WHAT'S ADVERTISING CONTENT WORTH?

EVIDENCE FROM A CONSUMER CREDIT MARKETING FIELD EXPERIMENT*

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ABSTRACT

Firms spend billions of dollars developing advertising content, yet there is little field evidence on how much or how it affects demand. We analyze a direct mail field experiment in South Africa implemented by a consumer lender that randomized advertising content, loan price, and loan offer deadlines simultaneously. We find that advertising content significantly affects demand. Although it was difficult to predict ex-ante which specific advertising features would matter most in this context, the features that do matter have large effects. Showing fewer example loans, not suggesting a particular use for the loan, or including a photo of an attractive female increase loan

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demand by about as much as a 25% reduction in the interest rate. The evidence also suggests that advertising content persuades by appealing "peripherally": to intuition rather than reason. Although the advertising content effects point to an important role for persuasion and related psychology, our deadline results do not support the psychological prediction that shorter deadlines may help overcome time-management problems; instead, demand strongly increases with longer deadlines.

JEL codes: D01, M31, M37, C93, D12, D14, D21, D81, D91, O12

Other keywords: economics of advertising, economics & psychology, behavioral economics, cues, System I and System II processing, choice avoidance, choice overload, interest rate disclosure, microfinance, microcredit

I. Introduction

Firms spend billions of dollars each year advertising consumer products to influence demand. Economic theories emphasize the informational content of advertising: Stigler (1987, p. 243), for example, writes that "advertising may be defined as the provision of information about the availability and quality of a commodity." But advertisers also spend resources trying to persuade consumers with "creative" content that does not appear to be informative in the Stiglerian sense.[1]

Although laboratory studies in marketing have shown that non-informative content may affect demand, and sophisticated firms use randomized experiments to optimize their advertising content strategy (Stone and Jacobs 2001; Day 2003; Agarwal and Ambrose 2007), academic researchers have rarely used field experiments to study advertising content effects.[2] Chandy et al. (2001) review evidence of advertising effects on consumer behavior, and find that "research to date can be broadly classified into two streams: laboratory studies of the effects of ad cues on cognition, affect or intentions and econometric observational field studies of the effects of advertising intensity on purchase behavior… each has focused on different variables and operated largely in isolation of the other" (p. 399).[3] Thus, although we know that attempts to persuade consumers with non-informative advertising are common, we know little about how, and how much, such advertising influences consumer choice in natural settings.

In this paper, we use a large-scale direct-mail field experiment to study the effects of advertising content on real decisions, involving non-negligible sums, among experienced decision makers. A consumer lender in South Africa randomized advertising content and the interest rate

[1] E.g., see Mullainathan, Schwartzstein and Shleifer (2008) for evidence on the prevalence of persuasive content in mutual fund advertisements.

[2] Levitt and List (2007) discuss the importance of validating laboratory findings in the field.

[3] Bagwell's (2007) extensive review of the economics of advertising covers both laboratory and field studies and cites only one randomized field experiment (Krishnamurthi and Raj 1985); only 5 of the 232 empirical papers cited in Bagwell's review address advertising content effects. DellaVigna (forthcoming) reviews field studies in psychology and economics does not cite any studies on advertising other than an earlier version of this paper. Simester (2004) laments the "striking absence" of randomized field experimentation in the marketing literature. For some exceptions see, e.g., Ganzach and Karsahi (1995) and Anderson and Simester (2008), and the literature on direct mail charitable fundraising (e.g., List and Lucking-Reiley 2002). Several other articles in the marketing literature call for greater reliance on field studies more generally: Stewart (1992), Wells (1993), Cook and Kover (1997), and Winer (1999).

in actual offers to 53,000 former clients (Figures I and II show example mailers).[4] The variation in advertising content comes from eight "features" that varied the presentation of the loan offer. We worked together with the lender to create six features relevant to the extensive literature (primarily from laboratory experiments in psychology and decision sciences) on how "frames" and "cues" may affect choices. Specifically, mailers varied in whether they included: a person's photograph on the letter, suggestions for how to use the loan proceeds, a large or small table of example loans, information about the interest rate as well as the monthly payments, a comparison to competitors' interest rate, and mention of a promotional raffle for a cell phone. Mailers also included two features that were the lender's choice, rather than motivated by a body of psychological evidence: reference to the interest rate as "special" or "low," and mention of speaking the local language. Our research design enables us to estimate demand sensitivity to advertising content and to compare it directly to price sensitivity.[5]

An additional randomization of the offer expiration date also allows us to study demand sensitivity to deadlines. Our interest in deadline effects is motivated by the fact that firms often promote time-limited offers and by the theoretically ambiguous effect of such time limits on demand. Under neoclassical models, shorter deadlines should reduce demand since longer deadlines provide more option value; in contrast, some behavioral models and findings suggest that shorter deadlines will increase demand by overcoming limited attention or procrastination.

[4] The Web Appendix, at http://www.mitpressjournals.org/loi/qjec , contains additional example mailers.

[5] The existing field evidence on the effects of framing and cues does not simultaneously vary price. A large marketing literature using conjoint analysis does this comparison, but is essentially focused on hypothetical choices with no consumption consequences for the respondents; see Krieger et al. (2004) for an overview of this literature. In a typical conjoint analysis, respondents are shown or described a set of alternative products and asked to rate, rank or select products from that set. Conjoint analysis is widely applied in marketing to develop and position new products and help with the pricing of products. As discussed in Rao (2008), "an issue in the data collection in conjoint studies is whether respondents experience strong incentives to expend their cognitive resources (or devote adequate time and effort) in providing responses (ratings or choices) to hypothetical stimuli presented as profiles or in choice sets" (p. 34). Some recent conjoint analyses have tried to develop more incentive-aligned elicitation methods that provide better estimates of true consumer preferences; see, e.g., Ding et al (2005).

Our analysis uncovers four main findings. First, we ask *whether* advertising content affects demand. We use joint F-tests across all eight content randomizations and find significant effects on loan takeup (the extensive margin) but not on loan amount (the intensive margin). We do not find any evidence that the extensive margin demand increase is driven by reductions in the likelihood of borrowing from other lenders, nor do we find evidence of adverse selection on the demand response to advertising content: repayment default is not significantly correlated with advertising content. This first finding suggests that traditional demand estimation, which focuses solely on price and ignores advertising content, may produce unstable estimates of demand.

Second, we ask *how much* advertising content affects demand, relative to price. As one would expect, demand is significantly decreasing in price; e.g., each 100 basis point (13%) reduction in the interest rate increases loan takeup by 0.3 percentage points (4%). The statistically significant advertising content effects are large relative to this price effect. Showing one example of a possible loan (instead of four example loans) has the same estimated effect as a 200 basis point reduction in the interest rate. This finding of a strong positive effect on demand of displaying *fewer* example loans provides novel evidence consistent with the hypothesis that presenting consumers with larger menus can trigger choice avoidance and/or deliberation that makes the advertised product less appealing. We also find that showing a female photo, or not suggesting a particular use for the loan, increase demand by about as much as a 200 basis point reduction in the interest rate.

Third, we provide suggestive evidence on the channels through which persuasive advertising content operates. We classify our content treatments into those that aim to trigger "peripheral" or "intuitive" responses (effortless, quick, and associative) along the lines of Kahneman's (2003) System I, vs. those that aim to trigger more "deliberative" responses (effortful, conscious, and reasoned) along the lines of Kahneman's (2003) System II. The System II content does not have jointly significant effects on takeup. The System I content does have jointly significant effects on loan takeup. Hence, in our context at least, advertising content appears to be more effective when

it aims to trigger an intuitive rather than a deliberative response. However, because the classification of some of our treatments into System I or System II is open to debate, we view this evidence as more suggestive than definitive.

Finally, we report the effects of deadlines on demand. In contrast with the view that shorter deadlines help overcome limited attention or procrastination, we do not find any evidence that shorter deadlines increase demand; rather, we find that demand increases dramatically as deadlines randomly increase from two to six weeks. Nor do we find that shorter deadlines increase the probability of applying early, or that they increase the probability of applying after the deadline. So although our advertising content results point to an important role for persuasion and related psychology, our deadline results tell another story. The option value of longer deadlines seems to dominate in our setting: there is no evidence that shorter deadlines spur action by providing salience or commitment to overcome procrastination.

Overall, our results suggest that seemingly non-informative advertising may play a large role in real consumer decisions. Moreover, insights from controlled laboratory experiments in psychology and decision sciences on how frames and cues affect choice can be leveraged to guide the design of effective advertising content. It is sobering, though, that we only had modest success predicting (based on the prior evidence) which *specific* content features would significantly impact demand. One interpretation of this failure is that we lacked the statistical power to identify anything other than large effects of any single content treatment, but it is also likely that some the findings generated in other contexts did not carry over to ours. This fits with a central premise of psychology – context matters – and suggests that pinning down which effects matter most in particular market settings will require systematic field experimentation.

The paper proceeds as follows. Section II describes the market and our cooperating lender. Section III details the experimental and empirical strategies. Section IV provides a conceptual framework for interpreting the results. Section V presents the empirical results. Section VI concludes.

II. The Market Setting

Our cooperating consumer lender (the "Lender") operated for over 20 years as one of the largest, most profitable lenders in South Africa.[6] The Lender competed in a "cash loan" market segment that offers small, high-interest, short-term, uncollateralized credit with fixed monthly repayment schedules to the working poor population. Aggregate outstanding loans in the cash loan market segment equal about 38 percent of non-mortgage consumer debt.[7] Estimates of the proportion of the South African working-age population currently borrowing in the cash loan market range from below five percent to around ten percent.[8]

Cash loan borrowers generally lack the credit history and/or collateralizable wealth needed to borrow from traditional institutional sources such as commercial banks. Data on how borrowers use the loans is scarce, since lenders usually follow the "no questions asked" policy common to consumption loan markets. The available data suggest a range of consumption smoothing and investment uses, including food, clothing, transportation, education, housing, and paying off other debt.[9]

Cash loan sizes tend to be small relative to the fixed costs of underwriting and monitoring them, but substantial relative to a typical borrower's income. For example, the Lender's median loan size of 1000 Rand (about $150) was 32 percent of its median borrower's gross monthly income. Cash lenders focusing on the highest-risk market segment typically make one-month maturity loans at 30 percent interest *per month*. Informal sector moneylenders charge 30-100

[6] The Lender was merged into a bank holding company in 2005 and no longer exists as a distinct entity.
[7] Cash loan disbursements totaled approximately 2.6% of all household consumption and 4% of all household debt outstanding in 2005. (Sources: reports by the Department of Trade and Industry, Micro Finance Regulatory Council, and South African Reserve Bank).
[8] Sources: reports by Finscope South Africa, and the Micro Finance Regulatory Council.
[9] Sources: data from this experiment (survey administered to a sample of borrowers following finalization of the loan contract); household survey data from other studies on different samples of cash loan market borrowers (FinScope 2004; Karlan and Zinman forthcoming-a).

Table I. Experimental Summary

Creative content and its *hypothesized effects on demand*	Treatment value	Frequency	Sample frame/conditions
Features 1-3: System I (intuitive processing) Treatments			
Feature 1: Photo	No photo	0.20	All
	Black photo	0.48	Assigned conditional on client's race to produce the targeted ratio of client-photo matches.
	Non-Black photo:		
	Indian	0.13	
	White	0.12	
	Coloured	0.07	
match increases due to affinity/simliarity	Photo with race matched to client race	0.53	
	Photo with mismatched race	0.27	
female increases due to affective response	Female photo	0.40	
	Male photo	0.40	
match increases due to affinity/simliarity	Photo with gender matched to client gender	0.40	
	Photo with mismatched gender	0.40	
Feature 2: Number of Example Loans	One loan amount shown in example table	0.43	All
one loan increases: simplified choice avoids "choice overload" problem	Of low and medium risk clients	0.15	
	Of high risk clients	0.52	
	Four loan amounts shown in example table	0.57	
	Four loan amounts in table, one maturity (high risk clients)	0.48	
	Four loan amounts in table, one maturity (low/med risk clients)	0.75	
	Four loan amounts in table, three maturities (low/med risk clients)	0.10	Only low and medium risk eligible for 4 amount, 3 maturity treatment
Feature 3: Interest Rate Shown in Example(s)?	Interest rate shown (and monthly payments)	0.80	All
indeterminate: several potentially counteracting channels (see Section III-F-i of text for details)	Interest rate not shown (just monthly payments)	0.20	
Features 4-6: System II (deliberative processing) Treatments			
Feature 4: Suggested Loan Uses	"You can use this loan for anything you want"	0.20	All
no suggested uses maximizes demand; since suggesting particular uses triggers deliberation and reinforces the status quo (not borrowing)	"You can use this loan to X, or for anything else you want", where X is:		
	Pay off a more expensive debt	0.20	
	Buy an appliance	0.20	
	Pay for school	0.20	
	Repair your home	0.20	
Feature 5: Comparison to Outside Rate			
comparison increases by inducing choice of dominating (Lender's) option	No comparison to competitor rates	0.20	All
	Gain frame	0.40	
loss frame increases by triggering loss aversion	Loss frame	0.40	
Feature 6: Cell Phone Raffle			
indeterminate: mentioning increases if overestimate small probabilities, but decreases if reason-based choice and can't justify irrelevant good	Mentioned cell phone raffle	0.25	All
	Not mentioned cell phone raffle	0.75	
Features 7 and 8: Lender-imposed Treatments			
Feature 7: Client's Language	No mention of language	0.37	
	"We speak [client's language]"	0.63	Eligible if non-English primary language (0.44 of full sample)
Feature 8: "A 'special' or 'low' rate for you"	Interest rate is labeled as:		All
	"Special" or "Low"	0.75	
	No mention of "Special" or "Low"	0.25	
Other Treatments			
Interest Rate	High Risk: [3.25, 11.75]		Monthly rates randomly assigned from a smooth distribution, conditional on risk
	Medium Risk: [3.25, 9.75]		
	Low Risk: [3.25, 7.75]		
Deadline	Medium deadline (approx 4 weeks)	0.78	1.0 of sample eligible for medium
	Long deadline (approx 6 weeks)	0.14	0.79 of sample eligible for long (certain branches excluded by Lender)
	Short deadline (approx 2 weeks)	0.03	0.14 of sample eligible for short (certain branches excluded by Lender, and all PO Boxes excluded)
	Short deadline with option to extend 2 weeks by calling in	0.04	

Table II. Summary Statistics

	Full sample	Obtained a loan	Did not obtain a loan
Applied before deadline	0.085	1	0.01
Obtained a loan before deadline	0.074	1	0
Loan amount in Rand	110	1489	0
	(536)	(1351)	(0)
Loan in default		0.12	
Got outside loan and did not apply with Lender	0.22	0.00	0.24
Maturity = 4 months		0.81	
Offer rate	7.93	7.23	7.98
Last loan amount in Rand	1118	1158	1115
	(829)	(835)	(828)
Last maturity = 4 months	0.93	0.91	0.93
Low risk	0.14	0.30	0.12
Medium risk	0.10	0.21	0.10
High risk	0.76	0.50	0.78
Female	0.48	0.49	0.48
Predicted education (years)	6.85	7.08	6.83
	(3.25)	(3.30)	(3.25)
Number previous loans with Lender	4.14	4.71	4.10
	(3.77)	(4.09)	(3.74)
Months since most recent loan with Lender	10.4	6.19	10.8
	(6.80)	(5.81)	(6.76)
Race = African	0.85	0.85	0.85
Race = Indian	0.03	0.03	0.03
Race = White	0.08	0.08	0.08
Race = Mixed ("Coloured")	0.03	0.04	0.03
Gross monthly income in Rand	3416	3424	3416
	(19657)	(2134)	(20420)
Number of observations	53194	3944	49250

Means or proportions, with standard deviations in parentheses.

Table IIIa. Effects of Advertising Content on Borrower Behavior

Dependent Variable:	Applied for loan before mailer deadline	Applied for loan before mailer deadline	Applied for loan before mailer deadline	Obtained loan before mailer deadline	Loan amount obtained before mailer deadline	Loan in collection status	Borrowed from other Lender
Sample:	Full	Males	Females	Full	Full	Obtained	Full
Estimator	Probit	Probit	Probit	Probit	OLS	Probit	Probit
Mean(Dependent Variable):	0.0850	0.0824	0.0879	0.0741	110.4363	0.1207	0.2183
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
monthly interest rate in percentage point units (e.g., 8.2)	-0.0029***	-0.0025***	-0.0034***	-0.0026***	-4.7712***	0.0071***	0.0009
	(0.0005)	(0.0007)	(0.0008)	(0.0005)	(0.8238)	(0.0022)	(0.0008)
1=no photo	0.0013	-0.0050	0.0021	0.0029	3.9316	0.0013	-0.0024
	(0.0040)	(0.0048)	(0.0055)	(0.0037)	(7.6763)	(0.0166)	(0.0060)
1=female photo (System I: affective response)	0.0057**	0.0079**	0.0032	0.0056**	8.3292	-0.0076	-0.0047
	(0.0026)	(0.0034)	(0.0038)	(0.0024)	(5.0897)	(0.0107)	(0.0040)
1= photo gender matches client's (System I: affinity/similarity)	-0.0026			-0.0033	-7.1773	-0.0059	0.0041
	(0.0026)			(0.0024)	(5.0850)	(0.0107)	(0.0040)
1= photo race matches client's (System I: affinity/similarity)	-0.0056	-0.0014	-0.0099	-0.0035	9.0638	0.0181	-0.0018
	(0.0048)	(0.0064)	(0.0070)	(0.0044)	(10.4079)	(0.0176)	(0.0072)
1=one example loan shown (System I: avoid choice overload)	0.0068**	0.0099***	0.0031	0.0075***	2.4394	0.0073	-0.0043
	(0.0028)	(0.0038)	(0.0040)	(0.0026)	(4.8383)	(0.0117)	(0.0042)
1=interest rate shown (System I? several, potentially offsetting, channels)	0.0025	-0.0017	0.0073	0.0043	2.8879	0.0140	0.0007
	(0.0030)	(0.0042)	(0.0044)	(0.0028)	(6.7231)	(0.0123)	(0.0049)
1=cell phone raffle mentioned	-0.0023	-0.0001	-0.0049	-0.0013	-9.4384*	-0.0050	-0.0015
(System II: overestimate small probabilities vs. conflict from reason-based choice)	(0.0026)	(0.0036)	(0.0039)	(0.0025)	(5.1200)	(0.0109)	(0.0041)
1=no specific loan use mentioned	0.0059**	0.0084**	0.0031	0.0043	4.0850	0.0086	-0.0033
(System II: mentioning specific use, via text, triggers deliberation)	(0.0029)	(0.0040)	(0.0043)	(0.0027)	(5.6266)	(0.0121)	(0.0045)
1= comparison to competitor rate (System II: makes dominating option salient)	-0.0002	-0.0012	0.0010	0.0012	-2.6021	-0.0027	0.0054
	(0.0031)	(0.0043)	(0.0046)	(0.0029)	(6.2961)	(0.0133)	(0.0049)
1=loss frame comparison (System II: triggers loss aversion)	-0.0024	-0.0018	-0.0029	-0.0021	3.0925	0.0032	0.0027
	(0.0026)	(0.0035)	(0.0038)	(0.0024)	(5.0678)	(0.0108)	(0.0040)
1=we speak 'your language' (Lender imposed)	-0.0043	-0.0016	-0.0073	-0.0036	-11.3556*	-0.0031	0.0133**
	(0.0036)	(0.0049)	(0.0053)	(0.0033)	(6.2935)	(0.0152)	(0.0059)
1= a 'low' or 'special' rate for you (Lender imposed)	0.0001	-0.0022	0.0027	0.0010	3.3864	-0.0137	-0.0002
	(0.0031)	(0.0043)	(0.0045)	(0.0028)	(5.9209)	(0.0128)	(0.0047)
N	53194	27848	25346	53194	53194	3944	53194
(pseudo-) r-squared	0.0456	0.0481	0.0438	0.0534	0.0361	0.0674	0.0048
p-value F-test on all advertising content variables	0.0729	0.0623	0.5354	0.0431	0.2483	0.7485	0.4866
p-value F-test on Lender-imposed content ('low or 'special'; language)	0.5064	0.8217	0.3337	0.5254	0.1695	0.5382	0.0785
p-value F-test on psychology-motivated content (all other features)	0.0522	0.0300	0.5541	0.0286	0.3420	0.7262	0.7583
split psychology-motivated content:							
p-value F-test on System II (reasoning) content (suggested use, comparison, cell)	0.1946	0.2643	0.6200	0.4499	0.3399	0.9360	0.4947
p-value F-test on System I (intuitive) content (photo, # loans shown, rate shown)	0.0598	0.0211	0.3929	0.0127	0.4362	0.4346	0.7675
p-value F-test on System I, dropping rate shown	0.0355	0.0288	0.5130	0.0072	0.3288	0.4196	0.7169

* p<0.10, ** p<0.05, *** p<0.01. Huber-White standard errors. Probit results are marginal effects. All models include controls for randomization conditions: risk, race, gender, language, and mailer wave (September or October).

Treatment variable labels: parentheses contain summary description of our prior on why each ad content treatment would increase demand (or of reason(s) why we had no strong prior).

Omitted categories: male photo, no photo gender match, no photo race match, four example loans shown, no interest rate shown, no cell phone raffle mentioned, specific loan use mentioned, no comparison to competitor rate, gain frame comparison, no mention of speaking local language, no mention of low or special rate.

Table IIIb. Effects of Advertising Content on Borrower Behavior: Point Estimates in Table IIIa, Scaled by Price Effect

Dependent Variable:	Applied for loan before mailer deadline	Applied for loan before mailer deadline	Applied for loan before mailer deadline
Sample:	Full	Males	Females
Mean(Dependent Variable):	0.0850	0.0824	0.0879
	(1)	(2)	(3)
1=no photo	45	-200	62
1=female photo (System I: affective response)	197	316	94
1= photo gender matches client's (System I: affinity/similarity)	-90		
1= photo race matches client's (System I: affinity/similarity)	-193	-56	-291
1=one example loan shown (System I: avoid choice overload)	234	396	91
1=interest rate shown (System I? several, potentially offsetting, channels)	86	-68	215
1=cell phone raffle mentioned (System II: overestimate small probabilities vs. conflict from reason-based choice)	-79	-4	-144
1=no specific loan use mentioned (System II: mentioning specific use, via text, triggers deliberation)	203	336	91
1= comparison to competitor rate (System II: makes dominating option salient)	-7	-48	29
1=loss frame comparison (System II: triggers loss aversion)	-83	-72	-85
1=we speak 'your language' (Lender imposed)	-148	-64	-215
1= a 'low' or 'special' rate for you (Lender imposed)	3	-88	79

Cells divide the coefficent on the content variable from Table IIIa by the offer rate (i.e., the price) coefficient, and multiply by -100, to estimate the interest rate drop (in basis points) that would be required to achieve the same effect on demand that was achieved by the content treatment. So negative numbers indictate the equivalent interest rate increase needed to generate the drop in demand implied by a negative point estimate on a content variable. **Note that we calculate this for all content treatments here, including the ones that are not statistically significant in Table IIIa.**

Treatment variable labels: parentheses contain summary description of our prior on why each ad content treatment would increase demand (or of reason(s) why we had no strong prior).

Table IV. Effects of Deadline on Borrower Behavior

Panel A: Pre-Deadline Demand

Dependent Variable:	Applied before own deadline	Obtained loan before own deadline	Loan amount obtained before own deadline	Loan obtained before own deadline in collection status	Borrowed from other Lender	Applied within 2 weeks (short deadline length)
Sample:	Full	Full	Full	Obtained	Full	Full
Estimator:	Probit	Probit	OLS	Probit	Probit	Probit
Mean(Dependent Variable):	0.0850	0.0741	110.4363	0.1207	0.2183	0.0360
	(1)	(2)	(3)	(4)	(5)	(6)
Monthly interest rate in percentage point units (e.g., 8.2)	-0.0029***	-0.0026***	-4.7768***	0.0075***	0.0009	-0.0009***
	(0.0005)	(0.0005)	(0.8237)	(0.0023)	(0.0008)	(0.0003)
Short deadline, extended	0.0322***	0.0240**	31.1321*	0.0236	-0.0104	-0.0019
	(0.0118)	(0.0107)	(17.2858)	(0.0424)	(0.0131)	(0.0047)
Medium deadline	0.0300***	0.0270***	38.0335***	0.0205	-0.0065	-0.0046
	(0.0068)	(0.0061)	(13.8228)	(0.0300)	(0.0119)	(0.0047)
Long deadline	0.0603***	0.0563***	70.1119***	0.0138	-0.0054	-0.0055
	(0.0118)	(0.0112)	(15.0945)	(0.0363)	(0.0123)	(0.0042)
(pseudo-) r-squared	0.0461	0.0538	0.0351	0.0597	0.0007	0.0471
N	53194	53194	53194	3944	53194	53194
F-test of joint significance of all deadlines	0.0000	0.0000	0.0000	0.8487	0.8813	0.6570

Panel B: Post-Deadline Applications

Dependent Variable= Applied	After short deadline	After medium deadline	After long deadline
Sample:	Full	Full	Full
Estimator:	Probit	Probit	Probit
Mean(Dependent Variable):	0.1830	0.1477	0.1184
	(1)	(2)	(3)
Offer interest rate	-0.0010	0.0005	0.0009
	(0.0008)	(0.0007)	(0.0006)
Short deadline, extended	-0.0224*	-0.0052	-0.0030
	(0.0117)	(0.0113)	(0.0102)
Medium deadline	-0.0058	-0.0035	-0.0047
	(0.0112)	(0.0102)	(0.0092)
Long deadline	-0.0089	0.0019	-0.0014
	(0.0114)	(0.0108)	(0.0095)
Pseudo r-squared	0.0560	0.0448	0.0369
N	53194	53194	53194
F-test of joint significance of all deadlines	0.2518	0.6332	0.8262

* p<0.10, ** p<0.05, *** p<0.01. Huber-White standard errors. Probit results are marginal effects. All models include controls for randomization conditions: risk, mailer wave (September or October), and deadline eligibility.
Short deadline is the omitted category; "short deadline, extended" gave customers a number to call and get an extension (to the medium deadline).
Panel A Column 6: tests whether short deadlines spur action by inducing early applications. The dependent variable here is defined regardless of the individual's deadline length; i.e., the dependent variable =1 if the individual applied within two weeks of the mailer date, unconditional on her own deadline.

Panel B: Testing three alternative measures of post-deadline takeup helps ensure that our results here are not driven by mechanical timing differences, since we have a finite amount of post-deadline data (6 months). We measure post-deadline takeup using takeup after the short deadline (2 weeks), after the medium deadline (4 weeks), and after the long deadline (6 weeks). We define these outcomes for each member of the sample, regardless of their own deadline length, in order to ensure that everyone in the sample has the same takeup window. Otherwise those with the short deadline mechanically have a longer post-deadline window, and if there is a positive secular probability of hazard into takeup status within the range our deadlines produce (5 to 6 months), then this would mechanically push toward a decreasing relationship between deadline length and post-deadline takeup.

the trusted way to borrow cash

Figure I. Example Letter 1

30 October 2003

Shop 8
12 Market Street
Krugersdorp 1739
Tel: 011 660 2944

BUSINESS HOURS	
MON - FRI	08:30 - 16:30
SAT	08:00 - 12:00

A low rate for you.

Congratulations! As a valued client, you are now eligible for a low interest rate on your next cash loan from This is a limited time offer, so please come in by 30 November 2003 to take advantage of this offer.

You can use this cash to pay for school, or for anything else you want.

Enjoy low monthly repayments with this offer! Here is one example of a loan you can get under this offer:

Interest Rate	Loan Amount	Loan Term	Monthly Repayment
10.50%	R2000.00	4 Months	R710.00

LOAN AVAILABILITY SUBJECT TO TERMS & CONDITIONS

Loans available in other amounts. There are no hidden costs. What you see is what you pay.

If you borrow elsewhere you will pay R360.00 more in total on a R2000.00, 4 month loan.

How to apply:

Bring your ID book and latest payslip to your usual branch, by **30 November 2003** and ask for

Names of clients, employees and Lender supressed to preserve confidentiality.

Area Manager

P.S. Unfortunately, if you have already taken a loan since the date this letter was issued, you do not quality for this offer. Comparison based on a competitor's interest rate of 15% per month.

Figure II. Example Letter 2

the trusted way to borrow cash

25 September 2003

Shop 9B, Pinetown Arcade
Hill Street
Pinetown 3600
Tel: 031 717 8950

BUSINESS HOURS	
MON - FRI	08:30 - 16:30
SAT	08:00 - 12:00

A special rate for you.

Congratulations! As a valued client, you are now eligible for a special interest rate on your next cash loan from This is a limited time offer, so please come in by 31 October 2003

You can use this cash to buy an appliance, or for anything else you want.

Enjoy low monthly repayments with this offer! For example:

	4 Months	6 Months	12 Months
R500	R149.95	R108.28	R66.62
R1000	R299.90	R216.57	R133.23
R2000	R599.80	R433.13	R266.47
R4000	R1199.60	R866.27	R532.93

LOAN AVAILABILITY SUBJECT TO TERMS & CONDITIONS

Loans available in other amounts. There are no hidden costs. What you see is what you pay.

If you borrow elsewhere you will pay R280.14 more in total on a R350.00, 4 month loan.

How to apply:

Bring your ID book and latest payslip to your usual branch, by **31 October 2003** and ask for

Names of clients, employees and Lender supressed to preserve confidentiality.

Customer Consultant

P.S. Unfortunately, if you have already taken a loan since the date this letter was issued, you do not qualify for this offer. Comparison based on a competitor's interest rate of 25%.