	(0.0028)		(0.0365)		(0.4688)	
September 15 Message: Overdraft Interest Discount; No Other Discount (3)		0.0020 (0.0042)		0.0467 (0.0550)		0.6179 (0.6887)
September 15 Message: Overdraft Interest Discount; Auto-Debit Discount (4)		-0.0048 (0.0042)		-0.0564 (0.0544)		-0.1347 (0.6988)
September 15 Message: Overdraft Interest Discount; Debit Card Discount (5)		-0.0078* (0.0042)		-0.0763 (0.0541)		0.1573 (0.7236)
September 15 Message: Overdraft Availability Reminder (6)		0.0089** (0.0042)		0.1321** (0.0553)		0.9562 (0.7029)
Omitted category for (3)-(6): No Mention of Overdraft						
p-value on F-test of equality between rows (3) & (6)		0.1588		0.1824		0.6765
p-value on F-test of equality between rows (3) & (4)		0.1592		0.1035		0.3519
p-value on F-test of equality between rows (3) & (5)		0.0432		0.0509		0.5782
p-value on F-test of equality between rows (4) & (6)		0.0048		0.0030		0.1831
p-value on F-test of equality between rows (5) & (6)		0.0006		0.0010		0.3414
Mean of Dependent Variable	0.3077	0.3077	2.7676	2.7676	26.8511	26.8511
std dev	(0.46)	(0.46)	(6.05)	(6.05)	(77.97)	(77.97)
Observations	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56 USD. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable (column header) on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31, 2012.

Table 3. Effects of Auto-Debit and Debit Card Messages on Auto Debit and Debit Card Usage, During Experiment

	Any Debit Card Purchase Transactions		Count Debit Card Purchase Transactions		Any Bill Payment Registered for Auto-Debit			
	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	Probit Mfx (7)	Probit Mfx (8)
Debit Card Discount Only	0.0055 (0.0038)	0.0067* (0.0039)	0.0222 (0.0398)	0.0347 (0.0405)				
Overdraft Interest Discount + Debit Card Discount		0.0059 (0.0039)		0.0622 (0.0408)				
Auto-Debit Discount Only					0.0010 (0.0010)	0.0014 (0.0010)	0.0007 (0.0006)	0.0010 (0.0007)
Overdraft Interest Discount + Auto-Debit Discount						0.0022** (0.0010)		0.0015** (0.0007)
Mean (standard deviation) dependent variable	0.3367 (0.47)	0.3367 (0.47)	1.9872 (4.93)	1.9872 (4.93)	0.0141 (0.12)	0.0141 (0.12)	0.0141 (0.12)	0.0141 (0.12)
Omitted Category	All Other Messages	No mention of Debit Card Discount	All Other Messages	No mention of Debit Card Discount	All Other Messages	No Mention of Auto- Debit Discount	All Other Messages	No Mention of Auto- Debit Discount
Observations	108,000	108,000	107,999	107,999	108,000	108,000	108,000	108,000

Notes: OLS or Probits (marginal effects) with Huber-White Standard Errors. 1.0TL = \$.56 USD. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable on the treatment variables shown, a control for the treatment assignment in the August 30th mailer, and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31, 2012.

Table 4. Effects of Message Frequency on Overdraft Usage, During Experiment

	Overdraft Account Used				Days with Overdraft Balance				Avg Overdraft Account Balance (TL)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overdraft Interest Discount + No Messages after Sept 15 (1)	-0.0044 (0.0040)	-0.0044 (0.0040)			0.0374 (0.0525)	0.0374 (0.0525)			1.2119* (0.6885)	1.2119* (0.6885)		
Overdraft Interest Discount + Messages after Sept 15 (2)					-0.1278*** (0.0404)				-0.7636 (0.5187)			
Overdraft Interest Discount + More-Frequent Messages (3)		-0.0100** (0.0039)				-0.1690*** (0.0508)				-0.8826 (0.6639)		
Overdraft Interest Discount + Less-Frequent Messages (4)		-0.0051 (0.0040)				-0.0865* (0.0511)				-0.6447 (0.6486)		
Overdraft Interest Discount + No Other Discount + No Messages after Sept 15 (5)			-0.0037 (0.0064)	-0.0037 (0.0064)			0.1136 (0.0858)	0.1136 (0.0858)			1.5653 (1.0885)	1.5653 (1.0885)
Overdraft Interest Discount + No Other Discount + Messages after Sept 15 (6)							0.0132 (0.0631)				0.1441 (0.7838)	
Overdraft + No Other Discount + More-Frequent Messages (7)					0.0012 (0.0064)				-0.0110 (0.0834)			-0.1341 (1.0296)
Overdraft + No Other Discount + Less-Frequent Messages (8)					0.0085 (0.0065)				0.0374 (0.0835)			0.4222 (1.0411)
Overdraft Interest Discount + Auto-Debit Discount + No Messages after Sept 15 (9)			0.0026 (0.0064)	0.0026 (0.0064)			0.1158 (0.0856)	0.1158 (0.0856)			2.5741** (1.1938)	2.5741** (1.1938)
Overdraft Interest Discount + Auto-Debit Discount + Messages after Sept 15 (10)			-0.0085* (0.0048)				-0.1426** (0.0620)				-1.4901* (0.7665)	
Overdraft Interest Discount + Auto-Debit Discount + More-Frequent Messages (11)					-0.0112* (0.0064)				-0.1852** (0.0817)			-1.5869 (1.0044)
Overdraft Interest Discount + Auto-Debit + Less-Frequent Messages (12)					-0.0059 (0.0064)				-0.0999 (0.0817)			-1.3933 (1.0160)
Overdraft Interest Discount + Debit Card Discount + No Messages after Sept 15 (13)			-0.0031 (0.0064)	-0.0031 (0.0064)			0.0148 (0.0839)	0.0148 (0.0839)			0.4512 (1.0820)	0.4512 (1.0821)
Overdraft Interest Discount + Debit Card Discount + Messages after Sept 15 (14)					-0.0101** (0.0048)				-0.1216** (0.0619)			0.0111 (0.8535)
Overdraft Interest Discount + Debit Card + More-Frequent Messages (15)					-0.0112* (0.0064)				-0.1785** (0.0806)			0.0303 (1.1850)
Overdraft Interest Discount + Debit Card + Less-Frequent Messages (16)					-0.0090 (0.0064)				-0.0649 (0.0827)			-0.0083 (1.0906)
Overdraft Availability Reminder + No Msgs after Sept 15 (17)			0.0003 (0.0064)	0.0003 (0.0064)			0.0429 (0.0835)	0.0429 (0.0835)			-0.3107 (1.0420)	-0.3106 (1.0420)
Overdraft Availability Reminder + Msgs after Sept 15 (18)			0.0132*** (0.0049)				0.1765*** (0.0644)				1.5874* (0.8283)	
Overdraft Availability Reminder + More-Frequent Msgs (19)					0.0136** (0.0065)				0.2119** (0.0854)			1.4985 (1.0996)
Overdraft Availability Reminder + Less-Frequent Msgs (20)					0.0127** (0.0065)				0.1411* (0.0855)			1.6761 (1.1017)
p-value on F-test of equality between rows (1) & (2)	0.4461				0.0028				0.0066			
p-value on F-test of equality between rows (3) & (4)		0.3103				0.1838				0.7673		
p-value on F-test of equality between rows (5) & (6)			0.2359				0.2991				0.2437	
p-value on F-test of equality between rows (7) & (8)				0.9162				0.5284				0.9025
p-value on F-test of equality between rows (9) & (10)			0.1265				0.0070				0.0018	
p-value on F-test of equality between rows (11) & (12)				0.3903				0.6576				0.6809
p-value on F-test of equality between rows (13) & (14)			0.3291				0.1478				0.7266	
p-value on F-test of equality between rows (15) & (16)				0.5285				0.4237				0.8830
p-value on F-test of equality between rows (17) & (18)			0.0785				0.1623				0.1167	
p-value on F-test of equality between rows (19) & (20)												
Mean of Dependent Variable	0.3077 (0.46)	0.3077 (0.46)	0.3077 (0.46)	0.3077 (0.46)	2.7676 (6.05)	2.7676 (6.05)	2.7676 (6.05)	2.7676 (6.05)	26.8511 (77.97)	26.8511 (77.97)	26.8511 (77.97)	26.8511 (77.97)
Omitted category	No Overdraft Discount	No Overdraft Discount	No Mention Overdraft	No Overdraft Discount	No Overdraft Discount	No Mention Overdraft	No Overdraft Discount	No Mention Overdraft	No Overdraft Discount	No Overdraft Discount	No Mention Overdraft	No Overdraft Discount
Observations	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31, 2012.

Table 5. Effects of Message and Discount Duration on Overdraft Usage, During Experiment

	Overdraft Account Used			Days with Overdraft Balance			Avg Overdraft Account Balance (TL)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Overdraft Interest Discount: long duration (1)	-0.0075** (0.0034)			-0.0587 (0.0448)			-0.4292 (0.5768)		
Overdraft Interest Discount: short duration (2)	-0.0055 (0.0034)			-0.0868* (0.0444)			0.2174 (0.5773)		
Overdraft Interest Discount: long duration + messages after Sept 15 (3)		-0.0102*** (0.0040)	-0.0072* (0.0042)		-0.1392*** (0.0510)	-0.0952* (0.0541)		-1.4967** (0.6487)	-1.1777* (0.6858)
Overdraft Interest Discount: short duration+ messages after Sept 15 (4)		-0.0049 (0.0040)	-0.0020 (0.0042)		-0.1163** (0.0509)	-0.0722 (0.0540)		-0.0323 (0.6648)	0.2866 (0.7005)
Overdraft Interest Discount: long duration, no messages after Sept 15 (5)		-0.0021 (0.0052)	0.0009 (0.0054)		0.1020 (0.0705)	0.1461** (0.0727)		1.7020* (0.9366)	2.0211** (0.9619)
Overdraft Interest Discount: short duration, no messages after Sept 15 (6)		-0.0067 (0.0052)	-0.0037 (0.0054)		-0.0276 (0.0686)	0.0165 (0.0709)		0.7186 (0.8987)	1.0371 (0.9256)
Overdraft Availability Reminder: long duration+ messages after Sept 15 (7)			0.0154** (0.0065)			0.1719** (0.0857)			3.1078*** (1.1832)
Overdraft Availability Reminder, short duration+ messages after Sept 15 (8)			0.0109* (0.0065)			0.1811** (0.0853)			0.0710 (1.0162)
Overdraft Availability Reminder, no messages after Sept 15 (9)			0.0003 (0.0064)			0.0430 (0.0835)			-0.3088 (1.0420)
p-value on F-test of equality between rows (1) & (2)	0.6185			0.5849			0.3365		
p-value on F-test of equality between rows (3) & (4)		0.2764	0.2764		0.7113	0.7112		0.0692	0.0692
p-value on F-test of equality between rows (3) & (5)		0.1706	0.1706		0.0022	0.0022		0.0021	0.0021
p-value on F-test of equality between rows (3) & (6)		0.5526	0.5526		0.1481	0.1481		0.0277	0.0278
p-value on F-test of equality between rows (5) & (6)		0.5011	0.5011		0.1556	0.1556		0.4179	0.4176
p-value on F-test of equality between rows (7) & (8)			0.5931			0.9346			0.0370
p-value on F-test of equality between rows (7) & (9)			0.0738			0.2460			0.0206
Mean of Dependent Variable	0.3077	0.3077	0.3077	2.7676	2.7676	2.7676	26.8511	26.8511	26.8511
std dev	(0.46)	(0.46)	(0.46)	(6.05)	(6.05)	(6.05)	(77.97)	(77.97)	(77.97)
Omitted Category	No Overdraft Discount		No Mention Overdraft	No Overdraft Discount		No Mention Overdraft	No Overdraft Discount		No Mention Overdraft
Observations	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31, 2012. Long duration campaign ends Dec 15, short duration campaign ends Nov 15.

Table 6. Effects of First Two Overdraft Messages on Overdraft Usage, After Experiment

	Overdraft Account Used		Avg Overdraft Account Balance (TL)	
	(1)	(2)	(3)	(4)
August 30 Message: Overdraft Availability Reminder (1)	-0.0004	-0.0004	0.7385	0.7383
Omitted category for (1): No August 30 Message	(0.0029)	(0.0029)	(0.6262)	(0.6262)
September 15 Message: Overdraft Interest Discount (2)	-0.0013		0.1405	
Omitted cat for (2): No Overdraft Interest Discount	(0.0029)		(0.6242)	
		0.0031		0.9005
September 15 Message: Overdraft Interest Discount; No Other Discount (3)		(0.0044)		(0.9471)
September 15 Message: Overdraft Interest Discount; Auto-Debit Discount (4)		-0.0012		-0.6743
		(0.0044)		(0.9127)
September 15 Message: Overdraft Interest Discount; Debit Card Discount (5)		-0.0004		0.2274
		(0.0044)		(0.9532)
September 15 Message: Overdraft Availability Reminder (6)		0.0055		0.0320
Omitted category for (3)-(6): No Mention of Overdraft		(0.0044)		(0.9344)
p-value on F-test of equality between rows (3) & (6)		0.6312		0.4310
p-value on F-test of equality between rows (3) & (4)		0.4042		0.1463
p-value on F-test of equality between rows (3) & (5)		0.4933		0.5473
p-value on F-test of equality between rows (4) & (6)		0.1884		0.5101
p-value on F-test of equality between rows (5) & (6)		0.2434		0.8597
Mean of Dependent Variable	0.3713	0.3713	34.0032	34.0032
std dev	(0.48)	(0.48)	(103.98)	(103.98)
Observations	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.OTL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. Overdraft data covers January-May 2013; experimental messages and promotional prices stopped December 15, 2012 at latest.



Table 7. Effects of Message Frequency on Overdraft Usage, After Experiment

	Overdraft Account Used				Avg Overdraft Account Balance (TL)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overdraft Interest Discount + No Messages after Sept 15 (1)	0.0039 (0.0042)	0.0039 (0.0042)			1.2187 (0.9166)	1.2187 (0.9166)		
Overdraft Interest Discount + Messages after Sept 15 (2)	-0.0040 (0.0033)				-0.3978 (0.6908)			
Overdraft Interest Discount + More-Frequent Messages (3)		-0.0043 (0.0041)				-0.7662 (0.8815)		
Overdraft Interest Discount + Less-Frequent Messages (4)		-0.0037 (0.0041)				-0.0299 (0.8666)		
Overdraft Interest Discount + No Other Discount + No Messages after Sept 15 (5)			0.0052 (0.0067)	0.0052 (0.0067)			3.1489** (1.5726)	3.1489** (1.5727)
Overdraft Interest Discount + No Other Discount + Messages after Sept 15 (6)			0.0020 (0.0051)				-0.2227 (1.0586)	
Overdraft + No Other Discount + More-Frequent Messages (7)				-0.0011 (0.0067)				-0.0027 (1.4184)
Overdraft + No Other Discount + Less-Frequent Messages (8)				0.0051 (0.0067)				-0.4430 (1.3828)
Overdraft Interest Discount + Auto-Debit Discount + No Messages after Sept 15 (9)			0.0103 (0.0068)	0.0103 (0.0068)			0.5568 (1.4538)	0.5568 (1.4538)
Overdraft Interest Discount + Auto-Debit Discount + Messages after Sept 15 (10)			-0.0069 (0.0051)				-1.2907 (1.0333)	
Overdraft Interest Discount + Auto-Debit Discount + More-Frequent Messages (11)				-0.0060 (0.0067)				-2.0946 (1.3311)
Overdraft Interest Discount + Auto-Debit + Less-Frequent Messages (12)				-0.0078 (0.0067)				-0.4861 (1.3940)
Overdraft Interest Discount + Debit Card Discount + No Messages after Sept 15 (13)			0.0018 (0.0067)	0.0018 (0.0067)			-0.0186 (1.4535)	-0.0186 (1.4535)
Overdraft Interest Discount + Debit Card Discount + Messages after Sept 15 (14)			-0.0015 (0.0051)				0.3498 (1.1122)	
Overdraft Interest Discount + Debit Card + More-Frequent Messages (15)				-0.0001 (0.0067)				-0.1692 (1.5320)
Overdraft Interest Discount + Debit Card + Less-Frequent Messages (16)				-0.0029 (0.0067)				0.8672 (1.4300)
Overdraft Availability Reminder + No Msgs after Sept 15 (17)			-0.0021 (0.0067)	-0.0021 (0.0067)			-1.9972 (1.3155)	-1.9972 (1.3155)
Overdraft Availability Reminder + Msgs after Sept 15 (18)			0.0093* (0.0051)				1.0436 (1.1198)	
Overdraft Availability Reminder + More-Frequent Msgs (19)				0.0106 (0.0067)				1.3578 (1.4935)
Overdraft Availability Reminder + Less-Frequent Msgs (20)				0.0080 (0.0067)				0.7297 (1.4928)
p-value on F-test of equality between rows (1) & (2)	0.0731				0.0952			
p-value on F-test of equality between rows (3) & (4)		0.9108				0.4919		
p-value on F-test of equality between rows (5) & (6)			0.1366				0.0511	
p-value on F-test of equality between rows (7) & (8)			0.6815				0.0530	
p-value on F-test of equality between rows (9) & (10)				0.7627				0.7505
p-value on F-test of equality between rows (11) & (12)			0.0239				0.2541	
p-value on F-test of equality between rows (13) & (14)				0.4818				0.8103
p-value on F-test of equality between rows (15) & (16)			0.6656				0.8255	
p-value on F-test of equality between rows (17) & (18)				0.8399				0.3655
Mean of Dependent Variable	0.3713	0.3713	0.3713	0.3713	34.0032	34.0032	34.0032	34.0032
std dev	(0.48)	(0.48)	(0.48)	(0.48)	(103.98)	(103.98)	(103.98)	(103.98)
Omitted Category	No Overdraft Discount	No Overdraft Discount	No Mention Overdraft	No Mention Overdraft	No Overdraft Discount	No Overdraft Discount	No Mention Overdraft	No Mention Overdraft
Observations	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. Overdraft data covers January-May 2013; experimental messages and promotional prices stopped December 15, 2012 at latest.

Table 8. Effects of Message and Discount Duration on Overdraft Usage, After Experiment

	Overdraft Account Used			Avg Overdraft Account Balance (TL)		
	(1)	(2)	(3)	(4)	(5)	(6)
Overdraft Interest Discount: long duration (1)	0.0027 (0.0036)			0.1781 (0.7704)		
Overdraft Interest Discount: short duration (2)	-0.0054 (0.0036)			0.1029 (0.7665)		
Overdraft Interest Discount: long duration + messages after Sept 15 (3)		-0.0013 (0.0042)	0.0006 (0.0044)		-1.2159 (0.8622)	-1.2054 (0.9122)
Overdraft Interest Discount: short duration+ messages after Sept 15 (4)		-0.0067 (0.0041)	-0.0048 (0.0044)		0.4173 (0.8873)	0.4277 (0.9359)
Overdraft Interest Discount: long duration, no messages after Sept 15 (5)		0.0106* (0.0055)	0.0124** (0.0057)		2.9604** (1.2653)	2.9710** (1.2994)
Overdraft Interest Discount: short duration, no messages after Sept 15 (6)		-0.0028 (0.0055)	-0.0009 (0.0057)		-0.5295 (1.1759)	-0.5197 (1.2129)
Overdraft Availability Reminder: long duration+ messages after Sept 15 (7)			0.0073 (0.0067)			2.5203 (1.5348)
Overdraft Availability Reminder, short duration+ messages after Sept 15 (8)			0.0113* (0.0067)			-0.429 (1.4496)
Overdraft Availability Reminder, no messages after Sept 15 (9)			-0.0021 (0.0067)			-1.9961 (1.3155)
p-value on F-test of equality between rows (1) & (2)	0.0519			0.9331		
p-value on F-test of equality between rows (3) & (4)		0.2856	0.2856		0.1282	0.1282
p-value on F-test of equality between rows (5) & (6)		0.0642	0.0642		0.0307	0.0307
p-value on F-test of equality between rows (7) & (8)			0.652			0.1353
Mean of Dependent Variable	0.3713	0.3713	0.3713	34.0032	34.0032	34.0032
std dev	(0.48)	(0.48)	(0.48)	(103.98)	(103.98)	(103.98)
Omitted Category	No Overdraft Discount		No Mention Overdraft	No Overdraft Discount		No Mention Overdraft
Observations	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.OTL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. Overdraft data covers January-May 2013; experimental messages and promotional prices stopped December 15, 2012 at latest.

Appendix Table 1: Panel A All Treatments on All Outcomes, During Experiment

	Overdraft Account Used	Days with Overdraft Balance	Avg Overdraft Account Balance (TL)	Whether Auto Bill Pay Registered	Any Debit Card POS Transactions
	(1)	(2)	(3)	(4)	(5)
Panel A: Ignoring August 30th Message					
Overdraft Interest Discount, Short Duration, No Subsequent Messages	0.4753*** (0.0513)	6.6465*** (0.9412)	69.4826*** (17.9091)	0.0206 (0.0144)	0.2621*** (0.0460)
Overdraft Interest Discount, Short Duration, Frequent Messages	0.4974*** (0.0513)	6.7480*** (0.9402)	69.0719*** (17.8925)	0.0172 (0.0144)	0.2938*** (0.0460)
Overdraft Interest Discount, Short Duration, Infrequent Messages	0.5033*** (0.0513)	6.7127*** (0.9409)	70.2925*** (17.9060)	0.0183 (0.0144)	0.2649*** (0.0460)
Overdraft Interest Discount, Long Duration, No Subsequent Messages	0.4965*** (0.0513)	6.8631*** (0.9401)	70.3677*** (17.8979)	0.0204 (0.0144)	0.2835*** (0.0461)
Overdraft Interest Discount, Long Duration, Frequent Messages	0.4845*** (0.0513)	6.5133*** (0.9391)	67.3878*** (17.8868)	0.0181 (0.0144)	0.2679*** (0.0460)
Overdraft Interest Discount, Long Duration, Infrequent Messages	0.4931*** (0.0513)	6.6454*** (0.9388)	67.2711*** (17.8759)	0.0211 (0.0144)	0.2869*** (0.0460)
Overdraft Interest Discount + Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4921*** (0.0513)	6.6946*** (0.9396)	70.8506*** (17.9119)	0.0211 (0.0144)	0.2702*** (0.0461)
Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Frequent Messages	0.4803*** (0.0513)	6.4125*** (0.9396)	66.6089*** (17.8884)	0.0235 (0.0145)	0.2766*** (0.0460)
Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Infrequent Messages	0.4898*** (0.0513)	6.6194*** (0.9391)	68.8597*** (17.8933)	0.0229 (0.0145)	0.2787*** (0.0460)
Overdraft Interest Discount + Auto-Debit Discount, Long Duration, No Subsequent Messages	0.4925*** (0.0513)	6.8203*** (0.9400)	71.0241*** (17.9075)	0.0227 (0.0145)	0.2819*** (0.0460)
Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Frequent Messages	0.4767*** (0.0513)	6.5010*** (0.9391)	66.9488*** (17.8876)	0.0183 (0.0144)	0.2656*** (0.0460)
Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Infrequent Messages	0.4777*** (0.0513)	6.4638*** (0.9388)	65.0691*** (17.8787)	0.0240* (0.0145)	0.2628*** (0.0460)
Overdraft Interest Discount + Debit Card Discount, Short Duration, No Subsequent Messages	0.4905*** (0.0513)	6.6338*** (0.9403)	67.8737*** (17.8880)	0.0214 (0.0144)	0.2694*** (0.0460)
Overdraft Interest Discount + Debit Card Discount, Short Duration, Frequent Messages	0.4758*** (0.0513)	6.4961*** (0.9393)	69.0251*** (17.9083)	0.0205 (0.0144)	0.2830*** (0.0460)
Overdraft Interest Discount + Debit Card Discount, Short Duration, Infrequent Messages	0.4797*** (0.0513)	6.4287*** (0.9399)	68.0465*** (17.9057)	0.0185 (0.0144)	0.2858*** (0.0461)
Overdraft Interest Discount + Debit Card Discount, Long Duration, No Subsequent Messages	0.4828*** (0.0513)	6.6793*** (0.9399)	69.7591*** (17.9093)	0.0178 (0.0144)	0.2784*** (0.0460)
Overdraft Interest Discount + Debit Card Discount, Long Duration, Frequent Messages	0.4811*** (0.0513)	6.4305*** (0.9391)	67.7640*** (17.9156)	0.0209 (0.0144)	0.2683*** (0.0460)
Overdraft Interest Discount + Debit Card Discount, Long Duration, Infrequent Messages	0.4817*** (0.0513)	6.7251*** (0.9397)	68.6645*** (17.8901)	0.0232 (0.0145)	0.2885*** (0.0460)
Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4935*** (0.0513)	6.7328*** (0.9397)	69.4325*** (17.8869)	0.0257* (0.0147)	0.2911*** (0.0461)
Auto-Debit Discount, Short Duration, Frequent Messages	0.4764*** (0.0513)	6.5336*** (0.9404)	66.2380*** (17.8830)	0.0206 (0.0144)	0.2714*** (0.0460)
Auto-Debit Discount, Short Duration, Infrequent Messages	0.4814*** (0.0513)	6.5338*** (0.9385)	67.2283*** (17.8815)	0.0179 (0.0144)	0.2616*** (0.0460)
Auto-Debit Discount, Long Duration, No Subsequent Messages	0.4831*** (0.0513)	6.5890*** (0.9401)	69.3451*** (17.8996)	0.0227 (0.0145)	0.2646*** (0.0460)
Auto-Debit Discount, Long Duration, Frequent Messages	0.4800*** (0.0513)	6.5468*** (0.9395)	66.9282*** (17.8943)	0.0211 (0.0144)	0.2811*** (0.0461)
Auto-Debit Discount, Long Duration, Infrequent Messages	0.4940*** (0.0513)	6.6645*** (0.9397)	69.3493*** (17.9034)	0.0197 (0.0144)	0.2742*** (0.0460)
Debit Card Discount, Short Duration, No Subsequent Messages	0.4976*** (0.0513)	6.7254*** (0.9399)	69.3384*** (17.9203)	0.0190 (0.0144)	0.2697*** (0.0460)
Debit Card Discount, Short Duration, Frequent Messages	0.4968*** (0.0513)	6.7938*** (0.9396)	69.0150*** (17.8869)	0.0189 (0.0144)	0.2964*** (0.0460)
Debit Card Discount, Short Duration, Infrequent Messages	0.4965*** (0.0513)	6.6716*** (0.9393)	68.7787*** (17.8921)	0.0196 (0.0144)	0.2774*** (0.0461)
Debit Card Discount, Long Duration, No Subsequent Messages	0.4916*** (0.0513)	6.5828*** (0.9411)	68.0561*** (17.8832)	0.0200 (0.0144)	0.2821*** (0.0460)
Debit Card Discount, Long Duration, Frequent Messages	0.4849*** (0.0513)	6.6024*** (0.9403)	67.1635*** (17.8856)	0.0219 (0.0145)	0.2733*** (0.0460)
Debit Card Discount, Long Duration, Infrequent Messages	0.5006*** (0.0513)	6.7248*** (0.9407)	69.4946*** (17.8924)	0.0200 (0.0147)	0.2792*** (0.0460)
Overdraft Availability Reminder, Short Duration, No Subsequent Messages	0.4961*** (0.0513)	6.7395*** (0.9397)	69.2084*** (17.8994)	0.0187 (0.0144)	0.2605*** (0.0460)
Overdraft Availability Reminder, Short Duration, Frequent Messages	0.5027*** (0.0513)	6.9343*** (0.9417)	69.0230*** (17.9376)	0.0207 (0.0144)	0.2645*** (0.0460)
Overdraft Availability Reminder, Short Duration, Infrequent Messages	0.4984*** (0.0513)	6.7113*** (0.9392)	67.8470*** (17.8816)	0.0182 (0.0144)	0.2832*** (0.0460)
Overdraft Availability Reminder, Long Duration, No Subsequent Messages	0.4839*** (0.0513)	6.6301*** (0.9392)	66.9013*** (17.8800)	0.0192 (0.0144)	0.2633*** (0.0460)
Overdraft Availability Reminder, Long Duration, Frequent Messages	0.5039*** (0.0513)	6.7725*** (0.9415)	70.7033*** (18.2977)	0.0212 (0.0144)	0.2741*** (0.0460)
Overdraft Availability Reminder, Long Duration, Infrequent Messages	0.5064*** (0.0513)	6.8546*** (0.9403)	72.2391*** (17.9163)	0.0210 (0.0144)	0.2669*** (0.0460)
Mean of Dependent Variable	0.3077	2.7676	26.8511	0.0141	0.3367
std dev	(0.46)	(6.05)	(77.97)	(0.12)	(0.47)
Observations	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown) and no constant. Figure 1 summarizes the experimental design and shows message scripts. Outcome data from Sept 15-Dec 31, 2012.

Appendix Table 1: Panel B1 All Treatments on All Outcomes, During Experiment

	Overdraft Account Used	Days with Overdraft Balance	Avg Overdraft Account Balance (TL)	Whether Auto Bill Pay Registered	Any Debit Card POS Transactions
	(1)	(2)	(3)	(4)	(5)
Panel B1: With August 30th Message (Aug 30 Msg vs No Aug 30 Msg)					
No Aug 30 Mess, Overdraft Interest Discount, Short Duration, No Subsequent Messages	0.4799*** (0.0518)	6.6662*** (0.9464)	69.3940*** (17.9384)	0.0196 (0.0146)	0.2442*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount, Short Duration, Frequent Messages	0.4887*** (0.0518)	6.8659*** (0.9469)	69.5985*** (17.9085)	0.0178 (0.0145)	0.2863*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount, Short Duration, Infrequent Messages	0.4898*** (0.0518)	6.7603*** (0.9465)	71.4926*** (17.9571)	0.0204 (0.0146)	0.2776*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount, Long Duration, No Subsequent Messages	0.5085*** (0.0519)	7.0577*** (0.9474)	72.1432*** (17.9219)	0.0164 (0.0145)	0.2795*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount, Long Duration, Frequent Messages	0.4818*** (0.0518)	6.4903*** (0.9448)	68.1784*** (17.9290)	0.0183 (0.0145)	0.2684*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount, Long Duration, Infrequent Messages	0.4961*** (0.0518)	6.5427*** (0.9438)	67.3928*** (17.8854)	0.0218 (0.0146)	0.2796*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4897*** (0.0518)	6.6956*** (0.9459)	70.9056*** (17.9555)	0.0231 (0.0146)	0.2688*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Frequent Messages	0.4672*** (0.0518)	6.3453*** (0.9440)	64.7294*** (17.8960)	0.0204 (0.0146)	0.2770*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Infrequent Messages	0.4914*** (0.0518)	6.6671*** (0.9453)	70.0249*** (17.9444)	0.0229 (0.0146)	0.2723*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, No Subsequent Messages	0.5012*** (0.0519)	6.7395*** (0.9460)	68.4124*** (17.8889)	0.0245* (0.0147)	0.2885*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Frequent Messages	0.4740*** (0.0518)	6.3911*** (0.9444)	66.0834*** (17.9184)	0.0182 (0.0145)	0.2761*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Infrequent Messages	0.4712*** (0.0518)	6.3540*** (0.9436)	62.9540*** (17.8701)	0.0269* (0.0147)	0.2500*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, No Subsequent Messages	0.4885*** (0.0518)	6.5931*** (0.9466)	67.1984*** (17.8947)	0.0212 (0.0146)	0.2703*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, Frequent Messages	0.4903*** (0.0518)	6.5423*** (0.9448)	70.2569*** (17.9322)	0.0177 (0.0145)	0.2862*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, Infrequent Messages	0.4707*** (0.0518)	6.3435*** (0.9458)	67.3047*** (17.9444)	0.0156 (0.0145)	0.2854*** (0.0469)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, No Subsequent Messages	0.4805*** (0.0518)	6.6976*** (0.9460)	69.8575*** (17.9221)	0.0184 (0.0145)	0.2771*** (0.0468)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, Frequent Messages	0.4785*** (0.0518)	6.3559*** (0.9438)	66.0402*** (17.9086)	0.0179 (0.0145)	0.2562*** (0.0467)
No Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, Infrequent Messages	0.5109*** (0.0518)	6.9246*** (0.9460)	71.2456*** (17.9142)	0.0261* (0.0147)	0.3020*** (0.0468)
No Aug 30 Mess, Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4954*** (0.0518)	6.7201*** (0.9459)	69.2238*** (17.9171)	0.0228 (0.0151)	0.3107*** (0.0469)
No Aug 30 Mess, Auto-Debit Discount, Short Duration, Frequent Messages	0.4709*** (0.0518)	6.4666*** (0.9452)	67.1620*** (17.8949)	0.0201 (0.0146)	0.2669*** (0.0467)
No Aug 30 Mess, Auto-Debit Discount, Short Duration, Infrequent Messages	0.4845*** (0.0518)	6.5196*** (0.9438)	66.7958*** (17.8859)	0.0181 (0.0145)	0.2626*** (0.0467)
No Aug 30 Mess, Auto-Debit Discount, Long Duration, No Subsequent Messages	0.4918*** (0.0518)	6.8353*** (0.9467)	71.9419*** (17.9330)	0.0209 (0.0146)	0.2569*** (0.0467)
No Aug 30 Mess, Auto-Debit Discount, Long Duration, Frequent Messages	0.4844*** (0.0518)	6.5763*** (0.9451)	65.5831*** (17.8906)	0.0217 (0.0146)	0.2742*** (0.0469)
No Aug 30 Mess, Auto-Debit Discount, Long Duration, Infrequent Messages	0.4935*** (0.0518)	6.7819*** (0.9459)	70.4994*** (17.9307)	0.0189 (0.0146)	0.2945*** (0.0468)
No Aug 30 Mess, Debit Card Discount, Short Duration, No Subsequent Messages	0.4989*** (0.0518)	6.5988*** (0.9445)	68.3653*** (17.8998)	0.0183 (0.0145)	0.2629*** (0.0467)
No Aug 30 Mess, Debit Card Discount, Short Duration, Frequent Messages	0.4856*** (0.0518)	6.5659*** (0.9445)	67.8823*** (17.8933)	0.0194 (0.0146)	0.2930*** (0.0468)
No Aug 30 Mess, Debit Card Discount, Short Duration, Infrequent Messages	0.4947*** (0.0518)	6.8316*** (0.9462)	68.8482*** (17.8954)	0.0210 (0.0146)	0.2867*** (0.0469)
No Aug 30 Mess, Debit Card Discount, Long Duration, No Subsequent Messages	0.5065*** (0.0518)	6.7300*** (0.9466)	67.7379*** (17.8865)	0.0197 (0.0146)	0.2941*** (0.0468)
No Aug 30 Mess, Debit Card Discount, Long Duration, Frequent Messages	0.4811*** (0.0518)	6.6299*** (0.9445)	66.8286*** (17.8852)	0.0234 (0.0146)	0.2799*** (0.0467)
No Aug 30 Mess, Debit Card Discount, Long Duration, Infrequent Messages	0.4927*** (0.0518)	6.6332*** (0.9457)	68.2741*** (17.9126)	0.0236 (0.0151)	0.2674*** (0.0468)
No Aug 30 Mess, Overdraft Availability Reminder, Short Duration, No Subsequent Messages	0.4948*** (0.0518)	6.6903*** (0.9452)	68.6244*** (17.9401)	0.0168 (0.0145)	0.2743*** (0.0468)
No Aug 30 Mess, Overdraft Availability Reminder, Short Duration, Frequent Messages	0.4809*** (0.0518)	6.5452*** (0.9466)	66.6261*** (17.9107)	0.0216 (0.0146)	0.2610*** (0.0467)
No Aug 30 Mess, Overdraft Availability Reminder, Short Duration, Infrequent Messages	0.5042*** (0.0518)	6.6334*** (0.9445)	67.2795*** (17.8919)	0.0214 (0.0146)	0.2745*** (0.0468)
No Aug 30 Mess, Overdraft Availability Reminder, Long Duration, No Subsequent Messages	0.4872*** (0.0518)	6.6246*** (0.9449)	67.3870*** (17.8872)	0.0220 (0.0146)	0.2553*** (0.0467)
No Aug 30 Mess, Overdraft Availability Reminder, Long Duration, Frequent Messages	0.5042*** (0.0518)	6.9050*** (0.9486)	73.0950*** (18.7279)	0.0224 (0.0146)	0.2713*** (0.0468)
No Aug 30 Mess, Overdraft Availability Reminder, Long Duration, Infrequent Messages	0.5068*** (0.0519)	6.9194*** (0.9471)	73.3227*** (17.9530)	0.0171 (0.0145)	0.2772*** (0.0468)
Mean of Dependent Variable	0.3077	2.7676	26.8511	0.0141	0.3367
std dev	(0.46)	(6.05)	(77.97)	(0.12)	(0.47)
Observations	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown) and no constant. Figure 1 summarizes the experimental design and shows message scripts. Outcome data from Sept 15-Dec 31, 2012.

Appendix Table 1: Panel B2 All Treatments on All Outcomes, During Experiment

	Overdraft Account Used	Days with Overdraft Balance	Avg Overdraft Account Balance (TL)	Whether Auto Bill Pay Registered	Any Debit Card POS Transactions
	(1)	(2)	(3)	(4)	(5)
Panel B2: With August 30th Message (Aug 30 Msg vs No Aug 30 Msg)					
Aug 30 Mess, Overdraft Interest Discount, Short Duration, No Subsequent Messages	0.4713*** (0.0518)	6.7056*** (0.9486)	70.5159*** (17.9377)	0.0215 (0.0146)	0.2811*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount, Short Duration, Frequent Messages	0.5067*** (0.0519)	6.7093*** (0.9464)	69.4927*** (17.9113)	0.0164 (0.0145)	0.3024*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount, Short Duration, Infrequent Messages	0.5174*** (0.0519)	6.7440*** (0.9476)	70.0354*** (17.9068)	0.0161 (0.0145)	0.2534*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount, Long Duration, No Subsequent Messages	0.4851*** (0.0518)	6.7489*** (0.9463)	69.5513*** (17.9178)	0.0241* (0.0147)	0.2888*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount, Long Duration, Frequent Messages	0.4878*** (0.0518)	6.6154*** (0.9451)	67.5291*** (17.8818)	0.0177 (0.0145)	0.2688*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount, Long Duration, Infrequent Messages	0.4906*** (0.0518)	6.8270*** (0.9461)	68.0957*** (17.8923)	0.0202 (0.0146)	0.2955*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4951*** (0.0518)	6.7728*** (0.9459)	71.7434*** (17.9420)	0.0190 (0.0146)	0.2729*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Frequent Messages	0.4941*** (0.0518)	6.5587*** (0.9464)	69.4398*** (17.9078)	0.0264* (0.0147)	0.2775*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Short Duration, Infrequent Messages	0.4888*** (0.0518)	6.6508*** (0.9446)	68.6421*** (17.8896)	0.0228 (0.0146)	0.2864*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, No Subsequent Messages	0.4844*** (0.0518)	6.9799*** (0.9474)	74.5776*** (18.0103)	0.0208 (0.0146)	0.2766*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Frequent Messages	0.4801*** (0.0518)	6.6898*** (0.9458)	68.7595*** (17.8931)	0.0182 (0.0145)	0.2564*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount + Auto-Debit Discount, Long Duration, Infrequent Messages	0.4848*** (0.0518)	6.6531*** (0.9455)	68.1416*** (17.9078)	0.0210 (0.0146)	0.2769*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, No Subsequent Messages	0.4930*** (0.0518)	6.7532*** (0.9460)	69.4921*** (17.9111)	0.0214 (0.0146)	0.2699*** (0.0467)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, Frequent Messages	0.4619*** (0.0517)	6.5286*** (0.9452)	68.7370*** (17.9526)	0.0231 (0.0146)	0.2811*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Short Duration, Infrequent Messages	0.4892*** (0.0518)	6.5927*** (0.9451)	69.7326*** (17.9266)	0.0212 (0.0146)	0.2875*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, No Subsequent Messages	0.4856*** (0.0518)	6.7400*** (0.9466)	70.6072*** (17.9675)	0.0169 (0.0145)	0.2809*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, Frequent Messages	0.4842*** (0.0518)	6.5841*** (0.9453)	70.4350*** (18.0066)	0.0237 (0.0147)	0.2816*** (0.0468)
Aug 30 Mess, Overdraft Interest Discount + Debit Card Discount, Long Duration, Infrequent Messages	0.4529*** (0.0517)	6.6039*** (0.9461)	67.0223*** (17.9081)	0.0202 (0.0146)	0.2761*** (0.0468)
Aug 30 Mess, Auto-Debit Discount, Short Duration, No Subsequent Messages	0.4923*** (0.0518)	6.8243*** (0.9463)	70.5879*** (17.8924)	0.0283* (0.0147)	0.2728*** (0.0468)
Aug 30 Mess, Auto-Debit Discount, Short Duration, Frequent Messages	0.4825*** (0.0518)	6.6793*** (0.9478)	66.2581*** (17.8944)	0.0209 (0.0146)	0.2771*** (0.0468)
Aug 30 Mess, Auto-Debit Discount, Short Duration, Infrequent Messages	0.4788*** (0.0518)	6.6268*** (0.9448)	68.6067*** (17.9172)	0.0176 (0.0145)	0.2618*** (0.0467)
Aug 30 Mess, Auto-Debit Discount, Long Duration, No Subsequent Messages	0.4749*** (0.0518)	6.4210*** (0.9456)	67.6859*** (17.9223)	0.0244* (0.0147)	0.2737*** (0.0468)
Aug 30 Mess, Auto-Debit Discount, Long Duration, Frequent Messages	0.4763*** (0.0518)	6.5968*** (0.9461)	69.2013*** (17.9395)	0.0203 (0.0146)	0.2892*** (0.0468)
Aug 30 Mess, Auto-Debit Discount, Long Duration, Infrequent Messages	0.4950*** (0.0518)	6.6252*** (0.9456)	69.1369*** (17.9325)	0.0204 (0.0146)	0.2551*** (0.0467)
Aug 30 Mess, Debit Card Discount, Short Duration, No Subsequent Messages	0.4969*** (0.0518)	6.9319*** (0.9477)	71.2650*** (17.9804)	0.0195 (0.0145)	0.2779*** (0.0468)
Aug 30 Mess, Debit Card Discount, Short Duration, Frequent Messages	0.5085*** (0.0519)	7.1027*** (0.9475)	71.1029*** (17.9161)	0.0182 (0.0145)	0.3011*** (0.0468)
Aug 30 Mess, Debit Card Discount, Short Duration, Infrequent Messages	0.4989*** (0.0518)	6.5913*** (0.9442)	69.6550*** (17.9247)	0.0181 (0.0145)	0.2694*** (0.0467)
Aug 30 Mess, Debit Card Discount, Long Duration, No Subsequent Messages	0.4774*** (0.0518)	6.5156*** (0.9473)	69.3186*** (17.9188)	0.0202 (0.0146)	0.2715*** (0.0468)
Aug 30 Mess, Debit Card Discount, Long Duration, Frequent Messages	0.4892*** (0.0518)	6.6541*** (0.9481)	68.4450*** (17.9195)	0.0202 (0.0146)	0.2679*** (0.0468)
Aug 30 Mess, Debit Card Discount, Long Duration, Infrequent Messages	0.5090*** (0.0518)	6.8954*** (0.9484)	71.6639*** (17.9212)	0.0163 (0.0145)	0.2922*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Short Duration, No Subsequent Messages	0.4979*** (0.0519)	6.8676*** (0.9465)	70.7397*** (17.9044)	0.0204 (0.0146)	0.2479*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Short Duration, Frequent Messages	0.5250*** (0.0519)	7.4001*** (0.9501)	72.3517*** (18.0052)	0.0196 (0.0146)	0.2692*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Short Duration, Infrequent Messages	0.4932*** (0.0518)	6.8690*** (0.9463)	69.3660*** (17.8975)	0.0149 (0.0145)	0.2932*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Long Duration, No Subsequent Messages	0.4812*** (0.0518)	6.7144*** (0.9458)	67.3570*** (17.9064)	0.0162 (0.0145)	0.2727*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Long Duration, Frequent Messages	0.5041*** (0.0518)	6.7186*** (0.9469)	69.2527*** (17.9193)	0.0197 (0.0146)	0.2782*** (0.0468)
Aug 30 Mess, Overdraft Availability Reminder, Long Duration, Infrequent Messages	0.5065*** (0.0519)	6.8686*** (0.9470)	72.1015*** (17.9629)	0.0246* (0.0147)	0.2579*** (0.0467)
Mean of Dependent Variable	0.3077	2.7676	26.8511	0.0141	0.3367
std dev	(0.46)	(6.05)	(77.97)	(0.12)	(0.47)
Observations	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown) and no constant. Figure 1 summarizes the experimental design and shows message scripts. Outcome data from Sept 15-Dec 31, 2012.

Appendix Table 2. Effects of First Two Overdraft Messages on Overdraft Balances (Outlier Robustness Checks), During Experiment

	Avg Overdraft Account Balance (TL)		Avg Overdraft Account Balance (top 1% winsorized)		Avg Overdraft Account Balance (top 1% dropped)		Avg Overdraft Account Balance (top 1% of positive values winsorized)		Avg Overdraft Account Balance (top 1% of positive values dropped)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
August 30 Message: Overdraft Availability Reminder (1)	1.0552**	1.0554**	0.7883**	0.7884**	0.4584	0.4584	0.8782**	0.8784**	0.7521**	0.7519**
Omitted category for (1): No August 30 Message	(0.4701)	(0.4701)	(0.3757)	(0.3757)	(0.3279)	(0.3279)	(0.4128)	(0.4128)	(0.3788)	(0.3788)
September 15 Message: Overdraft Interest Discount (2)	-0.1057		-0.3302		-0.7058**		-0.2134		-0.3530	
Omitted cat for (2): No Overdraft Interest Discount	(0.4688)		(0.3755)		(0.3276)		(0.4122)		(0.3786)	
September 15 Message: Overdraft Interest Discount; No Other Discount (3)		0.6179		0.5033		0.0841		0.6351		0.5577
Omitted category: No Overdraft Interest Discount		(0.6887)		(0.5664)		(0.4924)		(0.6235)		(0.5744)
September 15 Message: Overdraft Interest Discount; Auto- Debit Discount (4)		-0.1347		-0.3622		-0.5305		-0.2595		-0.5291
Omitted category: No Overdraft Interest Discount; Auto- Debit Discount (4)		(0.6988)		(0.5613)		(0.4899)		(0.6187)		(0.5644)
September 15 Message: Overdraft Interest Discount; Debit Card Discount (5)		0.1573		-0.3294		-0.7268		-0.2582		-0.3564
Omitted category: No Overdraft Interest Discount; Debit Card Discount (5)		(0.7236)		(0.5619)		(0.4872)		(0.6173)		(0.5677)
September 15 Message: Overdraft Availability Reminder (6)		0.9562		0.8008		0.9421*		0.7563		0.7301
Omitted category for (3)-(6): No Mention of Overdraft		(0.7029)		(0.5629)		(0.4961)		(0.6150)		(0.5657)
p-value on F-test of equality between rows (3) & (6)		0.6765		0.6496		0.1341		0.8661		0.7943
p-value on F-test of equality between rows (3) & (4)		0.3519		0.1856		0.2787		0.2153		0.0999
p-value on F-test of equality between rows (3) & (5)		0.5782		0.2029		0.1512		0.2151		0.1681
p-value on F-test of equality between rows (4) & (6)		0.1831		0.0737		0.0098		0.1549		0.0536
p-value on F-test of equality between rows (5) & (6)		0.3414		0.0824		0.0033		0.1546		0.0973
Mean of Dependent Variable	26.8511	26.8511	24.9654	24.9654	21.7815	21.7815	26.0092	26.0092	24.4586	24.4586
std dev	(77.97)	(77.97)	(62.22)	(62.22)	(53.83)	(53.83)	(68.47)	(68.47)	(62.61)	(62.61)
Observations	108,000	108,000	108,000	108,000	106,920	106,920	108,000	108,000	107,668	107,668

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable (column header) on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31, 2012.

Appendix Table 3. Effects on Checking + Savings Balances, During Experiment

	Avg Monthly Deposit Assets		Avg Monthly Deposit Assets (top 1% winsorized)		Avg Monthly Deposit Assets (top 1% dropped)		Avg Monthly Deposit Assets (Log)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	August 30 Message: Overdraft Availability Reminder (1)	-8.8772	-8.8742	-8.5695*	-8.5665*	-7.3427*	-7.3425*	-0.0118
Omitted category for (1): No August 30 Message	(9.7693)	(9.7695)	(4.9101)	(4.9100)	(3.7965)	(3.7965)	(0.0115)	(0.0115)
September 15 Message: Overdraft Interest Discount (2)	9.0521		4.7638		4.6077		0.0054	
Omitted cat for (2): No Overdraft Interest Discount	(9.7355)		(4.9104)		(3.7965)		(0.0115)	
September 15 Message: Overdraft Interest Discount; No Other Discount (3)		20.7432		14.9608**		11.9637**		0.0155
September 15 Message: Overdraft Interest Discount; Auto-Debit Discount (4)		(15.0104)		(7.5158)		(5.8106)		(0.0173)
September 15 Message: Overdraft Interest Discount; Debit Card Discount (5)		16.2004		9.7244		4.6246		-0.0035
September 15 Message: Overdraft Availability Reminder (6)		(15.1406)		(7.4376)		(5.6585)		(0.0172)
Omitted category for (3)-(6): No Mention of Overdraft		-13.3622		-7.7783		1.1798		-0.0040
p-value on F-test of equality between rows (3) & (6)		(14.3609)		(7.1361)		(5.6016)		(0.0171)
p-value on F-test of equality between rows (3) & (4)		-3.5934		2.5969		3.9228		-0.0082
p-value on F-test of equality between rows (3) & (5)		(13.9766)		(7.3736)		(5.7159)		(0.0171)
p-value on F-test of equality between rows (4) & (6)		0.1193		0.1532		0.2322		0.2337
p-value on F-test of equality between rows (5) & (6)		0.7855		0.5479		0.2721		0.3411
Mean of Dependent Variable		0.0329		0.0072		0.1042		0.3263
std dev		0.2079		0.4067		0.9153		0.8147
Observations		0.5146		0.2130		0.6754		0.8321
Mean of Dependent Variable	415.3350	415.3350	359.4495	359.4495	305.0098	305.0098	4.2853	4.2853
std dev	(1631.25)	(1631.25)	(847.06)	(847.06)	(654.51)	(654.51)	(2.11)	(2.11)
Observations	108,000	108,000	108,000	108,000	106,920	106,920	106,020	106,020

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable (column header) on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. All variables cover the time period September 15-December 31.

Appendix Table 4. Heterogenous Treatment Effects by Prior Use?

	Overdraft Account Used		Days with Overdraft Balance		Avg Overdraft Account Balance (TL)	
	(1)	(2)	(3)	(4)	(5)	(6)
August 30 Overdraft Availability Reminder * Prior Overdraft Acct Use (1)	-0.0070 (0.0072)	-0.0070 (0.0072)	0.1889 (0.1214)	0.1880 (0.1214)	2.3233 (1.7323)	2.3214 (1.7326)
August 30 Overdraft Availability Reminder * No Prior Overdraft Acct Use (2)	0.0008 (0.0029)	0.0008 (0.0029)	0.0469 (0.0342)	0.0470 (0.0342)	0.6031 (0.4217)	0.6041 (0.4217)
September 15 Message: Overdraft Interest Discount * Prior Overdraft Acct Use (3)	-0.0078 (0.0072)	-0.0013 (0.0081)	-0.0939 (0.1214)	-0.0084 (0.1360)	0.8178 (1.7290)	1.0118 (1.9370)
September 15 Message: Overdraft Interest Discount * No Prior Overdraft Acct Use (4)	-0.0057** (0.0029)	-0.0039 (0.0032)	-0.0615* (0.0342)	-0.0311 (0.0381)	-0.2284 (0.4191)	0.0665 (0.4599)
September 15 Message: Overdraft Availability Reminder (No Incentive) * Prior Overdraft Acct Use (5)		0.0193* (0.0107)		0.2532 (0.1807)		0.5743 (2.5329)
September 15 Message: Overdraft Availability Reminder (No Incentive) * No Prior Overdraft Acct Use (6)		0.0055 (0.0044)		0.0914* (0.0521)		0.8857 (0.6385)
Used Overdraft Account in Six Months Before Treatment (7)	0.3287*** (0.0067)	0.3241*** (0.0078)	4.0805*** (0.1085)	4.0258*** (0.1259)	40.7065*** (1.5001)	40.8089*** (1.7283)
p-value on F-test of equality between rows (1) & (2)	0.3164	0.3122	0.2606	0.2637	0.3345	0.3354
p-value on F-test of equality between rows (3) & (4)	0.7853	0.7678	0.7971	0.8723	0.5561	0.6347
p-value on F-test of equality between rows (5) & (6)		0.2332		0.3895		0.9051
Mean(LHS) Sept-Nov	0.3077	0.3077	2.7676	2.7676	26.8511	26.8511
std dev	(0.46)	(0.46)	(6.05)	(6.05)	(77.97)	(77.97)
Omitted Category:	No Overdraft	No Mention of	No Overdraft	No Mention of	No Overdraft	No Mention of
Observations	Discount	Overdraft	Discount	Overdraft	Discount	Overdraft
	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the LHS variable on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. Overdraft outcomes cover Sept 15-Dec 31, 2012. Overdraft prior use indicates the 17% of the sample that overdrafted at least once during Feb-Aug 2012.



Appendix Table 5. Does the August 30 Message Mediate Treatment Effects of Later Messages?

	Overdraft Account Used		Days with Overdraft Balance		Avg Overdraft Account Balance (TL)	
	(1)	(2)	(3)	(4)	(5)	(6)
August 30 Message: Overdraft Availability Reminder (1)	0.0016 (0.0040)	-0.0001 (0.0049)	0.0943* (0.0518)	0.0476 (0.0631)	1.0338 (0.6541)	1.1444 (0.7875)
September 15 Message: Overdraft Interest Discount w/ Aug 30 Msg (2)	-0.0075* (0.0040)		-0.0802 (0.0522)		-0.0842 (0.6774)	
September 15 Message: Overdraft Interest Discount w/o Aug 30 Msg (3)	-0.0055 (0.0040)		-0.0653 (0.0509)		-0.1271 (0.6488)	
September 15 Message: Overdraft Interest Discount; No Other Discount w/ Aug 30 Msg (4)		0.0032 (0.0060)		0.0203 (0.0778)		-0.2016 (0.9581)
September 15 Message: Overdraft Interest Discount; No Other Discount w/o Aug 30 Msg (5)		0.0008 (0.0060)		0.0731 (0.0778)		1.4372 (0.9865)
September 15 Message: Overdraft Interest Discount; Auto Debit Discount w/ Aug 30 Msg (6)		-0.0021 (0.0059)		0.0127 (0.0785)		0.8122 (1.0244)
September 15 Message: Overdraft Interest Discount; Auto Debit Discount w/o Aug 30 Msg (7)		-0.0076 (0.0059)		-0.1253* (0.0754)		-1.0793 (0.9514)
September 15 Message: Overdraft Interest Discount; Debit Card Discount w/ Aug 30 Msg (8)		-0.0121** (0.0059)		-0.0713 (0.0773)		-0.0710 (1.0665)
September 15 Message: Overdraft Interest Discount; Debit Card Discount w/o Aug 30 Msg (9)		-0.0034 (0.0059)		-0.0812 (0.0757)		0.3861 (0.9770)
September 15 Message: Overdraft Availability Reminder w/ Aug 30 Msg (10)		0.0114* (0.0060)		0.2021** (0.0797)		0.7912 (1.0046)
September 15 Message: Overdraft Availability Reminder w/o Aug 30 Msg (11)		0.0063 (0.0060)		0.0622 (0.0767)		1.1212 (0.9815)
p-value on F-test of equality between rows (2) & (3)	0.7291		0.8383		0.9635	
p-value on F-test of equality between rows (4) & (5)		0.7720		0.6313		0.2327
p-value on F-test of equality between rows (6) & (7)		0.5111		0.2049		0.1762
p-value on F-test of equality between rows (8) & (9)		0.2982		0.9267		0.7518
p-value on F-test of equality between rows (10) & (11)		0.5477		0.2058		0.8140
Mean of Dependent Variable	0.3077	0.3077	2.7676	2.7676	26.8511	26.8511
std dev	(0.46)	(0.46)	(6.05)	(6.05)	(77.97)	(77.97)
Observations	108,000	108,000	108,000	108,000	108,000	108,000

Notes: OLS with Huber-White Standard Errors. 1.0TL = \$.56. Unit of observation is the unit of randomization: the account-holder. Each column presents results from a single regression of the dependent variable (column header) on the treatment variables shown and the randomization strata (not shown). Figure 1 summarizes the experimental design and shows message scripts. Overdraft outcomes cover September 15-December 31, 2012.